CITY OF NEWARK
CITY COUNCIL

City Administration Building, City Council Chambers

37101 Newark Boulevard, Newark, CA 94560 | (510) 578-4266 | E-mail: city.clerk@newark.org

AGENDA

Thursday, September 12, 2024
7:00 P.M.

A. ROLL CALL

B. PRESENTATIONS

1. Proclaiming September 19 - 22, 2024 as Newark Days

2. Proclaiming September as National Preparedness Month

3. Proclaiming September as Childhood Cancer Awareness Month

C. PUBLIC COMMENT

The public is invited to address the City Council on any item not listed on the agenda. Public Comments are generally limited to 5 minutes per speaker. Please note that State law prohibits the Council from acting on non-agenda items.

D. CONSENT CALENDAR

Consent Calendar items are considered to be routine and may be approved by one motion. There will be no separate discussion on these items unless there is a request by a Council Member, a staff member, or a member of the public to remove an item for separate discussion and action.

1. Approval of Audited Demands

2. Approval of minutes: June 27 (special and regular meetings), July 8, July 25, and August 5.

3. Adopt a resolution accepting work with VSS International, Inc. for FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301

4. Adopt a resolution approving proposed Change Order No. 1 for FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 with G. Bortolotto & Company and approving a budget amendment for reappropriation of funds from FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 to FY 2023 Asphalt Concrete Street Overlay Program, Project 1300; exempt from CEQA review per CEQA Guidelines Section 15301

5. Report on administrative actions during August recess

6. Adopt a resolution authorizing the City Manager to execute a Contractual Services Agreement with Art Builds Community for on-call public art consulting services in the amount not to exceed $135,000 and amend the 2024-2026 Biennial Budget and Capital Improvement Plan to appropriate $135,000 from the Art in Public Places Fund

E. PUBLIC HEARINGS

F. OTHER BUSINESS

1. Adopt a resolution approving the 2024 Tri-City Local Hazard Mitigation Plan Update

2. Receive a presentation of the draft Facilities Master Plan and provide feedback

3. Resolution Approving an Alternate Means of Compliance for the Lepashki Homes Project

4. Status of the Newark Climate Action Plan Update project

5. Introduction of an Ordinance amending Chapter 2.09 of the Newark Municipal Code ("City Councilmembers-Compensation") to increase the salaries of City Councilmembers and Mayor.

G. CITY MANAGER UPDATES

H. CITY COUNCIL MATTERS

City Council Members report on attendance at intergovernmental agency meetings, conferences, and seminars since the last meeting. City Council Members may also announce upcoming events and coordinate attendance; report on local events attended since the last meeting; and make brief comments on issues of concern.

I. CLOSED SESSION

1. Conference with Real Property Negotiators (Pursuant to Government Code Section 54956.8)
Property: Stevenson Boulevard, Newark, CA 94560. APNs: 537-850-7-1, 537-850-8, 537-850-10, 537-850-11-3
City Negotiators: David Benoun, Steven Turner and Craig Bettencourt
Negotiating Parties: Seamus O'Connor and David Bider
Under Negotiation: Review of Price and Terms

J. ADJOURNMENT

MEETING INFORMATION

Members of the public may attend the meeting in person, watch online, or watch on Cable Channel 26. The ability to observe online or Cable Channel 26 is predicated on those technologies being available and functioning without technical difficulties. Should those platforms not be available, or become non-functioning, or should the City Council otherwise encounter technical difficulties that make those platforms unavailable, the City Council will proceed with business in person unless otherwise prohibited by law.

How to view the meeting remotely:
Livestream online at YouTube: https://www.youtube.com/@cityofnewark3077/streams
Copy/paste the YouTube URL into your browser if the link does not automatically open.

Cable Channel 26 - if the meeting does not broadcast live, please contact your service provider and request the City of Newark channel lineup.

Zoom will no longer be available for public participation unless required by Assembly Bill 2449. Should a Council Member or the Mayor attend the meeting via Zoom pursuant to Assembly Bill 2249, then the Webinar ID 818 4846 2349 will be activated. The Mayor will make an announcement at the beginning of the meeting that the City will be allowing public comment via Zoom. Raise your virtual hand to notify the City Clerk that you would like to speak during the item that you wish to speak on.

How to submit written Public Comment:
Send an email to City Clerk by 3:00 p.m. the day of the meeting. Please identify the agenda item number in the subject line of your email. Emails will be compiled into one file and will be distributed to the City Council before the meeting.

No question shall be asked of a council member, city staff, or an audience member except through the Mayor. No person shall interrupt the meeting. Any person who refuses to carry out instructions given by the Mayor for the purpose of maintaining order may be guilty of an infraction and may result in removal from the meeting.

Council Meeting Access/Materials:
The agenda packet is available for review at Agendas and Minutes. The packet is typically posted to the City website the Friday before the meeting, but no later than 72 hours before the meeting.

Pursuant to Government Code 54957.5, supplemental materials distributed less than 72 hours before this meeting, to a majority of the City Council, will be made available for public inspection at this meeting and will be posted at https://www.newark.org/departments/city-manager-s-office/agendas-minutes and will concurrently be made available for public inspection during regular business hours at the David W. Smith City Hall, 37101 Newark Boulevard, Newark CA. Materials prepared by City staff and distributed during the meeting are available for public inspection at the meeting or after the meeting if prepared by some other person. Documents related to closed session items or are exempt from disclosure will not be made available for public inspection. For those persons who require special accommodations, please contact the City Clerk at least two days prior to the meeting at City Clerk or 510-578-4266.

Executive Team Members

David J. Benoun City Manager	**Lenka Hovorka** Assistant City Manager
Kristopher J. Kokotaylo City Attorney	**Steven Turner** Community Development Director
Jonathan Arguello Police Chief	**Edwin Miranda** CIO/Information Technology Director
Howard Young Public Works Director	**Cathreene Ingham-Watters** Human Resources Director

Krysten Lee Finance Director	**Ryan Nishimoto** ACFD Deputy Chief
Nicholas Cuevas, Recreation and Community Services Director	

STAFF REPORT

Item B. 1.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Sheila Harrington, City Clerk
SUBJECT	Proclaiming September 19 - 22, 2024 as Newark Days

Newark Days is an annual four-day festival held to commemorate the birthday of the City of Newark. The event is organized and run by a non-profit corporation ("Newark Days Celebration, Inc.") that consists of dedicated community volunteers known in the community as the "Newark Days Committee". A proclamation has been prepared and members of the Newark Days Committee will accept it at the City Council meeting.

Attachments

Proclamation No. 1923

PROCLAMATION NO. 1923

NEWARK DAYS

WHEREAS, the Newark Days Committee annually celebrates the birth date of our City during the month of September; and

WHEREAS, this is a time to celebrate the community of Newark in all its aspects; and

WHEREAS, this is a time when all Newark residents are encouraged to explore our rich heritage and a time to recognize the multi-cultural contributions of divergent people who have come together to create a common sense of community; and

WHEREAS, this is also a time when we encourage Newark residents to pause and reflect on the values that we represent as a community so succinctly stated in our Newark Days Celebration motto, “People, Pride, and Progress”;

NOW, THEREFORE, I, Michael K. Hannon, Mayor of the City of Newark, on behalf of the Newark City Council, do hereby proclaim September 19-22, 2024, as

NEWARK DAYS

in Newark.

IN WITNESS THEREOF, I have hereunto set forth my hand and caused the Official Seal of the City of Newark, State of California, to be affixed this Twelfth Day of September, Two Thousand Twenty-four.

MICHAEL K. HANNON
Mayor

STAFF REPORT

Item B. 2.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Sheila Harrington, City Clerk
SUBJECT	Proclaiming September as National Preparedness Month

National Preparedness Month is an observance each September to raise awareness about the importance of preparing for disasters and emergencies that could happen at any time. Emergency Services Coordinator Richard Martinez, David Libby from the Community Emergency Response Team, and members of the business community will be at the meeting to accept the proclamation.

Attachments

Proclamation No. 1924

PROCLAMATION NO. 1924

NATIONAL PREPAREDNESS MONTH

WHEREAS, September is recognized as National Preparedness Month, a time dedicated to promoting awareness and encouraging individuals, families, organizations and businesses to plan and prepare for emergencies; and

WHEREAS, effective preparedness ensures that we are ready to handle unexpected events such as natural disasters, cybersecurity attacks, biohazard exposures, household chemical emergencies, pandemics, acts of violence in public places, and extreme weather events, ultimately safeguarding our community's well-being and resilience; and

WHEREAS, the PPRR (Plan, Prepare, Respond, Recover) framework is an essential strategy for managing emergency situations, enhancing our readiness, and supporting recovery efforts; and

WHEREAS, our local businesses and organizations play a key role in fostering a culture of preparedness by implementing emergency plans and encouraging employee readiness through the PPRR Program; and

WHEREAS, the City of Newark's PPRR program between March 2023 and August 2024 has trained 84 businesses in Newark with 338 individuals trained and 55 individuals completing all trainings in Fire Extinguisher, CPR, Abdominal Thrust Maneuver and Personal Emergency Preparedness; and

WHEREAS, the Community Emergency Response Team (CERT) provides vital training and support, empowering residents to assist in emergency situations and contribute to community safety; and

WHEREAS, assembling a "Go Kit" with critical supplies and developing a comprehensive emergency plan are crucial steps in individual and community preparedness; and

WHEREAS, registering for emergency alert systems such as AC Alert through Alameda County and Nixel through the City of Newark Police Department can provide vital information to assist community members during an emergency.

NOW, THEREFORE, I, Michael K. Hannon, Mayor of the City of Newark, on behalf of the Newark City Council, do hereby proclaim September 2024, as

NATIONAL PREPAREDNESS MONTH

in Newark and urge all residents, businesses, and organizations to prepare and evaluate their emergency plans, as well as participate in emergency preparedness trainings and activities.

IN WITNESS THEREOF, I have hereunto set forth my hand and caused the Official Seal of the City of Newark, State of California, to be affixed this Twelfth Day of September, Two Thousand Twenty-four.

MICHAEL K. HANNON
Mayor

STAFF REPORT

Item B. 3.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Sheila Harrington, City Clerk
SUBJECT	Proclaiming September as Childhood Cancer Awareness Month

September's Childhood Cancer Awareness Month is a time to shine a light on the realities of childhood cancer, emphasize the importance of life-saving research, and join together to make a difference for children diagnosed.

A proclamation will be presented to Angela Crawford of the Jammers Strong Foundation, a local non-profit organization whose mission is to create awareness, educate, and fight for a cure for every child with cancer.

Attachments

Proclamation No. 1925

PROCLAMATION NO. 1925

CHILDHOOD CANCER AWARENESS MONTH

WHEREAS, according to the American Childhood Cancer Organization, childhood cancer is the leading cause of death by disease for children in the United States and one of every six children are not expected to live past five years of age; and

WHEREAS, the American Cancer Society estimates that approximately 9,620 children in the United States under 15 years of age will be diagnosed with cancer in 2024; and

WHEREAS, most children cannot be treated at a local hospital, and families must face the disruption of relocating to receive treatment at a regional cancer center; and

WHEREAS, pediatric cancer research receives only 4% of all federal funding for cancer research, a fact that demonstrates why awareness and fundraising participation is so important; and

WHEREAS, due to children's bodies still growing and cancer treatments largely geared toward use on adults, children are more likely to experience long-term side effects from treatment; and

WHEREAS, childhood cancer treatment is handled by a team of pediatric oncologists and surgeons, radiation oncologists, pediatric oncology nurses, nurse practitioners, and physician assistants; and

WHEREAS, some of the most important members of a pediatric cancer patient's team are experienced parents who navigate and advocate on behalf of their children; and

WHEREAS, as a result of major treatment advances in recent decades, more than 85 percent of children with cancer now survive five years or more;

NOW, THEREFORE, I, Michael K. Hannon, Mayor of the City of Newark, on behalf of the Newark City Council, do hereby proclaim September 2024, as

CHILDHOOD CANCER AWARENESS MONTH

in Newark and encourage everyone to join the fight against childhood cancer and to participate in activities and events that promote awareness of childhood cancer and support families affected by this devastating disease not just during September but throughout the year.

IN WITNESS THEREOF, I have hereunto set forth my hand and caused the Official Seal of the City of Newark, State of California, to be affixed this Fourteenth Day of September, Two Thousand Twenty-three.

MICHAEL K. HANNON

Mayor

STAFF REPORT

Item D. 1.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Krysten Lee, Finance Director
SUBJECT	Approval of Audited Demands

Attachments

Audited Demands 07.11.24
Audited Demands 07.18.24
Audited Demands 07.25.24
Audited Demands 08.01.24_1
Audited Demands 08.01.24_2
Audited Demands 08.08.24_1
Audited Demands 08.08.24_2
Audited Demands 08.15.24
Audited Demands 08.22.24

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 07/11/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	07/11/2024	11668	Accounts Payable	LITTLE EXPLORERS MOBILE PETTING ZOO		483.00
	Invoice		Date	Description	Check Sort Code	Amount
	71124CAMPNEWARK		02/06/2024	FARM ANIMAL PETTING ZOO FOR CAMP NEWARK 07/11/24		483.00
Check	07/11/2024	11669	Accounts Payable	APPLIED LANDSCAPE MATERIALS, INC.		8,310.19
	Invoice		Date	Description	Check Sort Code	Amount
	15025		06/20/2024	PLAYGROUND FIBER BIRCH GROVE PARK 6/20/24		3,536.25
	15028		06/21/2024	PLAYGROUND FIBER CIVIC CENTER PARK 6/21/24		2,298.56
	15031		06/21/2024	PLAYGROUND FIBER MAYHEWS LANDING PARK 6/21/24		2,475.38
Check	07/11/2024	11670	Accounts Payable	BATTERY SYSTEMS INC		1,507.84
	Invoice		Date	Description	Check Sort Code	Amount
	3885821		06/19/2024	BATTERIES		1,507.84
Check	07/11/2024	11671	Accounts Payable	CINTAS CORP		164.96
	Invoice		Date	Description	Check Sort Code	Amount
	1904937338		06/17/2024	CITYWIDE POLOS		164.96
Check	07/11/2024	11672	Accounts Payable	EAST BAY LAWN MOWER		166.90
	Invoice		Date	Description	Check Sort Code	Amount
	39178		06/27/2024	FLEET STARTER REPLACEMENT 06/27/24		166.90
Check	07/11/2024	11673	Accounts Payable	FOLGERGRAPHICS, INC		4,263.88
	Invoice		Date	Description	Check Sort Code	Amount
	140128R		06/18/2024	PRINT SUMMER ISSUE OF CITY NEWSLETTER 06/24		4,263.88
Check	07/11/2024	11674	Accounts Payable	KARL FREDSTROM		80.00
	Invoice		Date	Description	Check Sort Code	Amount
	071024EXP		07/08/2024	COFFEE & DONUTS FOR HITT BRIEFING 07/10/24		80.00
Check	07/11/2024	11675	Accounts Payable	GACHINA LANDSCAPE MANAGEMENT, INC.		15,678.25
	Invoice		Date	Description	Check Sort Code	Amount
	E 219592		06/30/2024	L&L 1 IRRIGATION VALVE CONTROLLER 6/30/24		10,312.50
	E 219591		06/30/2024	L&L 1 IRRIGATION VALVE CONTROLLER 6/30/24		5,365.75
Check	07/11/2024	11676	Accounts Payable	GAME ACTION LLC		337.50
	Invoice		Date	Description	Check Sort Code	Amount

	001007	01/23/2024	GAME TRUCK FOR CAMP NEWARK EVENT 07/30/24		337.50
Check	07/11/2024	11677 Accounts Payable	GRAINGER		1,364.55
	Invoice	Date	Description	Check Sort Code	Amount
	9155477400	06/18/2024	PARK SUPPLIES-SLIDE LATCH		14.28
	9157413858	06/20/2024	PARK SUPPLIES-IR CAM		1,350.27
Check	07/11/2024	11678 Accounts Payable	BOB MURRAY & ASSOCIATES		8,892.66
	Invoice	Date	Description	Check Sort Code	Amount
	10682	06/15/2024	RECRUITMENT SERVICES FEE - PUBLIC WORKS DIRECTOR 06/15/24		8,892.66
Check	07/11/2024	11679 Accounts Payable	ICS INTEGRATED COMMUNICATION SYSTEMS		4,047.00
	Invoice	Date	Description	Check Sort Code	Amount
	2413037-1	06/19/2024	ZOOM PC INSTALL APPROVAL 2024-09 6/19/24		2,528.00
	2413091-1	06/19/2024	DISPLAY UPDATE APPROVAL 2024-09 6/19/24		923.00
	2413328-1	06/19/2024	DIAS MICS APPROVAL 2024-09 6/19/24		596.00
Check	07/11/2024	11680 Accounts Payable	NAPA AUTO PARTS		1,692.82
	Invoice	Date	Description	Check Sort Code	Amount
	JUN' 24	06/30/2024	NAPA - FLEET SUPPLIES JUNE 2024		1,692.82
Check	07/11/2024	11681 Accounts Payable	KNORR SYSTEMS INC		723.52
	Invoice	Date	Description	Check Sort Code	Amount
	237681	06/05/2024	POOL CHEMICALS		723.52
Check	07/11/2024	11682 Accounts Payable	KNORR SYSTEMS INTERNATIONAL		790.00
	Invoice	Date	Description	Check Sort Code	Amount
	237680	06/05/2024	POOL CHEMICALS		790.00
Check	07/11/2024	11683 Accounts Payable	RUTAN & TUCKER, LLP		2,625.00
	Invoice	Date	Description	Check Sort Code	Amount
	996352	06/21/2024	AREA 4 CEQA - SVCS THRU 5/31/24		2,625.00
Check	07/11/2024	11684 Accounts Payable	SAITECH INC		24,590.58
	Invoice	Date	Description	Check Sort Code	Amount
	55524	06/21/2024	CISCO CATALYST SWITCHES APPROVAL 2024-18		24,590.58
Check	07/11/2024	11685 Accounts Payable	SITEONE LANDSCAPE SUPPLY, LLC		311.53
	Invoice	Date	Description	Check Sort Code	Amount
	143242347-001	06/25/2024	CONCRETE-POINT OF SALE		53.18
	143346396-001	06/27/2024	CONCRETE-POINT OF SALE		258.35
Check	07/11/2024	11686 Accounts Payable	STAPLES		1,573.35
	Invoice	Date	Description	Check Sort Code	Amount
	7001040825	06/15/2024	OFFICE SUPPLIES 05/31-06/14/24		1,573.35
Check	07/11/2024	11687 Accounts Payable	CLASSIC GRAPHICS		2,395.73
	Invoice	Date	Description	Check Sort Code	Amount
	49699	06/17/2024	NEWARK DECALS		99.68
	49720	06/20/2024	DECAL INSTALL 6/20/24		819.35
	49723	06/20/2024	FLEET BODY WORK AND SPOT PAINT 6/20/24		1,476.70

Check	07/11/2024	11688	Accounts Payable	MICHAEL THOMAS		323.21

Invoice	Date	Description	Check Sort Code	Amount
0614-062724EXP	06/27/2024	BOOT REIMBURSEMENT 06/14-06/27/24		323.21

Check	07/11/2024	11689	Accounts Payable	TURF STAR, INC.		285.67

Invoice	Date	Description	Check Sort Code	Amount
INV025053	06/20/2024	FLEET TORO SUPPLIES-ROLLER, SCREW, NUT, HYDRAULIC HOSE		285.67

Check	07/11/2024	11690	Accounts Payable	ULINE		1,033.05

Invoice	Date	Description	Check Sort Code	Amount
179124416	06/07/2024	RUBBERMAID MOBILE SAFETY BARRIER		1,033.05

Check	07/11/2024	11691	Accounts Payable	URBAN PLANNING PARTNERS, INC.		10,797.50

Invoice	Date	Description	Check Sort Code	Amount
22002-240331	04/17/2024	PROJECT MGMT SVCS - LEPAKSHI @ THORNTON - SVCS 3/31/24		1,812.50
22002-240430	05/13/2024	PROJECT MGMT SVCS - LEPAKSHI @ THORNTON - SVCS 4/30/24		1,125.00
22002-240531	06/11/2024	PROJECT MGMT SVCS - LEPAKSHI @ THORNTON - SVCS 5/31/24		7,860.00

EFT	07/11/2024	1096	Accounts Payable	SPECTRUM SMALL BUSINESS SERVICES, LLC	325084426 / 5348560846	1,677.50

Invoice	Date	Description	Check Sort Code	Amount
06302024-GENERAL	06/30/2024	SM BUS SUPPORT - EMERG PREP PLANNING & ADVISORY TIME 6/24		921.25
06302024-ARPA	06/30/2024	SMALL BUSINESS SUPP - MEETINGS FOR OTBA - ARPA - 6/24		756.25

EFT	07/11/2024	1097	Accounts Payable	GHA TECHNOLOGIES INC (ACH)	122100024 / 836623900	13,711.24

Invoice	Date	Description	Check Sort Code	Amount
11397619	06/16/2024	NETMOTION RENEWAL - 3 YEAR TERM - 07/02/24 - 07/01/27		13,275.79
11398566	06/17/2024	JUNIPER SFP MODULES		435.45

EFT	07/11/2024	1098	Accounts Payable	REDWOOD PUBLIC LAW, LLP	121000358 / 325192270245	7,368.00

Invoice	Date	Description	Check Sort Code	Amount
10055	03/31/2024	LEGAL SERVICES FOR MOWRY VILLAGE PROJECT - SVCS THRU 3/31/24		1,377.00
10408	04/30/2024	LEGAL SERVICES FOR MCDONALD'S DESIGN REVIEW - SVCS THRU 4/30/24		2,692.00
10658	06/01/2024	LEGAL SERVICES FOR MCDONALD'S DESIGN REVIEW - SVCS THRU 5/31/24		2,945.50
10057	03/31/2024	LEGAL SERVICES FOR PROLOGIS DESIGN REVIEW - SVCS THRU 3/31/24		101.00
10661	06/01/2024	LEGAL SERVICES FOR PROLOGIS DESIGN REVIEW - SVCS THRU 5/31/24		252.50

AP ZBA ACCOUNTS PAYABLE Totals:		Transactions: 27	$115,195.43

Checks:	24	$92,438.69
EFTs:	3	$22,756.74

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 07/18/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	07/18/2024	11692	Accounts Payable	34TH STREET INC.		3,133.90
	Invoice	Date	Description		Check Sort Code	Amount
	2024-124	06/13/2024	DEESCALATION TRAINING & TRAVEL EXPENSES 6/12/24			3,133.90
Check	07/18/2024	11693	Accounts Payable	ADITYA T BABU		563.00
	Invoice	Date	Description		Check Sort Code	Amount
	0614-062824	07/09/2024	VIP VOLLEYBAL CLASSES FOR 6/14-6/28			563.00
Check	07/18/2024	11694	Accounts Payable	AFLAC		1,171.90
	Invoice	Date	Description		Check Sort Code	Amount
	339372	07/17/2024	AFLAC - JUNE 2024 PREMIUMS			1,171.90
Check	07/18/2024	11695	Accounts Payable	ALAMEDA COUNTY SHERIFF'S OFFICE		8,389.50
	Invoice	Date	Description		Check Sort Code	Amount
	JUNE 2024	06/30/2024	CRIME LAB FEES JUNE 2024			8,389.50
Check	07/18/2024	11696	Accounts Payable	ALPINE AWARDS INC		4,806.70
	Invoice	Date	Description		Check Sort Code	Amount
	6107981	06/20/2024	STAFF SHIRTS 6/20/24			1,744.24
	6107688	05/30/2024	STAFF SUMMER TSHIRTS 5/30/24			3,062.46
Check	07/18/2024	11697	Accounts Payable	WARREN ANTIDA		300.69
	Invoice	Date	Description		Check Sort Code	Amount
	070124EXP	07/01/2024	BOOT REIMBURSEMENT 7/1/24			300.69
Check	07/18/2024	11698	Accounts Payable	APPLIED LANDSCAPE MATERIALS, INC.		31,629.16
	Invoice	Date	Description		Check Sort Code	Amount
	15037	06/24/2024	PLAYGROUND FIBER BRIDGEPOINT PARK 6/24/24			2,475.38
	15038	06/24/2024	PLAYGROUND FIBER COMMUNITY CENTER PARK 6/24/24			2,475.38
	15021	06/19/2024	APPLY SB1383 COMPLIANT COMPOSTED MULCH 06/19/24			26,678.40
Check	07/18/2024	11699	Accounts Payable	GUSTAVO ARROYO		727.93
	Invoice	Date	Description		Check Sort Code	Amount
	062824EXP	07/12/2024	ACTIVE SHOOTER SYMPOSIUM 6/28/24			727.93
Check	07/18/2024	11700	Accounts Payable	BATTERY SYSTEMS INC		2,306.25
	Invoice	Date	Description		Check Sort Code	Amount
	28690408240833	04/08/2024	BATTERIES			173.32

	43980402241102	04/08/2024	BATTERIES			1,195.97
	4052157	07/10/2024	BATTERIES			936.96
Check	07/18/2024	11701 Accounts Payable		BOUND TREE MEDICAL, LLC		4,236.29
	Invoice	Date	Description		Check Sort Code	Amount
	85388801	06/20/2024	GLOVES - MED,LARGE & XL			4,236.29
Check	07/18/2024	11702 Accounts Payable		STATE DISBURSEMENT UNIT		1.38
	Invoice	Date	Description		Check Sort Code	Amount
	PPE 7.6.24	07/10/2024	GARNISH - CASE 200000002128365 - 6/23/24-7/6/24			1.38
Check	07/18/2024	11703 Accounts Payable		CALIFORNIA HOMICIDE INVESTIGATORS ASSOCIATION		60.00
	Invoice	Date	Description		Check Sort Code	Amount
	25746	06/24/2024	SWORN MEMBERSHIP - HOMAYOUN FY25			30.00
	25753	06/24/2024	SWORN MEMBERSHIP - HUNTER FY25			30.00
Check	07/18/2024	11704 Accounts Payable		CENTRAL VETERINARY HOSPITAL		716.90
	Invoice	Date	Description		Check Sort Code	Amount
	514471	06/13/2024	VET SVCS 06/13/24			97.25
	511238	04/04/2024	CANINE SVCS 04/03/24			619.65
Check	07/18/2024	11705 Accounts Payable		CINTAS CORP		634.09
	Invoice	Date	Description		Check Sort Code	Amount
	1904959391	06/26/2024	CITYWIDE POLO			634.09
Check	07/18/2024	11706 Accounts Payable		PETTY CASH CUSTODIAN - RAQUEL THOMAS		74.06
	Invoice	Date	Description		Check Sort Code	Amount
	100123-063024FIN	07/16/2024	PETTY CASH REPLENISHMENT 10/01/23-06/30/24			74.06
Check	07/18/2024	11707 Accounts Payable		COUNTY OF ALAMEDA		1,292.50
	Invoice	Date	Description		Check Sort Code	Amount
	JUNE '24	07/03/2024	CITATION PROCESSING FEES - JUNE '24			1,292.50
Check	07/18/2024	11708 Accounts Payable		ALAMEDA COUNTY INFORMATION TECHNOLOGY DEPARTMENT		6,657.33
	Invoice	Date	Description		Check Sort Code	Amount
	112-2403036	04/10/2024	AWS ACCESS FEE MARCH 2024			3,955.50
	163325	05/17/2024	SUBS-MOBILE-REPAIR 5/17-6/30/24			2,000.00
	163329	05/21/2024	SUBS-MOBILE-REPAIR 5/21-6/26/24			701.83
Check	07/18/2024	11709 Accounts Payable		CSU, EAST BAY FOUNDATION, INC.		1,720.96
	Invoice	Date	Description		Check Sort Code	Amount
	80013862	06/27/2024	DATA COLLECTION RESEARCH SUPPORT 05/01-05/31/24			1,720.96
Check	07/18/2024	11710 Accounts Payable		CSW I ST2		66,739.39
	Invoice	Date	Description		Check Sort Code	Amount
	2405068	05/31/2024	DESIGN SERVICES FOR OLD TOWN STREETSCAPE IMPROVEMENTS 05/05/24			18,979.23
	2406110	06/27/2024	DESIGN SERVICES FOR OLD TOWN STREETSCAPE IMPROVEMENTS 06/02/24			47,760.16
Check	07/18/2024	11711 Accounts Payable		CYNTHIA M. KIRBY		3,150.00

	Invoice	Date	Description	Check Sort Code	Amount
	2406029	06/01/2024	POLYGRAPH TESTING SERVICES - 2/19/24 - 5/24/24		3,150.00
Check	07/18/2024	11712 Accounts Payable	DELTA DENTAL OF CALIFORNIA		17,184.54
	Invoice	Date	Description	Check Sort Code	Amount
	BE006144006	07/10/2024	DELTA PPO - JULY 2024 PREMIUMS		17,184.54
Check	07/18/2024	11713 Accounts Payable	DELTA DENTAL INSURANCE COMPANY		241.51
	Invoice	Date	Description	Check Sort Code	Amount
	BE006142338	07/17/2024	DELTA CARE JULY 2024 PREMIUMS		241.51
Check	07/18/2024	11714 Accounts Payable	ECAMSECURE		90,648.88
	Invoice	Date	Description	Check Sort Code	Amount
	1204313	05/31/2024	MOBILE VIDEO SURVEILLANCE MAY'24		90,648.88
Check	07/18/2024	11715 Accounts Payable	MARVIN RAMIREZ		397.96
	Invoice	Date	Description	Check Sort Code	Amount
	1808	07/02/2024	PUBLIC NOTICE ELECTION PUBLISHED 07/12/24		397.96
Check	07/18/2024	11716 Accounts Payable	FIDELITY SECURITY LIFE INSURANCE/EYEMED		2,330.94
	Invoice	Date	Description	Check Sort Code	Amount
	166355526	07/17/2024	EYEMED JULY 2024 PREMIUMS		2,330.94
Check	07/18/2024	11717 Accounts Payable	FRANK BONETTI PLUMBING INC		20,209.14
	Invoice	Date	Description	Check Sort Code	Amount
	49143	06/24/2024	SILLIMAN DOUBLE SINK BACKUP 6/18/24		1,213.32
	49146	06/24/2024	THORNTON FIRE LOW WATER PRESSURE 6/5/24		915.27
	49144	06/24/2024	LAKESHORE PARK LINE REPLACEMENT 4/01/24		470.00
	49152	06/24/2024	BIRCH PARK RESTROOM BACK UP 6/14/24		358.00
	49145	06/24/2024	THORNTON FIRE WATER HEATER REPLACEMENT 5/22/24		17,252.55
Check	07/18/2024	11718 Accounts Payable	GRAINGER		1,787.29
	Invoice	Date	Description	Check Sort Code	Amount
	9117170606	05/13/2024	BLDG GENERAL SUPPLIES		1,442.57
	9162785233	06/25/2024	U-BEND FLUOR BULB		205.76
	9163197651	06/25/2024	DOUBLE SIDED TAPE		9.81
	9164642119	06/26/2024	GRINDING WHEEL		30.22
	9164749963	06/26/2024	HAND SOAP		98.93
Check	07/18/2024	11719 Accounts Payable	JUAN HERRERA		177.78
	Invoice	Date	Description	Check Sort Code	Amount
	062824EXP	07/12/2024	ACTIVE SHOOTER SYMPOSIUM 6/28/24		177.78
Check	07/18/2024	11720 Accounts Payable	HILLYARD		3,338.71
	Invoice	Date	Description	Check Sort Code	Amount
	605521382	06/27/2024	JANITORIAL SUPPLIES - TOWELS/TISSUE		3,338.71
Check	07/18/2024	11721 Accounts Payable	NICHOLAS ICASIANO		39.38
	Invoice	Date	Description	Check Sort Code	Amount
	070224EXP	07/02/2024	HEAT ILLNESS PREVENTION FLUIDS FY25		39.38

Check	07/18/2024	11722	Accounts Payable	JEFF'S MOBILE GLASS INC.	667.68

Invoice	Date	Description	Check Sort Code	Amount
IJMG-0624-83870	06/24/2024	WINSHIELD REPLACEMENT VEH 1107 6/24/24		667.68

Check	07/18/2024	11723	Accounts Payable	KNORR SYSTEMS INTERNATIONAL	17,307.76

Invoice	Date	Description	Check Sort Code	Amount
236536	05/24/2024	PULSAR BRIQUETTES 5/24/24		5,316.00
233129	04/30/2024	CO2 FEED BOX REPLACEMENT 4/30/24		2,741.11
232956	04/22/2024	SILLIMAN PULSAR TROUBLESHOOT 4/16/24		886.00
232305	04/15/2024	SILLIMAN QUARTERLY MAINTENANCE 4/24		8,364.65

Check	07/18/2024	11724	Accounts Payable	L.N. CURTIS & SONS	1,521.44

Invoice	Date	Description	Check Sort Code	Amount
INV838279	03/26/2024	PATROL SUPPLIES 6/25/24		1,521.44

Check	07/18/2024	11725	Accounts Payable	LOOMIS	329.88

Invoice	Date	Description	Check Sort Code	Amount
13526394	06/30/2024	ARMORED CAR SERVICE - 06/24		329.88

Check	07/18/2024	11726	Accounts Payable	JOSUE LOPEZ-DUENAS	350.00

Invoice	Date	Description	Check Sort Code	Amount
070824EXP	07/08/2024	BOOT REIMBURSEMENT 7/8/24		350.00

Check	07/18/2024	11727	Accounts Payable	LPC SERVICES, INC.	542.00

Invoice	Date	Description	Check Sort Code	Amount
74511	05/10/2024	PEST SERVICES - FIRE STATION #1 102707 5/10/24		275.00
74618	05/30/2024	PEST SERVICES - CITY HALL #102699 5/30/24		267.00

Check	07/18/2024	11728	Accounts Payable	LYNN PEAVEY COMPANY	476.47

Invoice	Date	Description	Check Sort Code	Amount
410950	07/11/2024	EVIDENCE SUPPLIES		476.47

Check	07/18/2024	11729	Accounts Payable	MARK GOTHARD	800.00

Invoice	Date	Description	Check Sort Code	Amount
605202406202204	07/16/2024	SENIOR CHAIR FITNESS/SELF DEFENSE SEMINAR 06/20/24		800.00

Check	07/18/2024	11730	Accounts Payable	BRICK TECH	3,889.50

Invoice	Date	Description	Check Sort Code	Amount
0617-062824	07/09/2024	BRICK TECH CLASSES FOR 6/17-6/28/24		3,889.50

Check	07/18/2024	11731	Accounts Payable	MIKE YORKS INVESTIGATIONS	3,225.00

Invoice	Date	Description	Check Sort Code	Amount
2024-09	07/01/2024	BACKGROUND INVESTIGATIONS 05/03-06/26/24		3,225.00

Check	07/18/2024	11732	Accounts Payable	MFCP INC	279.44

Invoice	Date	Description	Check Sort Code	Amount
9158827	06/24/2024	FLEET SUPPLIES		279.44

Check	07/18/2024	11733	Accounts Payable	AVENU INSIGHTS & ANALYTICS	3,750.00

Invoice	Date	Description	Check Sort Code	Amount
INV06-018970	06/25/2024	UUT AUDIT & ANALYSIS - FIXED FEE APR - JUN '24		3,750.00

Check	07/18/2024	11734	Accounts Payable	KIDZ LOVE SOCCER		4,267.20
	Invoice		Date	Description	Check Sort Code	Amount
	0609-070424		07/09/2024	KIDZ LOVE SOCCER CLASSES FIR 6/9-7/4/24		4,267.20
Check	07/18/2024	11735	Accounts Payable	PAKPOUR CONSULTING GROUP, INC.		24,542.44
	Invoice		Date	Description	Check Sort Code	Amount
	4492		07/08/2024	PROJECT MANAGEMENT SERVICES FOR CENTRAL AVE OVERPASS PRJ 06/24		24,034.50
	4491		07/08/2024	ON-CALL CIVIL ENGINEERING PLAN REVIEW SERVICES 06/24		507.94
Check	07/18/2024	11736	Accounts Payable	RYAN PEREZ		100.06
	Invoice		Date	Description	Check Sort Code	Amount
	071224EXP		07/12/2024	CLASS A APPLICATION FEE-RYAN PEREZ		100.06
Check	07/18/2024	11737	Accounts Payable	PLAN JPA		1,870.80
	Invoice		Date	Description	Check Sort Code	Amount
	INV0044		06/27/2024	GENERAL LIABILITY PREMIUM FY23/24-MAY 2024		1,870.80
Check	07/18/2024	11738	Accounts Payable	RAY RABELO		5,700.00
	Invoice		Date	Description	Check Sort Code	Amount
	1024		07/07/2024	ENTERTAINMENT FOR MARIACHI FESTIVAL 7/21/24		5,700.00
Check	07/18/2024	11739	Accounts Payable	ROADRUNNER GLASS DOOR, INC		825.89
	Invoice		Date	Description	Check Sort Code	Amount
	13955		06/24/2024	SVC PLATE GLASS REPLACEMENT 6/24/24		825.89
Check	07/18/2024	11740	Accounts Payable	S & S WORLDWIDE, INC.		1,593.98
	Invoice		Date	Description	Check Sort Code	Amount
	IN101397693		05/22/2024	STORAGE CABINETS FOR CHILDCARE		1,593.98
Check	07/18/2024	11741	Accounts Payable	SEDGWICK		660.00
	Invoice		Date	Description	Check Sort Code	Amount
	BRS-0020628		06/25/2024	REMOTE RISK CONTROL-MAY 2024		660.00
Check	07/18/2024	11742	Accounts Payable	SNG & ASSOCIATES, INC.		31,367.50
	Invoice		Date	Description	Check Sort Code	Amount
	2024-0519		06/18/2024	ON CALL CIVIL ENGINEERING PLAN REVIEW SERVICES 05/24		31,367.50
Check	07/18/2024	11743	Accounts Payable	STANDARD INSURANCE COMPANY		1,591.78
	Invoice		Date	Description	Check Sort Code	Amount
	JULY 2024		07/10/2024	STANDARD - JULY 2024 PREMIUMS		1,591.78
Check	07/18/2024	11744	Accounts Payable	STATE OF CALIFORNIA		1,310.37
	Invoice		Date	Description	Check Sort Code	Amount
	PPE 7.6.24		07/10/2024	GARNISH - CASE 560794111 - 6/23/24-7/6/24		436.39
	PPE 5.25.24-2		06/30/2024	GARNISH - CASE 560794111 - 5/12/24-5/25/24		873.98
Check	07/18/2024	11745	Accounts Payable	LEHR		1,368.70
	Invoice		Date	Description	Check Sort Code	Amount
	SI102849		06/26/2024	FLEET SURFACE MOUNT		1,368.70
Check	07/18/2024	11746	Accounts Payable	SYSERCO, INC		9,519.75

	Invoice	Date	Description	Check Sort Code	Amount
	14317	04/01/2024	QUARTERLY BILLING - 6/30/24		9,519.75
Check	07/18/2024	11747 Accounts Payable	CLASSIC GRAPHICS		43,605.73
	Invoice	Date	Description	Check Sort Code	Amount
	49743	06/25/2024	FLEET FIRE ENGINE STORAGE BOX		2,032.26
	49744	06/25/2024	FLEET FLAT STEEL		3,477.55
	49754	06/27/2024	OUTFITTING F-450		37,821.13
	49757	06/28/2024	DECALS		274.79
Check	07/18/2024	11748 Accounts Payable	MARY TEIXEIRA		435.00
	Invoice	Date	Description	Check Sort Code	Amount
	EXPREIMB-07/24	07/17/2024	FOOD FOR MEET & GREET, DECORATIONS, FOOD FOR PD ORAL BOARD FY25		435.00
Check	07/18/2024	11749 Accounts Payable	THE KPA GROUP		5,230.00
	Invoice	Date	Description	Check Sort Code	Amount
	010	06/30/2024	ON-CALL ARCHITECTURAL SERVICES 06/01-06/30/24		5,230.00
Check	07/18/2024	11750 Accounts Payable	JENNIFER TRAN		2,037.38
	Invoice	Date	Description	Check Sort Code	Amount
	EDUREIMB-SP2024	05/21/2024	EDUCATIONAL REIMBURSEMENT- FY23-24 - SPRING 2024		2,037.38
Check	07/18/2024	11751 Accounts Payable	UNITED STATES POSTMASTER		4,050.00
	Invoice	Date	Description	Check Sort Code	Amount
	IN44256	07/16/2024	POSTAGE PAYMENT FOR FALL REC ACTIVITIES POSTCARDS FY 25		4,050.00
Check	07/18/2024	11752 Accounts Payable	ROBERT VOGEL		600.00
	Invoice	Date	Description	Check Sort Code	Amount
	06252024	06/25/2024	MAGIC SHOW FOR CAMP NEWARK 6/25/24		600.00
Check	07/18/2024	11753 Accounts Payable	WEST COAST ARBORISTS INC		31,229.10
	Invoice	Date	Description	Check Sort Code	Amount
	216661	06/30/2024	PARK TREE MAINTENANCE 06/16/24-06/30/24		3,042.00
	216660	06/30/2024	STREET TREE MAINTENANCE 06/16/24-06/30/24		28,187.10
Check	07/18/2024	11754 Accounts Payable	WILLIAM D. WHITE CO, INC.		1,925.69
	Invoice	Date	Description	Check Sort Code	Amount
	460747	03/18/2024	PD GATE SERVICE - 3/13/24		842.19
	460727	03/04/2024	PD GATE SERVICE - 2/12 - 2/21/24		1,083.50
Check	07/18/2024	11755 Accounts Payable	WILMA LOTT CATERING		3,441.73
	Invoice	Date	Description	Check Sort Code	Amount
	17128	06/28/2024	CATERING FOR THE AC MAYORS' CONFERENCE 07/10/24		3,441.73
Check	07/18/2024	11756 Accounts Payable	ARIAS , ROSEALINDA		1,000.00
	Invoice	Date	Description	Check Sort Code	Amount
	2023-5884	07/10/2024	ENCP2023-0151 RFND		1,000.00
Check	07/18/2024	11757 Accounts Payable	MISTRY , DEEPALI		106.00
	Invoice	Date	Description	Check Sort Code	Amount
	718718	07/12/2024	CUSTOMER REFUND DUE TO SCHEDULE CONFLICT		106.00

Check	07/18/2024	11758	Accounts Payable	TANCINCO , ELISE		91.00

Invoice	Date	Description	Check Sort Code	Amount
718489	07/10/2024	SWIM LESSON REFUND		91.00

EFT	07/18/2024	1114	Accounts Payable	METROPOLITAN PLANNING GROUP	121042882 / 2016189470	4,101.25

Invoice	Date	Description	Check Sort Code	Amount
2004544REV	06/28/2024	CEQA REVIEW FOR THE PROLOGIS PROJECT - SVCS THRU 05/31/24		4,101.25

AP ZBA ACCOUNTS PAYABLE Totals:		Transactions: 68	$490,378.58

Checks:	67	$486,277.33
EFTs:	1	$4,101.25

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 07/25/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	07/25/2024	11759	Accounts Payable	BAGSINBULK		1,361.04
	Invoice		Date	Description	Check Sort Code	Amount
	149097		07/19/2024	BACKPACK KITS FOR ASH BBQ		1,361.04
Check	07/25/2024	11760	Accounts Payable	ACCESS		111.20
	Invoice		Date	Description	Check Sort Code	Amount
	11008446		06/30/2024	SHREDDING SVCS JUNE 2024		111.20
Check	07/25/2024	11761	Accounts Payable	AIRGAS USA, LLC		102.41
	Invoice		Date	Description	Check Sort Code	Amount
	5509305344		06/30/2024	CYL ACETYLENE RENTAL 06/30/24		102.41
Check	07/25/2024	11762	Accounts Payable	ALTA LANGUAGE SERVICES, INC.		66.00
	Invoice		Date	Description	Check Sort Code	Amount
	IS727264		06/30/2024	LISTENING & SPEAKING TEST - 06/24		66.00
Check	07/25/2024	11763	Accounts Payable	DENISE AMBRIZ		173.06
	Invoice		Date	Description	Check Sort Code	Amount
	04202024EXP		07/18/2024	PUPPETS FOR THE REC DEPT PRESCHOOL AND CHILDCARE		173.06
Check	07/25/2024	11764	Accounts Payable	JONATHAN ARGUELLO		3,974.83
	Invoice		Date	Description	Check Sort Code	Amount
	EDUREIMB-FALL23		06/30/2024	TRANSF. LEADERSHIP AND DEVELOP. AND IMPLEMENT EMERGY. PREPARE		3,974.83
Check	07/25/2024	11765	Accounts Payable	BAY ISLAND OFFICIALS ASSOCIATION		720.00
	Invoice		Date	Description	Check Sort Code	Amount
	JUNE302024		06/30/2024	OFFICIATING FOR BASKETBALL AND VOLLEYBALL GAMES FOR JUNE '24		720.00
Check	07/25/2024	11766	Accounts Payable	BLAISDELL'S BUSINESS PRODUCTS		1,826.13
	Invoice		Date	Description	Check Sort Code	Amount
	JUNE'24		07/01/2024	OFFICE SUPPLIES 06/03-06/27/24		1,826.13
Check	07/25/2024	11767	Accounts Payable	CA POLICE CHIEFS ASSOC		3,300.00
	Invoice		Date	Description	Check Sort Code	Amount
	5901		03/18/2024	WLLE-ARROYO, MACIAS, ARGUELLO, GRIESE, SIMON, SANDOVAL 09/24		3,300.00
Check	07/25/2024	11768	Accounts Payable	CINTAS CORPORATION NO. 3		3,369.00
	Invoice		Date	Description	Check Sort Code	Amount

	JUN' 24		06/30/2024	UNIFORM/MATS JUNE 2024		3,369.00
Check	07/25/2024	11769	Accounts Payable	CPS HR CONSULTING		845.25
	Invoice		Date	Description	Check Sort Code	Amount
	TR-INV004548		06/29/2024	MANAGEMENT ANALYST TEST FOR RECRUITMENT 06/24		845.25
Check	07/25/2024	11770	Accounts Payable	DEPARTMENT OF JUSTICE		290.00
	Invoice		Date	Description	Check Sort Code	Amount
	746061		06/30/2024	FINGERPRINTING FEES - 06/24		290.00
Check	07/25/2024	11771	Accounts Payable	FRONTIER BUILDING PRODUCTS PACIFIC, INC		2,219.00
	Invoice		Date	Description	Check Sort Code	Amount
	7-2-1004310		07/02/2024	SVC DOOR REPAIR 6/26/24		2,219.00
Check	07/25/2024	11772	Accounts Payable	GOOD CITY COMPANY		12,870.00
	Invoice		Date	Description	Check Sort Code	Amount
	3654		06/30/2024	GENERAL PLANNING SERVICES - SVCS 06/01 - 06/30/24		12,870.00
Check	07/25/2024	11773	Accounts Payable	HARRINGTON INDUSTRIAL PLASTICS LLC		189.82
	Invoice		Date	Description	Check Sort Code	Amount
	003U1421		07/02/2024	PVC PIPE-POINT OF SALE		189.82
Check	07/25/2024	11774	Accounts Payable	HDL SOFTWARE, LLC		1,241.17
	Invoice		Date	Description	Check Sort Code	Amount
	SIN040784		06/30/2024	UUT RETURNS PROCESSED - JUNE 2024		1,241.17
Check	07/25/2024	11775	Accounts Payable	DEEPA IYER		1,270.00
	Invoice		Date	Description	Check Sort Code	Amount
	EXPREIMB-07/24		07/22/2024	CALPELRA MEMBERSHIP AND 2024 ANNUAL CONFERENCE REG FY25		1,270.00
Check	07/25/2024	11776	Accounts Payable	LEXIS NEXIS RISK DATA MANAGEMENT INC		424.20
	Invoice		Date	Description	Check Sort Code	Amount
	1415640-20240630		06/30/2024	BACKGROUND CHECKS JUNE 2024		424.20
Check	07/25/2024	11777	Accounts Payable	LEXISNEXIS RISK SOLUTIONS FL INC		50.00
	Invoice		Date	Description	Check Sort Code	Amount
	1845802-20240630		06/30/2024	INVESTIGATIVE INFO RESEARCH - 6/30/24		50.00
Check	07/25/2024	11778	Accounts Payable	MARK GOTHARD		8,976.36
	Invoice		Date	Description	Check Sort Code	Amount
	41024062724		06/27/2024	CHESS AND KARATE CLASSES FOR 4/10-6/27/24		8,976.36
Check	07/25/2024	11779	Accounts Payable	OCCUPATIONAL HEALTH CENTERS OF CALIFORNIA		149.00
	Invoice		Date	Description	Check Sort Code	Amount
	83556614		06/19/2024	PRE-EMPLOYMENT/ DOT PHYSICALS - 06/19/24		149.00
Check	07/25/2024	11780	Accounts Payable	PLAN JPA		1,936,165.00
	Invoice		Date	Description	Check Sort Code	Amount
	INV0075		07/01/2024	FY 24/25 GENERAL LIABILITY AND PROPERTY MEMBER CONTRIBUTIONS		1,936,165.00
Check	07/25/2024	11781	Accounts Payable	REDFLEX TRAFFIC SYSTEMS, INC		17,400.00

	Invoice	Date	Description		Check Sort Code	Amount
	INV0079853	06/30/2024	REDLIGHT CAMERA MONITORING JUNE 2024			17,400.00
Check	07/25/2024	11782 Accounts Payable	STAPLES			2,249.79
	Invoice	Date	Description		Check Sort Code	Amount
	7001237917	06/30/2024	OFFICE SUPPLIES 06/17-06/27/24			2,249.79
Check	07/25/2024	11783 Accounts Payable	TEMPERATURE TECHNOLOGY INC.			2,616.85
	Invoice	Date	Description		Check Sort Code	Amount
	I3336	07/02/2024	COMMUNITY CENTER HVAC SERVICE 6/19/24-06/25/24			2,616.85
Check	07/25/2024	11784 Accounts Payable	TURBO DATA SYSTEMS, INC			700.00
	Invoice	Date	Description		Check Sort Code	Amount
	43274	06/30/2024	E-CITATION HARDWARE AND TRAFFIC PROCESSING SERVICES JUN '24			700.00
Check	07/25/2024	11785 Accounts Payable	TURF STAR, INC.			777.44
	Invoice	Date	Description		Check Sort Code	Amount
	INV028034	07/05/2024	MOWER HYDRAULIC HOSE ASM			777.44
Check	07/25/2024	11786 Accounts Payable	U.S. BANK CORPORATE PAYMENT SYSTEMS			60,942.97
	Invoice	Date	Description		Check Sort Code	Amount
	072224STMT	07/22/2024	CC PAYMENT 07/22/24			60,942.97
Check	07/25/2024	11787 Accounts Payable	WASHINGTON HOSPITAL			100.00
	Invoice	Date	Description		Check Sort Code	Amount
	0624-NPD-LB	07/02/2024	LAB TESTS JUNE 2024			100.00
Check	07/25/2024	11788 Accounts Payable	WEST COAST ARBORISTS INC			28,914.25
	Invoice	Date	Description		Check Sort Code	Amount
	216744	07/16/2024	L&L 4 TREE MAINTENANCE 06/22/24-06/28/24			12,704.95
	216134	06/27/2024	L&L 4 TREE MAINTENANCE 06/05/24-06/12/24			16,209.30
Check	07/25/2024	11789 Accounts Payable	WEX BANK			1,477.01
	Invoice	Date	Description		Check Sort Code	Amount
	98253726	07/06/2024	CHEVRON CC 06/30/24			1,477.01
Check	07/25/2024	11790 Accounts Payable	SOUZA , SHANNON			500.00
	Invoice	Date	Description		Check Sort Code	Amount
	716308	06/27/2024	CUSTOMER REFUND FOR CANCELED EVENT			500.00
Check	07/25/2024	11791 Accounts Payable	SOUZA , SHANNON			1,265.00
	Invoice	Date	Description		Check Sort Code	Amount
	716309	06/27/2024	CUSTOMER REFUND FOR CANCELED EVENT			1,265.00
EFT	07/25/2024	1115 Accounts Payable	METROPOLITAN PLANNING GROUP	121042882 / 2016189470		2,974.75
	Invoice	Date	Description		Check Sort Code	Amount
	2004589	07/05/2024	CEQA REVIEW FOR THE PROLOGIS PROJECT - SVCS THRU 06/30/24			2,974.75
EFT	07/25/2024	1116 Accounts Payable	REDWOOD PUBLIC LAW, LLP	121000358 / 325192270245		31,648.50
	Invoice	Date	Description		Check Sort Code	Amount

10999	07/03/2024	LEGAL SVCS/SANCTUARY WEST/ACQ. OF PROPERTY - SVCS THRU 6/30/24	151.50
10409	04/30/2024	LEGAL SERVICES FOR MOWRY VILLAGE PROJECT - SVCS THRU 4/30/24	8,659.00
10659	06/01/2024	LEGAL SERVICES FOR MOWRY VILLAGE PROJECT - SVCS THRU 5/31/24	19,355.50
11009	07/03/2024	LEGAL SERVICES FOR MOWRY VILLAGE PROJECT - SVCS THRU 6/30/24	2,330.00
11013	07/03/2024	LEGAL SVCS/SAHA PROJECT/MATTER ID: 489.1014 - SVCS THRU 6/30/24	1,152.50
AP ZBA ACCOUNTS PAYABLE Totals:		Transactions: 35	$2,131,260.03

Checks:	33	$2,096,636.78
EFTs:	2	$34,623.25

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/01/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/01/2024	11793	Accounts Payable	ABACUS PRODUCTS INC		390.73
	Invoice	Date	Description		Check Sort Code	Amount
	B76711	07/11/2024	RECORD ADMIN FEE			390.73
Check	08/01/2024	11794	Accounts Payable	DIGIQUATICS		3,337.20
	Invoice	Date	Description		Check Sort Code	Amount
	3638	06/03/2024	SCHEDULING SOFTWARE FOR TE STAFF 7/24 - 06/25			3,337.20
Check	08/01/2024	11795	Accounts Payable	ALAMEDA COUNTY FIRE DEPARTMENT		977,083.00
	Invoice	Date	Description		Check Sort Code	Amount
	2023-24-342	06/30/2024	CONTRACT FIRE SERVICES - 06/24			977,083.00
Check	08/01/2024	11796	Accounts Payable	DENISE AMBRIZ		80.00
	Invoice	Date	Description		Check Sort Code	Amount
	04232024EXP	06/26/2024	TOY PLAYSET FOR CHILDCARE CLASSROOM			80.00
Check	08/01/2024	11797	Accounts Payable	AMERICAN RED CROSS		425.60
	Invoice	Date	Description		Check Sort Code	Amount
	22705272	06/30/2024	FIRST AID/CPR TRAINING 6/3/24			425.60
Check	08/01/2024	11798	Accounts Payable	APPLIED LANDSCAPE MATERIALS, INC.		36,516.06
	Invoice	Date	Description		Check Sort Code	Amount
	15052	06/28/2024	APPLY SB1383 COMPLIANT COMPOSTED MULCH 6/28/24			36,516.06
Check	08/01/2024	11799	Accounts Payable	ASCENT ENVIRONMENTAL, INC.		4,825.00
	Invoice	Date	Description		Check Sort Code	Amount
	20230149.01-3	07/01/2024	CLIMATE ACTION PLAN DEVELOPMENT 05/24			4,825.00
Check	08/01/2024	11800	Accounts Payable	ASSOCIATED RIGHT OF WAY SERVICES, INC.		10,500.00
	Invoice	Date	Description		Check Sort Code	Amount
	000000022422	06/05/2024	APPRAISAL SVCS 24062 APN 537-850-8 - SANCTUARY WEST PRJ 05/24			10,500.00
Check	08/01/2024	11801	Accounts Payable	BAY CENTRAL PRINTING		85.88
	Invoice	Date	Description		Check Sort Code	Amount
	199145	06/06/2024	BUSINESS CARD IMPRINTING - YONATHAN			85.88
Check	08/01/2024	11802	Accounts Payable	CAL SAFETY INC		360.00
	Invoice	Date	Description		Check Sort Code	Amount

	30707	07/09/2024	FLAGGER SIGN RENTAL 06/13-07/10/24		360.00
Check	08/01/2024	11803 Accounts Payable	STATE DISBURSEMENT UNIT		1.38
	Invoice	Date	Description	Check Sort Code	Amount
	PPE 7.20.24	07/25/2024	GARNISH - CASE 200000002128365 - 7/7/24-7/20/24		1.38
Check	08/01/2024	11804 Accounts Payable	BEACON VETERINARY SPECIALISTS		630.00
	Invoice	Date	Description	Check Sort Code	Amount
	153066	05/06/2024	VET SVCS 05/04/24		150.00
	152121	04/05/2024	VET SVCS 03/30/24		150.00
	151352	03/13/2024	VET SVCS 03/12/24		150.00
	154124	06/06/2024	VET SVCS 06/05/24		180.00
Check	08/01/2024	11805 Accounts Payable	CENTRAL VETERINARY HOSPITAL		906.12
	Invoice	Date	Description	Check Sort Code	Amount
	511926	05/18/2024	VET SVCS 04/10/24		906.12
Check	08/01/2024	11806 Accounts Payable	FREMONT CHEVROLET/FREMONT BUICK GMC CADILLAC		7.49
	Invoice	Date	Description	Check Sort Code	Amount
	154191	07/10/2024	FLEET SUPPLIES-CAP		7.49
Check	08/01/2024	11807 Accounts Payable	ALAMEDA COUNTY INFORMATION TECHNOLOGY DEPARTMENT		7,182.00
	Invoice	Date	Description	Check Sort Code	Amount
	112-2406036	07/17/2024	AWS ACCESS FEE JUNE 2024		3,602.50
	112-2405036	06/15/2024	AWS ACCESS FEE MAY 2024		3,579.50
Check	08/01/2024	11808 Accounts Payable	CPRS		2,474.16
	Invoice	Date	Description	Check Sort Code	Amount
	07192024	07/19/2024	MEMBERSHIP RENEWAL 09/30/24		2,474.16
Check	08/01/2024	11809 Accounts Payable	DALE HARDWARE		1,507.12
	Invoice	Date	Description	Check Sort Code	Amount
	JUL' 24	07/25/2024	DALE SUPPLIES 07/25/2024		1,507.12
Check	08/01/2024	11810 Accounts Payable	DEPARTMENT OF INDUSTRIAL RELATIONS		292.50
	Invoice	Date	Description	Check Sort Code	Amount
	P2085670SA	07/25/2024	STATE INSPECTIONS FOR POOL SIDER 7/17/24		97.50
	P2085672SA	07/25/2024	STATE LAW INSPECTION FOR LAZY RIVER 7/17/24		97.50
	P2085671SA	07/25/2024	STATE INSPECTIONS FOR AQUATUBE 7/17/24		97.50
Check	08/01/2024	11811 Accounts Payable	DUKE DE LEON		735.00
	Invoice	Date	Description	Check Sort Code	Amount
	4185	06/30/2024	BROADCAST AND STREAM CC AND PC MTGS JUNE 2024		735.00
Check	08/01/2024	11812 Accounts Payable	EMERSON USA INC.		2,674.90
	Invoice	Date	Description	Check Sort Code	Amount
	1468	07/10/2024	FLAGS - CITYWIDE		2,674.90
Check	08/01/2024	11813 Accounts Payable	EWING IRRIGATION PRODUCTS INC.		2,849.83
	Invoice	Date	Description	Check Sort Code	Amount

	22771255	07/02/2024	PARK SUPPLIES-RISER, SOLENOID, HUNTER - POINT OF SALE			869.26
	22771187	07/02/2024	IRRIGATION SPRINKLER-POINT OF SALE			748.72
	22771308	07/02/2024	IRRIGATION SUPPLIES-POINT OF SALE			1,231.85
Check	08/01/2024	11814 Accounts Payable	FEDEX			150.85
	Invoice	Date	Description		Check Sort Code	Amount
	8-564-22558	07/19/2024	PACKAGE DELIVERY 7/12/24			134.35
	8-563-88720	07/19/2024	PACKAGE DELIVERY 7/9/24			16.50
Check	08/01/2024	11815 Accounts Payable	CITY OF FOSTER CITY			4,078.00
	Invoice	Date	Description		Check Sort Code	Amount
	16112	07/05/2024	CALOPPS ANNUAL MEMBERSHIP FEE 07/01/24-06/30/25			4,078.00
Check	08/01/2024	11816 Accounts Payable	FREMONT CDJR			5,208.11
	Invoice	Date	Description		Check Sort Code	Amount
	229785	05/31/2024	FLEET SERVICE VEH1904-LEAK 05/31/24			5,208.11
Check	08/01/2024	11817 Accounts Payable	FREMONT FORD			63,640.32
	Invoice	Date	Description		Check Sort Code	Amount
	080124	07/18/2024	VEH PURC F150-CHECK UPON DELIVERY 8/1/24			63,640.32
Check	08/01/2024	11818 Accounts Payable	GIGANTIC IDEA STUDIO, INC.			2,616.46
	Invoice	Date	Description		Check Sort Code	Amount
	INV-4278	07/11/2024	RECYCLING & WASTE REDUCTION OUTREACH - 06/24			2,616.46
Check	08/01/2024	11819 Accounts Payable	GRAINGER			851.61
	Invoice	Date	Description		Check Sort Code	Amount
	9178754991	07/11/2024	SILLIMAN FUSE CLASS 7/11/24			244.57
	9179377222	07/11/2024	FLEET HOSE REEL 7/11/24			607.04
Check	08/01/2024	11820 Accounts Payable	HARRINGTON INDUSTRIAL PLASTICS LLC			197.98
	Invoice	Date	Description		Check Sort Code	Amount
	003UY0529	06/03/2024	PARK SUPPLIES-ADAPTER 6/3/24			197.98
Check	08/01/2024	11821 Accounts Payable	HOME DEPOT CREDIT SERVICES			682.53
	Invoice	Date	Description		Check Sort Code	Amount
	JUL' 24	07/12/2024	HOME DEPOT CC PURCHASE 06/20/24-07/11/24			682.53
Check	08/01/2024	11822 Accounts Payable	LORENZO HOULE			350.00
	Invoice	Date	Description		Check Sort Code	Amount
	071824EXP	07/18/2024	BOOT REIMBURSEMENT 7/18/24			350.00
Check	08/01/2024	11823 Accounts Payable	I PIZZA			1,513.00
	Invoice	Date	Description		Check Sort Code	Amount
	060124-062924	07/01/2024	PIZZA FOR BIRTHDAY PARTIES 06/01 - 06/29/24			1,513.00
Check	08/01/2024	11824 Accounts Payable	INTEGRITY SURVEILLANCE GROUP			998.00
	Invoice	Date	Description		Check Sort Code	Amount
	16636	06/30/2024	GPS TRACKER SVC FY 24/25			998.00
Check	08/01/2024	11825 Accounts Payable	KBA DOCUMENT SOLUTIONS			4,532.98
	Invoice	Date	Description		Check Sort Code	Amount

	200718	06/30/2024	LEASE PAYMENT 1900869002 - 06/15/24 - 07/14/24			4,342.60
	200720	06/25/2024	LEASE PAYMENT 1900869004 - 06/15/24 - 07/14/24			190.38
Check	08/01/2024	11826 Accounts Payable	KIM TURNER			999.00
	Invoice	Date	Description		Check Sort Code	Amount
	5129	07/10/2024	COMM1-009 10/02/2024 - C SIMON			999.00
Check	08/01/2024	11827 Accounts Payable	L.N. CURTIS & SONS			171.22
	Invoice	Date	Description		Check Sort Code	Amount
	INV842086	07/08/2024	MAFF GEAR-CERVANTES 7/2/24			171.22
Check	08/01/2024	11828 Accounts Payable	LPC SERVICES, INC.			267.00
	Invoice	Date	Description		Check Sort Code	Amount
	75561	07/08/2024	PEST SERVICES - CITY HALL #102699 07/08/24			267.00
Check	08/01/2024	11829 Accounts Payable	MEYERS NAVE			395.00
	Invoice	Date	Description		Check Sort Code	Amount
	219598	07/18/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			395.00
Check	08/01/2024	11830 Accounts Payable	MIKE YORKS INVESTIGATIONS			2,100.00
	Invoice	Date	Description		Check Sort Code	Amount
	2024-13	06/30/2024	BACKGROUND INVESTIGATIONS 06/26-06/30/24			975.00
	2024-12	06/30/2024	BACKGROUND INVESTIGATIONS 05/17-06/30/24			1,125.00
Check	08/01/2024	11831 Accounts Payable	MISTERSOFTEENORCAL			506.85
	Invoice	Date	Description		Check Sort Code	Amount
	072024	07/19/2024	SOFT SERVE ICE CREAM TRUCK FOR CAMP ASH STREET 7/24/24			506.85
Check	08/01/2024	11832 Accounts Payable	MOORE RECREATION THERAPY AND CONSULTING INC			5,250.00
	Invoice	Date	Description		Check Sort Code	Amount
	1	06/28/2024	ADAPTIVE PROGRAMMING ASSESSMENT & PROGRAM DEVELOPMENT 7/25/24			5,250.00
Check	08/01/2024	11833 Accounts Payable	OMAR PACHECO			1,409.25
	Invoice	Date	Description		Check Sort Code	Amount
	062224-062824EXP	07/12/2024	EXPLORER SUMMER ACADEMY 6/22-6/23/24			1,409.25
Check	08/01/2024	11834 Accounts Payable	PEAK SOFTWARE SYSTEMS, INC			5,917.00
	Invoice	Date	Description		Check Sort Code	Amount
	027469	07/18/2024	SOFTWARE SUBSCRIPTION FY25			5,917.00
Check	08/01/2024	11835 Accounts Payable	PLACER LABS, INC.			9,261.00
	Invoice	Date	Description		Check Sort Code	Amount
	12.6391	07/23/2024	SUBCNTR LOCATION BASED SVCS & ANALYTICS - 7/1/24 - 6/30/25			9,261.00
Check	08/01/2024	11836 Accounts Payable	POSITIVE PROMOTIONS, INC			438.45
	Invoice	Date	Description		Check Sort Code	Amount
	62662010	07/09/2024	CEM SUPPLIES FY25			438.45
Check	08/01/2024	11837 Accounts Payable	PREFERRED ALLIANCE INC			65.00
	Invoice	Date	Description		Check Sort Code	Amount
	0197029-IN	06/30/2024	RANDOM & NON-RANDOM DRUG TESTING - JUN '24			65.00

Check	08/01/2024	11838	Accounts Payable	BAY AREA JUMP	607.50

Invoice	Date	Description	Check Sort Code	Amount
279131	07/30/2024	JUMPER FOR ASH STREET CAMP 7/26/24		607.50

Check	08/01/2024	11839	Accounts Payable	RUTAN & TUCKER, LLP	1,155.00

Invoice	Date	Description	Check Sort Code	Amount
999761	07/25/2024	AREA 4 CEQA - SVCS THRU 6/30/24		1,155.00

Check	08/01/2024	11840	Accounts Payable	SIRCHIE ACQUISITION COMPANY, LLC	121.34

Invoice	Date	Description	Check Sort Code	Amount
0649658-IN	06/19/2024	EVIDENCE BAGS		121.34

Check	08/01/2024	11841	Accounts Payable	STANDARD INSURANCE COMPANY	1,594.79

Invoice	Date	Description	Check Sort Code	Amount
AUGUST 2024	07/25/2024	STANDARD - AUGUST 2024 PREMIUMS		1,594.79

Check	08/01/2024	11842	Accounts Payable	SUN RIDGE SYSTEMS INC	2,630.00

Invoice	Date	Description	Check Sort Code	Amount
RIMS-062024-0009	06/24/2024	RIMSCON FOR NARAYAN KRISHNAN 10/07-10/11/24		1,315.00
RIMS-062024-0007	06/24/2024	RIMSCON FOR PETER FONG 10/07-10/11/24		1,315.00

Check	08/01/2024	11843	Accounts Payable	SURF TO SNOW ENVIRONMENTAL RESOURCE	39,718.75

Invoice	Date	Description	Check Sort Code	Amount
13694	06/30/2024	MUNICIPAL STORMWATER INSPECTION SERVICES (05/01-06/30/24)		39,718.75

Check	08/01/2024	11844	Accounts Payable	CLASSIC GRAPHICS	440.79

Invoice	Date	Description	Check Sort Code	Amount
49799	07/12/2024	AMERICAN FLAG PRINT		440.79

Check	08/01/2024	11845	Accounts Payable	TIREHUB, LLC	888.22

Invoice	Date	Description	Check Sort Code	Amount
41904857	05/14/2024	TIRES-GY EAGLE RS		444.11
41779755	05/07/2024	TIRES-GY EAGLE RS		444.11

Check	08/01/2024	11846	Accounts Payable	TRUE NORTH COMPLIANCE SERVICES, INC.	14,545.00

Invoice	Date	Description	Check Sort Code	Amount
24-06-032	07/01/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 06/24		1,345.00
24-06-01-032	07/01/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 06/24		13,200.00

Check	08/01/2024	11847	Accounts Payable	H&M SOUND	25,000.00

Invoice	Date	Description	Check Sort Code	Amount
002-2024	07/24/2024	2024 SUMMER CONCERT SERIES FINAL PAYMENT - 07/24		25,000.00

Check	08/01/2024	11848	Accounts Payable	UNION PACIFIC RAILROAD COMPANY	104.48

Invoice	Date	Description	Check Sort Code	Amount
90135840	06/11/2024	PRELIMINARY ENGINEERING SVCS FOR MOWRY VILLAGE PROJECT - 02/24		104.48

Check	08/01/2024	11849	Accounts Payable	URBAN PLANNING PARTNERS, INC.	5,480.00

Invoice	Date	Description	Check Sort Code	Amount

	22002-240630	07/18/2024	PROJECT MGMT SVCS - LEPAKSHI @ THORNTON - SVCS 6/30/24			5,480.00
Check	08/01/2024	11850 Accounts Payable	BOSCO OIL INC DBA VALLEY OIL			25,745.33
	Invoice	Date	Description		Check Sort Code	Amount
	198367	07/22/2024	GASOLINE 07/22/24			20,410.41
	198368	07/22/2024	DIESEL FUEL 07/22/24			5,334.92
Check	08/01/2024	11851 Accounts Payable	VERIZON WIRELESS			10,581.26
	Invoice	Date	Description		Check Sort Code	Amount
	9964447511	05/18/2024	WIRELESS SERVICE 04/19-05/18/24			10,581.26
Check	08/01/2024	11852 Accounts Payable	WATERPROOFING ASSOCIATES, INC.			1,145.00
	Invoice	Date	Description		Check Sort Code	Amount
	49787	01/31/2024	SILLIMAN LEAK INVESTIGATION 1/26/24			1,145.00
Check	08/01/2024	11853 Accounts Payable	ARTEMIS SELF DEFENSE, LLC			15,912.42
	Invoice	Date	Description		Check Sort Code	Amount
	082024	06/21/2024	PRE-ESCALATION INSTRUCTOR RECERT AUG 2024			15,912.42
Check	08/01/2024	11854 Accounts Payable	ORION SECURITY			3,916.85
	Invoice	Date	Description		Check Sort Code	Amount
	127384	07/13/2024	UNARMED, UNIFORMED SECURITY GUARD 7/8/24 - 7/12/24			1,444.00
	127445	07/20/2024	UNARMED, UNIFORMED SECURITY GUARD 7/15/24 - 7/18/24			1,046.90
	127506	07/27/2024	UNARMED, UNIFORMED SECURITY GUARD 7/22/24 - 7/26/24			1,425.95
Check	08/01/2024	11855 Accounts Payable	LOPEZ , CONSUELO			177.00
	Invoice	Date	Description		Check Sort Code	Amount
	722303	07/30/2024	QUALIIED FOR SCHOLARSHIP AND PAID FULL PRICE			177.00
EFT	08/01/2024	1129 Accounts Payable	ART BUILDS COMMUNITY LLC	322271627 / 521573215		6,300.00
	Invoice	Date	Description		Check Sort Code	Amount
	#5	06/05/2024	CENTRAL OVERPASS PROGRESS REPORT #5 APR-MAY 2024			1,950.00
	#6-OLD TOWN	06/06/2024	OLD TOWN STREETSCAPE PUBLIC ART PROJECT MGMT 05/06-06/06/24			4,350.00
EFT	08/01/2024	1130 Accounts Payable	CONSOR NORTH AMERICA, INC.	071006486 / 2937050		244,298.47
	Invoice	Date	Description		Check Sort Code	Amount
	N16N131CA.00-44	04/30/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 02/01-02/29/24			48,687.00
	N16N131CA.00-43	02/29/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 01/01-01/31/24			62,893.25
	N16N131CA.00-42	02/05/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 12/01-12/31/23			52,435.00
	N16N131CA.00-41	01/30/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 11/01-11/30/23			48,008.12
	N16N131CA.00-46	07/10/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 06/01-06/30/24			32,275.10
EFT	08/01/2024	1131 Accounts Payable	GHA TECHNOLOGIES INC (ACH)	122100024 / 836623900		13,759.16
	Invoice	Date	Description		Check Sort Code	Amount
	11401727	06/30/2024	NINJAONE 03/22/24 - 06/21/2025			13,759.16
EFT	08/01/2024	1132 Accounts Payable	PET BENEFIT SOLUTION	021000021 / 238821802		53.75
	Invoice	Date	Description		Check Sort Code	Amount
	169467	07/25/2024	TOTAL PET PLAN - JULY 2024 PREMIUMS			53.75
EFT	08/01/2024	1133 Accounts Payable	QUADIENT FINANCE USA, INC.	011900254 / 385015844484		1,274.50
	Invoice	Date	Description		Check Sort Code	Amount

	4857 - JUN '24	06/16/2024	POSTAGE - JUN '24			1,274.50
EFT	08/01/2024	1134 Accounts Payable	REDWOOD PUBLIC LAW, LLP	121000358 / 325192270245		54,474.08
	Invoice	Date	Description		Check Sort Code	Amount
	11002	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			2,530.20
	11004	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			1,763.40
	11005	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			28,195.30
	11007	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			65.40
	11008	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			101.00
	11016	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			427.78
	11010	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			1,562.80
	11011	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			4,218.30
	11015	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			4,170.40
	11000	07/03/2024	LEGAL SVCS/CCCMA ASSISTED LIVING FAC/SVCS THRU 6/30/24			3,181.00
	10651	06/01/2024	LEGAL SERVICES - LEPAKSHI PROJECT - SVCS THRU 5/31/24			5,684.00
	11003	07/03/2024	LEGAL SERVICES - LEPAKSHI PROJECT - SVCS THRU 6/30/24			2,574.50
AP ZBA ACCOUNTS PAYABLE Totals:			Transactions: 69			$1,634,387.27

Checks:	63	$1,314,227.31
EFTs:	6	$320,159.96

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/01/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/01/2024	11792	Miscellaneous Billing Refund	MILLAN , PEPITA & ROMULO		1,000.00
AP ZBA ACCOUNTS PAYABLE Totals:				Transactions: 1		$1,000.00

Checks:	1	$1,000.00

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/08/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/08/2024	11857	Accounts Payable	4LEAF INC		10,080.00
	Invoice		Date	Description	Check Sort Code	Amount
	J1118A55(a)		05/15/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 04/24		8,400.00
	J1118A56		06/20/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 05/24		1,680.00
Check	08/08/2024	11858	Accounts Payable	AFLAC		1,171.90
	Invoice		Date	Description	Check Sort Code	Amount
	704529		08/01/2024	AFLAC - JULY 2024 PREMIUMS		1,171.90
Check	08/08/2024	11859	Accounts Payable	ALAMEDA CO LIBRARY		66,675.00
	Invoice		Date	Description	Check Sort Code	Amount
	FY2324-20		07/15/2024	ADDITIONAL LIBRARY HOURS JAN - MAR 2024		33,337.50
	FY2324-21		07/15/2024	ADDITIONAL LIBRARY HOURS APR - JUN 2024		33,337.50
Check	08/08/2024	11860	Accounts Payable	ALAMEDA COUNTY FIRE DEPARTMENT		1,146,323.08
	Invoice		Date	Description	Check Sort Code	Amount
	2024-25-005		07/11/2024	CONTRACT FIRE SERVICES - 07/24		1,146,323.08
Check	08/08/2024	11861	Accounts Payable	ALLIED AUTO STORES INC		2,015.90
	Invoice		Date	Description	Check Sort Code	Amount
	JUN' 24		06/30/2024	ALLIED-FLEET SUPPLIES 06/04-06/25/24		2,015.90
Check	08/08/2024	11862	Accounts Payable	JONATHAN ARGUELLO		577.54
	Invoice		Date	Description	Check Sort Code	Amount
	0519-052224EXP		07/10/2024	POLICE CHIEF'S ANNUAL TRAINING 05/19-05/22/24		577.54
Check	08/08/2024	11863	Accounts Payable	AT&T		131.89
	Invoice		Date	Description	Check Sort Code	Amount
	2300-06012024		06/01/2024	CAPTION LISTING - 06/01-06/30/2024		131.89
Check	08/08/2024	11864	Accounts Payable	BAIRD + DRISKELL COMMUNITY PLANNING		13,992.50
	Invoice		Date	Description	Check Sort Code	Amount
	1713		07/19/2024	ON-CALL PLANNING SERVICES 6/1/24-6/30/24		13,992.50
Check	08/08/2024	11865	Accounts Payable	BMI		435.00
	Invoice		Date	Description	Check Sort Code	Amount
	11480050		07/02/2024	MUSIC LICENSE FEE 07/01/24 - 06/30/25		435.00

Check	08/08/2024	11866	Accounts Payable	BPR CONSULTING GROUP LLC	20,842.12

Invoice	Date	Description	Check Sort Code	Amount
1698	06/11/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 05/24		15,178.22
1772	07/09/2024	BI FIELD INSPECTION AND RELATED PROFESSIONAL SERVICES 06/24		5,663.90

Check	08/08/2024	11867	Accounts Payable	CA POLICE CHIEFS ASSOC	155.00

Invoice	Date	Description	Check Sort Code	Amount
7039	07/01/2024	CPCA MEMBERSHIP 2024-2025- MACIAS		155.00

Check	08/08/2024	11868	Accounts Payable	CIVICPLUS, LLC	625.00

Invoice	Date	Description	Check Sort Code	Amount
304907	07/01/2024	ONLINE CODE HOSTING 07/01/24 - 06/30/25		625.00

Check	08/08/2024	11869	Accounts Payable	CIVICPLUS, LLC	1,890.00

Invoice	Date	Description	Check Sort Code	Amount
303952	07/01/2024	FULL-SERVICE SUPPLEMENTATION SUBSCRIPTION 12/15/22 - 6/30/25		1,890.00

Check	08/08/2024	11870	Accounts Payable	COMCAST	1,721.63

Invoice	Date	Description	Check Sort Code	Amount
8821-072824	06/24/2024	TELEVISION & PUBLIC WIFI ACCESS 06/29-07/28/24		860.80
8821-082824	07/24/2024	TELEVISION & PUBLIC WIFI ACCESS 07/29-08/28/24		860.83

Check	08/08/2024	11871	Accounts Payable	ALAMEDA COUNTY CLERK	50.00

Invoice	Date	Description	Check Sort Code	Amount
PRJ1344	07/24/2024	NOTICE OF EXEMPTION HANDLING FEE - 1344		50.00

Check	08/08/2024	11872	Accounts Payable	ALAMEDA COUNTY CLERK	50.00

Invoice	Date	Description	Check Sort Code	Amount
PRJ1345	07/24/2024	NOTICE OF EXEMPTION HANDLING FEE - 1345		50.00

Check	08/08/2024	11873	Accounts Payable	COVINO SMITH & SIMON, INC.	1,700.00

Invoice	Date	Description	Check Sort Code	Amount
06-2024	06/25/2024	PROFESSIONAL FEDERAL AFFAIRS ASSISTANCE JUNE 2024		1,700.00

Check	08/08/2024	11874	Accounts Payable	DELTA DENTAL OF CALIFORNIA	17,320.55

Invoice	Date	Description	Check Sort Code	Amount
BE006174267	08/01/2024	DELTA PPO - AUGUST 2024 PREMIUMS		17,320.55

Check	08/08/2024	11875	Accounts Payable	DELTA DENTAL INSURANCE COMPANY	241.51

Invoice	Date	Description	Check Sort Code	Amount
BE006172604	08/01/2024	DELTA CARE - AUGUST 2024 PREMIUMS		241.51

Check	08/08/2024	11876	Accounts Payable	DSSV, INC.	1,105.00

Invoice	Date	Description	Check Sort Code	Amount
INV179	06/14/2024	BRIGHTWHEEL SUBSCRIPTION FOR CHILDCARE PROGRAM 07/22/24-07/22/25		1,105.00

Check	08/08/2024	11877	Accounts Payable	EQUIFAX INFORMATION SVCS LLC	51.58

Invoice	Date	Description	Check Sort Code	Amount
2061230538	07/13/2024	CREDIT BUREAU REPORT FEES - 7/13/24		51.58

Check	08/08/2024	11878	Accounts Payable	FEDEX	19.00

	Invoice	Date	Description	Check Sort Code	Amount
	8-558-27482	07/12/2024	PACKAGE DELIVERY 7/9/24		19.00
Check	08/08/2024	11879 Accounts Payable	FEHR & PEERS		7,465.51
	Invoice	Date	Description	Check Sort Code	Amount
	176589	06/21/2024	TASK ORDER #10 - ACTIVE TRANSPORTATION PLAN 04/27-05/31/24		7,465.51
Check	08/08/2024	11880 Accounts Payable	FIDELITY SECURITY LIFE INSURANCE/EYEMED		2,328.64
	Invoice	Date	Description	Check Sort Code	Amount
	166398568	08/01/2024	EYEMED - AUGUST 2024 PREMIUMS		2,328.64
Check	08/08/2024	11881 Accounts Payable	FRANK BONETTI PLUMBING INC		1,163.00
	Invoice	Date	Description	Check Sort Code	Amount
	49277	07/19/2024	RUSCHIN FIRE PLUMBING LEAK 7/8/24		1,163.00
Check	08/08/2024	11882 Accounts Payable	FREMONT FORD		1,054.89
	Invoice	Date	Description	Check Sort Code	Amount
	226042	07/17/2024	FLEET SUPPLIES-BRAKE PAD AND ROTOR		452.62
	225979	07/15/2024	FLEET SUPPLIES-REMOTE CONTROL SYSTEM		74.76
	225977	07/16/2024	FLEET SUPPLIES-LAMP ASY		252.51
	437421	07/17/2024	FLEET SERVICE VEH #1701 7/9/24		275.00
Check	08/08/2024	11883 Accounts Payable	MITCHELL FRENTESCU		346.52
	Invoice	Date	Description	Check Sort Code	Amount
	0513-051824EXP	07/31/2024	MILEAGE REIMBURSEMENT-FAIRFIELD SCHOOL 05/13-05/16/24		346.52
Check	08/08/2024	11884 Accounts Payable	GACHINA LANDSCAPE MANAGEMENT, INC.		28,635.19
	Invoice	Date	Description	Check Sort Code	Amount
	E 220040A	07/01/2024	MAINTENANCE CONTRACT JULY 2024		9,495.83
	E 220040B	07/01/2024	MAINTENANCE CONTRACT-PARKS, CH, PD, LIB JULY 2024		19,139.36
Check	08/08/2024	11885 Accounts Payable	GRAINGER		433.93
	Invoice	Date	Description	Check Sort Code	Amount
	9183703900	07/16/2024	SILLIMAN HANDHELD SHOWER		288.24
	9183703892	07/16/2024	LTD EXT CORD AND DOOR CLOSER		145.69
Check	08/08/2024	11886 Accounts Payable	GYM DOCTORS		225.00
	Invoice	Date	Description	Check Sort Code	Amount
	00157129	07/18/2024	FITNESS CENTER MAINTENANCE 7/17/24		225.00
Check	08/08/2024	11887 Accounts Payable	HDL SOFTWARE, LLC		10,521.48
	Invoice	Date	Description	Check Sort Code	Amount
	SIN040452	07/03/2024	BL SOFTWARE RENEWAL & PAYMENT SERVICES ANNUAL FEE 8/1/24-7/31/25		10,521.48
Check	08/08/2024	11888 Accounts Payable	INDUSTRIAL PLUMBING SUPPLY, LLC.		1,262.18
	Invoice	Date	Description	Check Sort Code	Amount
	116546	07/16/2024	SILLIMAN DRINKING FOUNTAIN		1,262.18
Check	08/08/2024	11889 Accounts Payable	THE THEATRE FACTORY		4,951.80
	Invoice	Date	Description	Check Sort Code	Amount

	0610-061424	07/09/2024	THEATER FACTORY CLASSES FOR 6/10-6/14/24		4,951.80
Check	08/08/2024	11890 Accounts Payable	ITERIS, INC.		12,205.00
	Invoice	Date	Description	Check Sort Code	Amount
	170959	06/26/2024	TRAFFIC SIGNAL INTERCONNECT PROJECT #1361 05/01-05/31/24		12,205.00
Check	08/08/2024	11891 Accounts Payable	WENANTA KALUKIEWICZ		259.80
	Invoice	Date	Description	Check Sort Code	Amount
	0502-052324	07/15/2024	BARRE CLASSES FOR 05/02-05/23/24		259.80
Check	08/08/2024	11892 Accounts Payable	KNORR SYSTEMS INC		11,631.10
	Invoice	Date	Description	Check Sort Code	Amount
	232260	04/12/2024	SILLIMAN AQUATIC CENTER SMA PARTS		11,631.10
Check	08/08/2024	11893 Accounts Payable	L.N. CURTIS & SONS		524.33
	Invoice	Date	Description	Check Sort Code	Amount
	INV844947	07/16/2024	MAFF GEAR-CERVANTES		524.33
Check	08/08/2024	11894 Accounts Payable	LIEBERT CASSIDY WHITMORE		652.50
	Invoice	Date	Description	Check Sort Code	Amount
	271024	06/30/2024	PROFESSIONAL SERVICES RENDERED THROUGH JUNE 30, 2024		652.50
Check	08/08/2024	11895 Accounts Payable	CARMELISA LOPEZ		108.26
	Invoice	Date	Description	Check Sort Code	Amount
	050324-053024EXP	08/05/2024	BART FARE ULI HOUSING PRJCT & MILEAGE SYMPOSIUM MORGAN HILL		108.26
Check	08/08/2024	11896 Accounts Payable	LPC SERVICES, INC.		3,093.00
	Invoice	Date	Description	Check Sort Code	Amount
	75457	07/19/2024	PEST SERVICES - SILLIMAN #102710 7/19/24		1,020.00
	75492	07/19/2024	PEST SERVICES - COMMUNITY CENTER #102700 7/19/24		95.00
	75491	07/19/2024	PEST SERVICES - FIRE STATION #2 #102709 7/19/24		220.00
	75607	07/19/2024	PEST SERVICES - CITY HALL #102699 7/19/24		175.00
	75560	07/19/2024	PEST SERVICES - CITY HALL #102699 7/19/24		267.00
	75456	07/19/2024	PEST SERVICES - FIRE STATION #1 102707 7/19/24		275.00
	75468	07/19/2024	PEST SERVICES - VIOLA BLYTHE #102704 7/19/24		260.00
	75332	07/19/2024	PEST SERVICES - SERVICE CENTER #102702 7/19/24		185.00
	75455	07/19/2024	PEST SERVICES - FIRE STATION #3 102701 7/19/24		240.00
	75610	07/19/2024	PEST SERVICES - LIBRARY #116524 7/19/24		175.00
	75608	07/19/2024	PEST SERVICES - PD #104419 7/19/24		181.00
Check	08/08/2024	11897 Accounts Payable	MNS ENGINEERS INC		8,759.46
	Invoice	Date	Description	Check Sort Code	Amount
	86886	07/11/2024	ON-CALL PUBLIC WORKS CONSTRUCTION INSPECTION SERVICES 06/24		5,129.46
	86631	06/24/2024	CONSTRUCTION MANAGEMENT SERVICES 05/24		2,877.50
	87014	07/25/2024	CONSTRUCTION MANAGEMENT SERVICES 06/24		752.50
Check	08/08/2024	11898 Accounts Payable	NAVIA BENEFIT SOLUTIONS CLIENT PAY		200.00
	Invoice	Date	Description	Check Sort Code	Amount
	10874020	07/29/2024	FY 24/25 COBRA ADMINISTRATION FEES - 07/01/24 TO 07/31/24		200.00
Check	08/08/2024	11899 Accounts Payable	PACIFIC GAS & ELECTRIC		45,577.37
	Invoice	Date	Description	Check Sort Code	Amount

	7460-071624	07/16/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/25-06/25/24			3,624.74
	3926-070524	07/05/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/30-06/27/24			125.95
	1859-070524	07/05/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/30-06/27/24			1,239.45
	0870-070524	07/05/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/31-06/28/24			99.32
	9045-070324	07/03/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/25-06/25/24			298.16
	0552-070324	07/03/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/29-06/26/24			115.88
	2305-070224	07/02/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/28-06/25/24			128.94
	7786-062024	06/20/2024	ANNUAL ELECTRICITY FOR STREET/TRAFFIC LIGHTS 05/16-06/13/24			39,944.93
Check	08/08/2024	11900 Accounts Payable	PENINSULA UNIFORMS & EQUIPMENT, INC.			914.72
	Invoice	Date	Description		Check Sort Code	Amount
	209003	07/10/2024	RAIN HOOD AND PINS			914.72
Check	08/08/2024	11901 Accounts Payable	PETERSON			1,598.67
	Invoice	Date	Description		Check Sort Code	Amount
	PC001860207	06/05/2024	FLEET COOLANT			141.74
	PC001860206	06/05/2024	FLEET FILTER AND FENDER			1,456.93
Check	08/08/2024	11902 Accounts Payable	SHEENA RAJ			2,713.63
	Invoice	Date	Description		Check Sort Code	Amount
	0714-07192024EXP	07/25/2024	ESRI USER CONFERENCE EXPENSE REIMBURSEMENT 07/14-07/19/24			2,713.63
Check	08/08/2024	11903 Accounts Payable	ROADSAFE TRAFFIC SYSTEMS, INC.			1,577.08
	Invoice	Date	Description		Check Sort Code	Amount
	210730	07/15/2024	SAFETY VESTS			1,577.08
Check	08/08/2024	11904 Accounts Payable	SFPUC			9,077.88
	Invoice	Date	Description		Check Sort Code	Amount
	66508	06/28/2024	SFPUC RENT WATER AC#3642 07/01/24			1,008.98
	65483	06/21/2024	SFPUC RENT WATER AC#2866 07/01/24			3,025.47
	66767	07/23/2024	SFPUC RENT WATER AC#3642 08/01/24			1,008.98
	66803	07/23/2024	SFPUC RENT WATER AC#2866 08/01/24			3,025.47
	65456	06/21/2024	SFPUC RENT WATER AC#3642 06/21/24			1,008.98
Check	08/08/2024	11905 Accounts Payable	LINCOLN AQUATICS			5,185.96
	Invoice	Date	Description		Check Sort Code	Amount
	SL048094	06/28/2024	POOL LANE REELS			1,976.27
	D8862857	06/25/2024	BEACH WHEELCHAIR FOR DISABLED CUSTOMERS			3,209.69
Check	08/08/2024	11906 Accounts Payable	DOMESTIC TRUCK DRIVING SCHOOL			3,200.00
	Invoice	Date	Description		Check Sort Code	Amount
	601	07/31/2024	CLASS A DRIVING SCHOOL-RYAN PEREZ			3,200.00
Check	08/08/2024	11907 Accounts Payable	SITEONE LANDSCAPE SUPPLY, LLC			258.35
	Invoice	Date	Description		Check Sort Code	Amount
	143476467-001	07/01/2024	CONCRETE-POINT OF SALE			258.35
Check	08/08/2024	11908 Accounts Payable	CENTERVILLE LOCKSMITH			24.75
	Invoice	Date	Description		Check Sort Code	Amount
	339539	07/22/2024	KEYS			9.80

	339618	07/26/2024	KEYS			14.95
Check	08/08/2024	11909 Accounts Payable	STANDARD INSURANCE COMPANY			1,908.00
	Invoice	Date	Description		Check Sort Code	Amount
	BILLING-MAY 24	05/01/2024	EMPLOYEE LIFE INSURANCE AND AD&D COVERAGE PREMIUMS-5/1-5/31/24			948.00
	BILLING-JUN 24	06/01/2024	EMPLOYEE LIFE INSURANCE AND AD&D COVERAGE PREMIUMS-6/1-6/30/24			960.00
Check	08/08/2024	11910 Accounts Payable	STAPLES			619.10
	Invoice	Date	Description		Check Sort Code	Amount
	7001383683	07/15/2024	OFFICE SUPPLIES 06/27-07/11/24			619.10
Check	08/08/2024	11911 Accounts Payable	LEHR			1,368.69
	Invoice	Date	Description		Check Sort Code	Amount
	SI106382	07/18/2024	FLEET GROTE SURFACE MOUNT			1,368.69
Check	08/08/2024	11912 Accounts Payable	SYSERCO, INC			9,519.75
	Invoice	Date	Description		Check Sort Code	Amount
	14814	07/01/2024	ENERGY MANAGEMENT SERVICES 07/24-09/24			9,519.75
Check	08/08/2024	11913 Accounts Payable	THE KPA GROUP			12,000.00
	Invoice	Date	Description		Check Sort Code	Amount
	009	05/31/2024	ON-CALL ARCHITECTURAL SERVICES TASK ORDER 1C 05/01-05/31/24			12,000.00
Check	08/08/2024	11914 Accounts Payable	ULINE			1,184.50
	Invoice	Date	Description		Check Sort Code	Amount
	176325523	04/01/2024	EQUIPMENT AND SUPPLIES FOR DANCE REVUE			1,184.50
Check	08/08/2024	11915 Accounts Payable	UTILITY TELECOM GROUP, LLC			44,603.85
	Invoice	Date	Description		Check Sort Code	Amount
	126425-ETFJULY24	08/08/2024	ETF FIRE STATION #27 - ACCOUNT 126425			2,870.75
	126431-ETFJULY24	08/08/2024	ETF CTR/CHILDCARE - ACCOUNT 126431			1,777.26
	126432-ETFJULY24	08/08/2024	ETF FIRE STATION #29 - ACCOUNT 126432			2,657.83
	134765-ETFJULY24	08/08/2024	ETF POLICE GROUND FLOOR - ACCOUNT 134765			21,359.44
	128732-ETFJULY24	08/08/2024	ETF PD EVIDENCE - ACCOUNT 128732			277.82
	126428-ETFJULY24	08/08/2024	ETF SENIOR CENTER - ACCOUNT 126428			1,400.48
	126427-ETFJULY24	08/08/2024	ETF ALT EOC FIRE STATION #28 - ACCOUNT 126427			4,387.25
	126430-ETFJULY24	08/08/2024	ETF SERVICE CENTER/CORP YARD - ACCOUNT 126430			3,911.18
	126426-ETFJULY24	08/08/2024	ETF SILLIMAN CENTER - ACCOUNT 126426			5,961.84
Check	08/08/2024	11916 Accounts Payable	BSN SPORTS LLC			4,163.28
	Invoice	Date	Description		Check Sort Code	Amount
	925788591	05/22/2024	PORTABLE BASKETBALL STANDS			4,163.28
Check	08/08/2024	11917 Accounts Payable	VERDE DESIGN INC			3,295.00
	Invoice	Date	Description		Check Sort Code	Amount
	6-2313800	05/14/2024	LAKESHORE PARK - FEASIBILITY STUDY 03/26-04/25/24			822.50
	7-2313800	06/30/2024	LAKESHORE PARK - FEASIBILITY STUDY 05/26-06/30/24			822.50
	1-2320900	12/12/2023	NEWARK MEL NUNES PARK - ADDITIONAL FIELD NETTING 10/26-11/25/23			1,650.00
Check	08/08/2024	11918 Accounts Payable	VERIZON WIRELESS			34,297.98
	Invoice	Date	Description		Check Sort Code	Amount

	9966903049	06/18/2024	WIRELESS SERVICE 05/19-06/18/24			15,009.77
	9969333972	07/18/2024	WIRELESS SERVICE 06/19-07/18/24			19,288.21
Check	08/08/2024	11919 Accounts Payable	VISTA UNIVERSAL INC			191.00
	Invoice	Date	Description		Check Sort Code	Amount
	T146406	05/13/2024	SILLIMAN LIGHT REPLACEMENT 5/13/24			191.00
Check	08/08/2024	11920 Accounts Payable	VSS INTERNATIONAL, INC.			155,444.55
	Invoice	Date	Description		Check Sort Code	Amount
	20023410	06/20/2024	FY22-23 RUBBERIZED CAPE SEAL AND SLURRY SEAL PRGM,PRJ 1301 05/24			141,501.84
	11111111	06/20/2024	FY22-23 RUBBERIZED CAPE SEAL AND SLURRY SEAL PRGM,PRJ 1301 06/24			13,942.71
Check	08/08/2024	11921 Accounts Payable	CHANDRASHEKAR , SIVARAMAKRISHNA			337.00
	Invoice	Date	Description		Check Sort Code	Amount
	717128	07/02/2024	CUSTOMER REFUND INCOMPLETE CC REFUND TRANSACTION BACK TO CARD			337.00
Check	08/08/2024	11922 Accounts Payable	GARG , NITIN			50.00
	Invoice	Date	Description		Check Sort Code	Amount
	713797	07/24/2024	CUSTOMER REFUND INCOMPLETE CC TRANSACTION BACK TO CARD			50.00
Check	08/08/2024	11923 Accounts Payable	JAGTAP , ANURADHA			137.00
	Invoice	Date	Description		Check Sort Code	Amount
	717125	07/24/2024	CUSTOMER REFUND INCOMPLETE CC REFUND TO CARD FOR CANCELLED CLASS			137.00
Check	08/08/2024	11924 Accounts Payable	NORTHERN CALIFORNIA LEGAL SUPPORT SERVICES, INC			275.00
	Invoice	Date	Description		Check Sort Code	Amount
	091123-FEJARANG	07/23/2024	CIVIL SUBPOENA REFUND - CASE #HG21104387 / CONTROL #6022735			275.00
EFT	08/08/2024	1135 Accounts Payable	GOV CONNECTION (ACH)	211070175 / 1310873272		21,166.89
	Invoice	Date	Description		Check Sort Code	Amount
	75436210	06/25/2024	REPLACEMENT COMPUTERS - APPROVED #2024-19 FY24			11,996.79
	75445767	06/27/2024	REPLACEMENT DESKTOP COMPUTERS #2024-16 FY24			9,170.10
EFT	08/08/2024	1136 Accounts Payable	LEADSONLINE LLC	111000614 / 865536111		5,299.00
	Invoice	Date	Description		Check Sort Code	Amount
	411400	04/15/2024	CELLHAWK SUBSCRIPTION FY24/25			5,299.00
EFT	08/08/2024	1137 Accounts Payable	REDWOOD PUBLIC LAW, LLP	121000358 / 325192270245		14,539.70
	Invoice	Date	Description		Check Sort Code	Amount
	11012	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			4,841.60
	11014	07/03/2024	LEGAL SERVICES THROUGH JUNE 30, 2024			9,698.10

AP ZBA ACCOUNTS PAYABLE Totals: Transactions: 71 $1,763,524.49

Checks:	68	$1,722,518.90
EFTs:	3	$41,005.59

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/08/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/08/2024	11856	Miscellaneous Billing Refund	GREENHORN PROPERTIES LLC		1,000.00
AP ZBA ACCOUNTS PAYABLE Totals:				Transactions: 1		$1,000.00

Checks:	1	$1,000.00

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/15/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/15/2024	11925	Accounts Payable	AIR EXCHANGE INC		1,357.42
	Invoice		Date	Description	Check Sort Code	Amount
	91610305		08/11/2023	FIRE STATION 28 PLYMOVENT 8/12/23		327.81
	91610409		08/28/2023	FIRE STATION 29 PLYMOVENT 8/28/23		411.76
	91610253		08/07/2023	FIRE STATION 29 PLYMOVENT 8/8/23		617.85
Check	08/15/2024	11926	Accounts Payable	ALLIED AUTO STORES INC		676.49
	Invoice		Date	Description	Check Sort Code	Amount
	JUL' 24		07/31/2024	ALLIED-FLEET SUPPLIES 07/11-07/30/24		676.49
Check	08/15/2024	11927	Accounts Payable	AQUATIC HARVESTING		12,499.00
	Invoice		Date	Description	Check Sort Code	Amount
	20612		07/25/2024	LAKE HARVESTER AND CREW 6/26/24		12,499.00
Check	08/15/2024	11928	Accounts Payable	ASCAP		441.00
	Invoice		Date	Description	Check Sort Code	Amount
	2024FEES		06/20/2024	MUSIC LICENSE FEE - 07/01/24 - 06/30/25		441.00
Check	08/15/2024	11929	Accounts Payable	BAY CENTRAL PRINTING		85.88
	Invoice		Date	Description	Check Sort Code	Amount
	199518		07/22/2024	BUSINESS CARD PRINT - DEPUTY ECON. DEV. DIRECTOR TSUI 7/24		85.88
Check	08/15/2024	11930	Accounts Payable	BAY ISLAND OFFICIALS ASSOCIATION		460.00
	Invoice		Date	Description	Check Sort Code	Amount
	JULY312024		07/31/2024	OFFICIATING FOR BASKETBALL AND VOLLEYBALL GAMES FOR JULY '24		460.00
Check	08/15/2024	11931	Accounts Payable	CALIFORNIA BUILDING STANDARDS COMMISSION		707.40
	Invoice		Date	Description	Check Sort Code	Amount
	0401-063024		08/06/2024	BUILDING STANDARDS FEES - APR TO JUN 2024		707.40
Check	08/15/2024	11932	Accounts Payable	STATE DISBURSEMENT UNIT		1.38
	Invoice		Date	Description	Check Sort Code	Amount
	PPE 8.3.24		08/14/2024	GARNISH - CASE 200000002128365 - 7/21/24-8/3/24		1.38
Check	08/15/2024	11933	Accounts Payable	CALIFORNIA DEPARTMENT OF CONSERVATION		1,777.86
	Invoice		Date	Description	Check Sort Code	Amount

	0401-063024	08/06/2024	STRONG MOTION FEES - APR TO JUN 2024		1,777.86
Check	08/15/2024	11934 Accounts Payable	CENTRAL VALLEY TOXICOLOGY, INC.		463.00
	Invoice	Date	Description	Check Sort Code	Amount
	336298	07/25/2024	LAB TESTS 07/25/2024		70.00
	335966	07/10/2024	LAB TESTS 07/10/2024		131.00
	335965	07/10/2024	LAB TESTS 07/10/2024		44.00
	335964	07/10/2024	LAB TESTS 07/10/2024		44.00
	335963	07/10/2024	LAB TESTS 07/10/2024		174.00
Check	08/15/2024	11935 Accounts Payable	CINTAS CORP		931.36
	Invoice	Date	Description	Check Sort Code	Amount
	1904984738	07/09/2024	CITYWIDE POLOS		104.44
	1904983867	07/09/2024	CITYWIDE POLOS		808.82
	4194337412	05/31/2024	SENIOR CENTER TOWELS AND MATS		18.10
Check	08/15/2024	11936 Accounts Payable	CITY OF UNION CITY		14,916.75
	Invoice	Date	Description	Check Sort Code	Amount
	2024-0534	06/01/2024	50% OF EMERGENCY SERVICES COORDINATOR SALARY JUNE & FY24 TRUE UP		14,916.75
Check	08/15/2024	11937 Accounts Payable	ALAMEDA COUNTY LAFCO		3,313.00
	Invoice	Date	Description	Check Sort Code	Amount
	FY24/25	06/04/2024	LAFCO COST FY24/25		3,313.00
Check	08/15/2024	11938 Accounts Payable	EAST BAY EDA		7,005.00
	Invoice	Date	Description	Check Sort Code	Amount
	FY24029	07/23/2024	EAST BAY EDA ANNUAL MEMBERSHIP FY 24-25		7,005.00
Check	08/15/2024	11939 Accounts Payable	CPOA		226.00
	Invoice	Date	Description	Check Sort Code	Amount
	43880	08/12/2024	OFFICER INVOLVED SHOOTING TRAINING FOR M.WARREN 10/29-10/30/24		226.00
Check	08/15/2024	11940 Accounts Payable	DAILY JOURNAL CORPORATION		1,382.50
	Invoice	Date	Description	Check Sort Code	Amount
	B3811762	05/21/2024	LEGAL ADVERTISING - PROJECT 1344 05/14 - 05/21/24		460.00
	B3817611	06/11/2024	LEGAL ADVERTISING - PROJECT 1345 06/04 - 06/11/24		405.00
	B3830168	07/09/2024	NOTICE OF ELECTION PUBLISHED 07/09/24		38.75
	B3830303	06/04/2024	PERSONNEL SYSTEM ORDINANCE PUBLISHED 07/09/24		56.25
	B3830373	07/09/2024	NOTICE OF HEARING L&L PH NEW DATE 07/09/24		236.25
	B3837424	07/31/2024	PC PH NOTICE - LEPAKSHI HOMES 07/30/24		87.50
	B3837435	07/31/2024	PC PH NOTICE - FEAR OVERLOAD HAUNTED HOUSE 07/30/24		98.75
Check	08/15/2024	11941 Accounts Payable	FREMONT MAZDA		46,639.95
	Invoice	Date	Description	Check Sort Code	Amount
	7856	07/26/2024	MAZDA CX-90 CIP1388		46,639.95
Check	08/15/2024	11942 Accounts Payable	EAST BAY LAWN MOWER		198.14
	Invoice	Date	Description	Check Sort Code	Amount
	39198	08/12/2024	FLEET SMALL EQUIPMENT REPAIR APS #25-63 08/12/24		198.14
Check	08/15/2024	11943 Accounts Payable	EMPLOYMENT DEVELOPMENT DEPT		5,723.00

	Invoice	Date	Description	Check Sort Code	Amount
	L2105472848	07/30/2024	UNEMPLOYMENT INSURANCE -04/01/24-06/30/24		5,723.00
Check	08/15/2024	11944 Accounts Payable	ENVIRONMENTAL LOGISTICS		1,411.25
	Invoice	Date	Description	Check Sort Code	Amount
	124601	07/02/2024	HAZARDOUS WASTE REMOVAL 06/07/24		1,411.25
Check	08/15/2024	11945 Accounts Payable	EYEP-SOLUTIONS INC		10,000.00
	Invoice	Date	Description	Check Sort Code	Amount
	24-474	07/15/2024	REMOTE/ONSITE TECH SERVICES FY25		10,000.00
Check	08/15/2024	11946 Accounts Payable	FRANK BONETTI PLUMBING INC		1,451.25
	Invoice	Date	Description	Check Sort Code	Amount
	49343	07/25/2024	SILLIMAN MENS RESTROOM SERVICES 7/16/24		1,451.25
Check	08/15/2024	11947 Accounts Payable	KARL FREDSTROM		130.63
	Invoice	Date	Description	Check Sort Code	Amount
	072824EXP	08/12/2024	LUNCH HOLY GHOST PARADE 07/28/24		130.63
Check	08/15/2024	11948 Accounts Payable	FREMONT FORD		268.94
	Invoice	Date	Description	Check Sort Code	Amount
	438405	08/06/2024	FLEET SERVICE VEH 1702 APS #25-51 8/1/24		268.94
Check	08/15/2024	11949 Accounts Payable	FRONTIER BUILDING PRODUCTS PACIFIC, INC		3,898.00
	Invoice	Date	Description	Check Sort Code	Amount
	5-14-996553	05/14/2024	FIRE STATION 28 REPLACEMENT TROLLY OPERATOR 5/14/24		3,898.00
Check	08/15/2024	11950 Accounts Payable	GACHINA LANDSCAPE MANAGEMENT, INC.		4,560.00
	Invoice	Date	Description	Check Sort Code	Amount
	E 219542	06/28/2024	SILLIMAN AND TRACKS WEED ABATEMENT 6/28/24		4,560.00
Check	08/15/2024	11951 Accounts Payable	GRAINGER		57.65
	Invoice	Date	Description	Check Sort Code	Amount
	9195107231	07/25/2024	SOAP DISPENSER		57.65
Check	08/15/2024	11952 Accounts Payable	HARRINGTON INDUSTRIAL PLASTICS LLC		197.98
	Invoice	Date	Description	Check Sort Code	Amount
	003U0529	06/03/2024	PVC PIPES-POINT OF SALE		197.98
Check	08/15/2024	11953 Accounts Payable	HDL COREN & CONE		4,081.25
	Invoice	Date	Description	Check Sort Code	Amount
	SIN041319	07/24/2024	PROPERTY TAX CONSULTING - JUL - SEPT 2024		4,081.25
Check	08/15/2024	11954 Accounts Payable	HDL SOFTWARE, LLC		686.40
	Invoice	Date	Description	Check Sort Code	Amount
	SIN041597	07/25/2024	UUT EXEMPTION ACCOUNTS PROCESSED - FEB 2024 - JUNE 2024		686.40
Check	08/15/2024	11955 Accounts Payable	TERRI HERNANDEZ		925.78
	Invoice	Date	Description	Check Sort Code	Amount
	0728-073024EXP	08/12/2024	REDFLEX TRAINING ARIZONA 07/28-07/30/24		925.78

Check	08/15/2024	11956	Accounts Payable	HILLYARD		4,876.43
	Invoice		Date	Description	Check Sort Code	Amount
	605504921		06/10/2024	JANITORIAL SUPPLIES - TOWELS/TISSUE/LINER		4,876.43
Check	08/15/2024	11957	Accounts Payable	HIROSHI ICHIMURA		4,004.40
	Invoice		Date	Description	Check Sort Code	Amount
	0504-062924		07/09/2024	KENDO CLASSES 5/4-6/29/24		4,004.40
Check	08/15/2024	11958	Accounts Payable	NICHOLAS ICASIANO		32.18
	Invoice		Date	Description	Check Sort Code	Amount
	060424EXP		06/04/2024	HEAT ILLNESS PREVENTION FLUIDS 06/04/24		32.18
Check	08/15/2024	11959	Accounts Payable	ICS INTEGRATED COMMUNICATION SYSTEMS		78,178.00
	Invoice		Date	Description	Check Sort Code	Amount
	2413284-1		06/30/2024	YARD LARGE MTG RM LOGITECH RALLY SYSTEM APPROVAL 2024-14 6/30/24		19,837.00
	2413323-1		06/30/2024	SILLIMAN CENTER AV UPGRADES APPROVAL 2024-17 06/30/24		49,866.00
	2413322-1		07/26/2024	SILLIMAN CENTER - CAFE AV REPLACEMENTS APPROVAL 2024-17 06/30/24		8,475.00
Check	08/15/2024	11960	Accounts Payable	INDUSTRIAL PLUMBING SUPPLY, LLC.		82.54
	Invoice		Date	Description	Check Sort Code	Amount
	115681		05/31/2024	STALL DOOR LATCH		82.54
Check	08/15/2024	11961	Accounts Payable	JOINT VENTURE SILICON VALLEY		13,656.00
	Invoice		Date	Description	Check Sort Code	Amount
	118241EDANEWARK		07/23/2024	JVSV FY 24-25 SVEDA DUES & ULI ASSOC. MEMBERSHIP		3,100.00
	118275COSNEWARK		07/23/2024	JVSV FY 24-25 CO-STAR REAL ESTATE SERVICE		7,056.00
	118210NETNEWARK		07/23/2024	JVSV FY 24-25 PUBLIC INVESTMENT		3,500.00
Check	08/15/2024	11962	Accounts Payable	KIM TURNER		999.00
	Invoice		Date	Description	Check Sort Code	Amount
	INVOICE-5129		07/10/2024	COMMUNICATIONS TRAINING CERT - CHELSEA SIMON		999.00
Check	08/15/2024	11963	Accounts Payable	NAPA AUTO PARTS		768.50
	Invoice		Date	Description	Check Sort Code	Amount
	JUL' 24		07/31/2024	NAPA-FLEET SUPPLIES JULY 2024		768.50
Check	08/15/2024	11964	Accounts Payable	LAWCX		366,902.00
	Invoice		Date	Description	Check Sort Code	Amount
	LAWCX-0018-2025		07/02/2024	FY24/25 EXCESS WORKERS' COMPENSATION PREMIUM		366,902.00
Check	08/15/2024	11965	Accounts Payable	LIEBERT CASSIDY WHITMORE		5,355.00
	Invoice		Date	Description	Check Sort Code	Amount
	270390		08/08/2024	EMPLOYMENT RELATIONS CONSORTIUM MEMBERSHIP 07/01/24-06/30/25		5,355.00
Check	08/15/2024	11966	Accounts Payable	MAD SCIENCE OF THE BAY AREA		5,283.60
	Invoice		Date	Description	Check Sort Code	Amount
	0624-062824		07/09/2024	MAD SCIENCE SPY ACADEMY 06/24-06/28/24		5,283.60
Check	08/15/2024	11967	Accounts Payable	KSB SKATEBOARD CO		2,538.00
	Invoice		Date	Description	Check Sort Code	Amount

	0603-060724	07/09/2024	KSB SKATEBOARD LESSONS SESSION DATES 06/03-06/07/24			2,538.00
Check	08/15/2024	11968 Accounts Payable	STEPH MUFSON CREATIONS LLC DBA THE PARADE GUYS			7,500.00
	Invoice	Date	Description		Check Sort Code	Amount
	2216	08/06/2024	RENT, DESIGN, CNSTRCTN FOR NEWARK DAYS FLOAT 2024 FY25			7,500.00
Check	08/15/2024	11969 Accounts Payable	NETFILE, INC.			4,900.00
	Invoice	Date	Description		Check Sort Code	Amount
	9482	06/19/2024	ANNUAL SUBSCRIPTION 7/1/24-6/30/25			4,900.00
Check	08/15/2024	11970 Accounts Payable	NHA ADVISORS, LLC			437.50
	Invoice	Date	Description		Check Sort Code	Amount
	01413	07/22/2024	FINANCIAL CONSULTING - PENSION EDUCATION 06/01-06/30/24			437.50
Check	08/15/2024	11971 Accounts Payable	KIDZ LOVE SOCCER			5,175.60
	Invoice	Date	Description		Check Sort Code	Amount
	0614-071224	08/07/2024	KIDZ LOVE SOCCER CLASSES 6/14-7/12/24			5,175.60
Check	08/15/2024	11972 Accounts Payable	POOLED LIABILITY ASSURANCE NETWORK JPA			3,620.83
	Invoice	Date	Description		Check Sort Code	Amount
	PLAN-0100	07/10/2024	GENERAL LIABILITY CLAIMS FY23/24 -JUNE 2024 CLAIMS			3,620.83
Check	08/15/2024	11973 Accounts Payable	JAMES SCANLIN			34.80
	Invoice	Date	Description		Check Sort Code	Amount
	061424EXP	08/06/2024	EXPENSE REIMBURSEMENT - COUNTY FAIR EXHIBIT 06/14/24			34.80
Check	08/15/2024	11974 Accounts Payable	YORK RISK SERVICE GROUP, INC. A SEDGWICK COMPANY			3,669.08
	Invoice	Date	Description		Check Sort Code	Amount
	400000196146	07/02/2024	WORKERS COMPENSATION ADMIN FEES - 07/01/24-07/31/24			3,669.08
Check	08/15/2024	11975 Accounts Payable	SEDGWICK			2,920.00
	Invoice	Date	Description		Check Sort Code	Amount
	BRS-0020647	07/25/2024	REMOTE RISK CONTROL-JUNE 24			2,920.00
Check	08/15/2024	11976 Accounts Payable	SHUTE, MIHALY & WEINBERGER LLP			115.00
	Invoice	Date	Description		Check Sort Code	Amount
	287146	07/18/2024	LEGAL SERVICES - SANCTUARY WEST - SVCS THRU 06/30/24			115.00
Check	08/15/2024	11977 Accounts Payable	THE LEW EDWARDS GROUP			6,500.00
	Invoice	Date	Description		Check Sort Code	Amount
	24-05	06/30/2024	PROFESSIONAL SERVICES RENDERED JUNE 2024			6,500.00
Check	08/15/2024	11978 Accounts Payable	THE UNITED STATES CONFERENCE OF MAYORS			3,838.00
	Invoice	Date	Description		Check Sort Code	Amount
	INV004111	01/01/2024	MEMBERSHIP DUES FOR CY2024			3,838.00
Check	08/15/2024	11979 Accounts Payable	UNITED STATES POSTMASTER			15,000.00
	Invoice	Date	Description		Check Sort Code	Amount
	BULK 2025-1	08/01/2024	BULK MAILING POSTAGE DEPOSIT FOR FY24/25			15,000.00

Check	08/15/2024	11980	Accounts Payable	WEISSMAN'S DESIGNS FOR DANCE		1,249.02
	Invoice		Date	Description	Check Sort Code	Amount
	244318735		03/28/2024	COSTUMES FOR DANCE REVUE		1,249.02
Check	08/15/2024	11981	Accounts Payable	ORION SECURITY		2,599.20
	Invoice		Date	Description	Check Sort Code	Amount
	127734		08/03/2024	UNARMED, UNIFORMED SECURITY GUARD 7/29/24 - 8/1/24		1,155.20
	127804		08/10/2024	UNARMED, UNIFORMED SECURITY GUARD 8/5/24 - 8/9/24		1,444.00
Check	08/15/2024	11982	Accounts Payable	ABOVE ALL PLUMBING INC		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2023-3168		08/07/2024	ENCP2023-0008 RFND		1,000.00
Check	08/15/2024	11983	Accounts Payable	BERMILLO , ROMEO		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2025-00000044		08/09/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
Check	08/15/2024	11984	Accounts Payable	CORAL , JUAN		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2025-00000120		08/09/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
Check	08/15/2024	11985	Accounts Payable	SINGH , ANTARPAL		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2023-4490		08/07/2024	ENCP2023-0051 RFND		1,000.00
Check	08/15/2024	11986	Accounts Payable	STREAMLINE PLUMBING & DRAIN CO.		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2023-4279		08/07/2024	ENCP2023-0059 RFND		1,000.00
Check	08/15/2024	11987	Accounts Payable	WESTERN REGIONAL PUERTO RICAN COUNCIL		1,000.00
	Invoice		Date	Description	Check Sort Code	Amount
	2024-00003534		07/23/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
EFT	08/15/2024	1147	Accounts Payable	SEDGWICK CLAIMS MANAGEMENT SERVICES, INC.	121000248 / 4942808510	15,085.97
	Invoice		Date	Description	Check Sort Code	Amount
	SF-8510-01513799		07/01/2024	WORKERS COMPENSATION CLAIMS -06/03/24-06/30/24		15,085.97
EFT	08/15/2024	1148	Accounts Payable	SA COMPANY	267084131 / 738813075	1,632.26
	Invoice		Date	Description	Check Sort Code	Amount
	8253656B-0002		07/17/2024	SUN HATS		1,632.26

AP ZBA ACCOUNTS PAYABLE Totals:		Transactions: 65	$689,427.17
Checks:	63	$672,708.94	
EFTs:	2	$16,718.23	

LIVE Newark CA LIVE

Payment Batch Register

Bank Account: AP - ZBA ACCOUNTS PAYABLE

Batch Date: 08/22/2024

Type	Date	Number	Source	Payee Name	EFT Bank/Account	Transaction Amount
Bank Account: AP - ZBA ACCOUNTS PAYABLE						
Check	08/22/2024	11988	Accounts Payable	ABC FIRE PROTECTION, INC.		4,201.94
	Invoice		Date	Description	Check Sort Code	Amount
	67051		07/31/2024	FIRE EXTINGUISHER SERVICE AND MAINTENANCE 7/31/24		4,201.94
Check	08/22/2024	11989	Accounts Payable	PRINTS CHARLES REPROGRAPHICS		251.25
	Invoice		Date	Description	Check Sort Code	Amount
	116600		07/22/2024	HOLY GHOST PARADE SIGNAGE 7/22/24		251.25
Check	08/22/2024	11990	Accounts Payable	ALAMEDA COUNTY TRANSPORTATION COMMISSION		27,445.00
	Invoice		Date	Description	Check Sort Code	Amount
	1258		07/01/2024	FY24-25 MEMBER AGENCY FEES		27,445.00
Check	08/22/2024	11991	Accounts Payable	ALAMEDA COUNTY WATER DISTRICT		7,123.85
	Invoice		Date	Description	Check Sort Code	Amount
	0701-073124		08/01/2024	ACWD HYDRANT 07/01-07/31/24		3,561.94
	0601-063024		08/01/2024	ACWD HYDRANT 06/01-06/30/24		3,561.91
Check	08/22/2024	11992	Accounts Payable	ALL CITY MANAGEMENT SERVICES, INC.		1,596.54
	Invoice		Date	Description	Check Sort Code	Amount
	94226		06/12/2024	SCHOOL CROSSING GUARD SVCS 05/26-06/08/24		1,596.54
Check	08/22/2024	11993	Accounts Payable	BAY CENTRAL PRINTING		177.20
	Invoice		Date	Description	Check Sort Code	Amount
	199585		07/29/2024	BUSINESS CARD IMPRINTING-A.HECKMAN		177.20
Check	08/22/2024	11994	Accounts Payable	BLAISDELL'S BUSINESS PRODUCTS		199.09
	Invoice		Date	Description	Check Sort Code	Amount
	JULY'24		08/01/2024	OFFICE SUPPLIES 07/01-07/25/24 (APS #25-25)		199.09
Check	08/22/2024	11995	Accounts Payable	CAL-WEST LIGHTING & SIGNAL MAINTENANCE		12,310.22
	Invoice		Date	Description	Check Sort Code	Amount
	240617		06/30/2024	FY23-24 STREET LIGHT MAINTENANCE 06/24		3,376.79
	240615		06/30/2024	FY23-24 STREET LIGHT MAINTENANCE 06/24		6,699.59
	240616		06/30/2024	FY23-24 STREET LIGHT MAINTENANCE 06/24		2,233.84
Check	08/22/2024	11996	Accounts Payable	DIANA CANGCO		5,300.00
	Invoice		Date	Description	Check Sort Code	Amount

	EDUREIMB-FY24	06/30/2024	CERTIFICATE IN CONSTRUCTION MANAGEMENT FY24			5,300.00
Check	08/22/2024	11997 Accounts Payable	FREMONT CHEVROLET			27.03
	Invoice	Date	Description		Check Sort Code	Amount
	154495	07/19/2024	FLEET COVER 7/19/24			27.03
Check	08/22/2024	11998 Accounts Payable	CINDY K. HULL & ASSOCIATES - FORENSIC CONSULTING			650.00
	Invoice	Date	Description		Check Sort Code	Amount
	153	07/15/2024	LATENT PRINT ANALYSIS JULY 2024			650.00
Check	08/22/2024	11999 Accounts Payable	PETTY CASH CUSTODIAN - BRETT OEVERNDIEK			24.00
	Invoice	Date	Description		Check Sort Code	Amount
	110923PW	11/09/2023	PETTY CASH REPL V#68			24.00
Check	08/22/2024	12000 Accounts Payable	CONSOR NORTH AMERICA, INC.			116,927.75
	Invoice	Date	Description		Check Sort Code	Amount
	N16N131CA.00-45	06/26/2024	CENTRAL AVE OVERPASS DESIGN SERVICES, PRJ 1014 03/01-05/31/24			116,927.75
Check	08/22/2024	12001 Accounts Payable	COUNTY OF ALAMEDA			1,600.00
	Invoice	Date	Description		Check Sort Code	Amount
	JULY '24	08/04/2024	CITATION PROCESSING FEES - JULY '24			1,600.00
Check	08/22/2024	12002 Accounts Payable	CSW I ST2			60,464.68
	Invoice	Date	Description		Check Sort Code	Amount
	2407134	07/31/2024	DESIGN SERVICES FOR OLD TOWN STREETSCAPE IMPROVEMENTS 06/24			60,464.68
Check	08/22/2024	12003 Accounts Payable	JULIE DEL CATANCIO			248.64
	Invoice	Date	Description		Check Sort Code	Amount
	030624-030724EXP	07/18/2024	PLANNING COMMISSIONERS CONFERENCE HOTEL ACCOMM. 03/06-03/07/24			248.64
Check	08/22/2024	12004 Accounts Payable	DEPARTMENT OF TRANSPORTATION			1,796.44
	Invoice	Date	Description		Check Sort Code	Amount
	SL241106	07/15/2024	SHARED COSTS FOR TRAFFIC SIGNALS (APR 2024-JUNE 2024)			1,796.44
Check	08/22/2024	12005 Accounts Payable	DESTINY SOFTWARE, INC.			6,500.00
	Invoice	Date	Description		Check Sort Code	Amount
	5216	08/01/2024	AGENDAQUICK SOFTWARE 09/01/24-08/31/25			6,500.00
Check	08/22/2024	12006 Accounts Payable	EAST BAY LAWN MOWER			680.66
	Invoice	Date	Description		Check Sort Code	Amount
	41996	08/12/2024	FLEET TRIM HEAD 8/12/24			207.23
	39184	08/01/2024	FLEET SMALL EQUIPMENT REPAIR 08/01/24			452.73
	39191	08/01/2024	6PK MIX 8/1/24			20.70
Check	08/22/2024	12007 Accounts Payable	FEDEX			16.50
	Invoice	Date	Description		Check Sort Code	Amount
	8-585-34247	08/09/2024	PACKAGE DELIVERY 7/24/24			16.50
Check	08/22/2024	12008 Accounts Payable	FEHR & PEERS			3,664.50

	Invoice	Date	Description	Check Sort Code	Amount
	177391	07/16/2024	TASK ORDER #10 - ACTIVE TRANSPORTATION PLAN 06/01-06/28/24		3,664.50
Check	08/22/2024	12009 Accounts Payable	GACHINA LANDSCAPE MANAGEMENT, INC.		28,635.19
	Invoice	Date	Description	Check Sort Code	Amount
	E 220666B	08/01/2024	MAINTENANCE CONTRACT-PARKS, CH, PD, LIB AUGUST 2024		19,139.36
	E 220666A	08/01/2024	MAINTENANCE CONTRACT AUGUST 2024		9,495.83
Check	08/22/2024	12010 Accounts Payable	GHD INC.		3,500.51
	Invoice	Date	Description	Check Sort Code	Amount
	380-0052843	06/20/2024	ON-CALL ENGINEERING & TRANSPORTATION PLANNING 06/24		65.25
	380-0051148	05/20/2024	TASK ORDER NO. 5 - MOWRY AVE AT CHERRY STREET (THROUGH 05/18/24)		3,435.26
Check	08/22/2024	12011 Accounts Payable	GREENSFELDER COMMERCIAL REAL ESTATE LLC		1,656.24
	Invoice	Date	Description	Check Sort Code	Amount
	NEWARK 24-06	06/30/2024	URBAN PLANN, REAL ESTATE ADVISORY & IMPLEMENTATION 4/2-6/29/24		1,656.24
Check	08/22/2024	12012 Accounts Payable	IDN WILCO		1,192.01
	Invoice	Date	Description	Check Sort Code	Amount
	10476330-00	05/02/2024	KEYS AND PADLOCK 5/2/24		126.76
	10476330-02	05/28/2024	LIBRARY AND SILLIMAN IC CYLINDERS 5/28/24		1,065.25
Check	08/22/2024	12013 Accounts Payable	INFO-TECH RESEARCH GROUP INC		49,339.11
	Invoice	Date	Description	Check Sort Code	Amount
	231616	07/29/2024	MEMBERSHIP SUBSCRIPTION 07/29/24 - 07/31/25		49,339.11
Check	08/22/2024	12014 Accounts Payable	SPECTRUM CANINE		1,800.00
	Invoice	Date	Description	Check Sort Code	Amount
	0006169	08/05/2024	K9 TRAINING JULY 2024		900.00
	0006168	08/05/2024	K9 TRAINING JUNE 2024		900.00
Check	08/22/2024	12015 Accounts Payable	ITERIS, INC.		21,010.00
	Invoice	Date	Description	Check Sort Code	Amount
	169789	05/22/2024	TRAFFIC SIGNAL INTERCONNECT PROJECT #1361 04/01-04/30/24		13,800.00
	168481	04/08/2024	TRAFFIC SIGNAL INTERCONNECT PROJECT #1361 03/01-03/31/24		7,210.00
Check	08/22/2024	12016 Accounts Payable	KBA DOCUMENT SOLUTIONS, LLC		2,797.79
	Invoice	Date	Description	Check Sort Code	Amount
	55Y1464473	06/25/2024	COPIER LEASE YEAR 2 OF 5 - OVERAGES 05/21-06/20/24		2,797.79
Check	08/22/2024	12017 Accounts Payable	KNORR SYSTEMS INTERNATIONAL		878.51
	Invoice	Date	Description	Check Sort Code	Amount
	243707	07/31/2024	CARBON DIOXIDE REFILL		878.51
Check	08/22/2024	12018 Accounts Payable	GOVERNMENT TECHNOLOGY GROUP, LLC		4,573.00
	Invoice	Date	Description	Check Sort Code	Amount
	190	07/15/2024	BROADBAND MASTER PLAN 06/24		4,573.00
Check	08/22/2024	12019 Accounts Payable	LEXISNEXIS RISK SOLUTIONS FL INC		50.00

	Invoice	Date	Description	Check Sort Code	Amount
	1845802-20240731	07/31/2024	INVESTIGATIVE INFO RESEARCH - 7/31/24		50.00
Check	08/22/2024	12020 Accounts Payable	MACLEOD WATTS INC		8,780.00
	Invoice	Date	Description	Check Sort Code	Amount
	072224NEWAR	07/22/2024	ACTUARIAL VALUATION AS OF 06/30/23 (OPEB)		8,780.00
Check	08/22/2024	12021 Accounts Payable	MNS ENGINEERS INC		32,379.00
	Invoice	Date	Description	Check Sort Code	Amount
	86885-R1	07/31/2024	ON-CALL PUBLIC WORKS CONSTRUCTION INSPECTION SERVICES 05-06/24		32,379.00
Check	08/22/2024	12022 Accounts Payable	NICHOLS CONSULTING ENGINEERS, CHTD		46,030.74
	Invoice	Date	Description	Check Sort Code	Amount
	123055501	01/29/2024	TASK ORDER NO. 2 - THORNTON AVE. PAVEMENT REHAB 01/24		19,958.02
	123055503	07/01/2024	TASK ORDER NO. 2 - THORNTON AVE. PAVEMENT REHAB 06/24		17,682.22
	123055502	03/08/2024	TASK ORDER NO. 2 - THORNTON AVE. PAVEMENT REHAB 03/24		8,390.50
Check	08/22/2024	12023 Accounts Payable	PACIFIC GAS & ELECTRIC		100,822.08
	Invoice	Date	Description	Check Sort Code	Amount
	7578-071024	07/10/2024	CITYWIDE ELECTRICAL 06/30/24		100,822.08
Check	08/22/2024	12024 Accounts Payable	PHOENIX GROUP INFORMATION SYSTEMS		1,569.10
	Invoice	Date	Description	Check Sort Code	Amount
	062024101	07/19/2024	PARKING CITATION PROGRAM JUNE 2024		817.25
	072023101	08/18/2023	PARKING CITATION PROGRAM JULY 2023		297.60
	082023101	09/25/2023	PARKING CITATION PROGRAM AUGUST 2023		454.25
Check	08/22/2024	12025 Accounts Payable	PROFORCE LAW ENFORCEMENT		479.55
	Invoice	Date	Description	Check Sort Code	Amount
	554267	07/30/2024	TASER CARTRIDGES 7/30/24		479.55
Check	08/22/2024	12026 Accounts Payable	ROSAS BROTHERS CONSTRUCTION		377,527.89
	Invoice	Date	Description	Check Sort Code	Amount
	1895	07/02/2024	FY23-24 CURB, GUTTER, AND SIDEWALK REPLACEMENT, PRJ 1346 06/24		377,527.89
Check	08/22/2024	12027 Accounts Payable	YORK RISK SERVICE GROUP, INC. A SEDGWICK COMPANY		48.00
	Invoice	Date	Description	Check Sort Code	Amount
	400000199405	07/29/2024	WORKERS' COMPENSATION ADMIN FEES-INTAKE - 06/01-06/30/24		48.00
Check	08/22/2024	12028 Accounts Payable	SNG & ASSOCIATES, INC.		21,520.00
	Invoice	Date	Description	Check Sort Code	Amount
	2024-0619	07/26/2024	ON CALL CIVIL ENGINEERING PLAN REVIEW SERVICES 06/24		21,520.00
Check	08/22/2024	12029 Accounts Payable	STAPLES		610.32
	Invoice	Date	Description	Check Sort Code	Amount
	7001605354	07/31/2024	OFFICE SUPPLIES 07/15-07/29/24 (APS #25-24)		610.32
Check	08/22/2024	12030 Accounts Payable	SURF TO SNOW ENVIRONMENTAL RESOURCE		300.00

	Invoice	Date	Description	Check Sort Code	Amount
	13512	03/31/2024	MUNICIPAL STORMWATER INSPECTION SERVICE (03/01-03/31/24)		300.00
Check	08/22/2024	12031 Accounts Payable	TEMPERATURE TECHNOLOGY INC		3,200.00
	Invoice	Date	Description	Check Sort Code	Amount
	I3292	08/02/2024	HVAC-CITY HALL, LIBRARY AND PD 6/12-6/17/24		3,200.00
Check	08/22/2024	12032 Accounts Payable	THE ED JONES CO INC		150.90
	Invoice	Date	Description	Check Sort Code	Amount
	56637	07/01/2024	TOP NAME RIBBON-KIM, DALE 8/9/24		150.90
Check	08/22/2024	12033 Accounts Payable	UNDERGROUND SERVICE ALERT OF NORTHERN CA & NV		5,703.15
	Invoice	Date	Description	Check Sort Code	Amount
	1221552024	07/22/2024	UNDERGROUND SERVICE ALERTS BILLABLE TICKETS & STATE REG FEE FY25		4,372.29
	122155USB24	07/26/2024	CA STATE REGULATORY FEE (USA ALERTS) FY25		1,330.86
Check	08/22/2024	12034 Accounts Payable	UNION PACIFIC RAILROAD COMPANY		493.53
	Invoice	Date	Description	Check Sort Code	Amount
	90135795	06/11/2024	CENTRAL OVERPASS COLLABORATION COSTS, PROJECT 1014 02/24-05/24		493.53
Check	08/22/2024	12035 Accounts Payable	MICHELLE VILLANUEVA		50.38
	Invoice	Date	Description	Check Sort Code	Amount
	072924EXP	08/19/2024	2024 MAZE LIVE TRAINING 07/29/24		50.38
Check	08/22/2024	12036 Accounts Payable	VSS INTERNATIONAL, INC.		642.43
	Invoice	Date	Description	Check Sort Code	Amount
	20023511	07/23/2024	CHERRY ST. CLASS IV SEPARATED BIKEWAYS, PRJ 1254 02/24-06/30/24		642.43
Check	08/22/2024	12037 Accounts Payable	WEX BANK		1,250.66
	Invoice	Date	Description	Check Sort Code	Amount
	98886176	08/06/2024	CHEVRON CC 08/06/24		1,250.66
Check	08/22/2024	12038 Accounts Payable	EAST BAY CAR CLUB		1,000.00
	Invoice	Date	Description	Check Sort Code	Amount
	2024-00003536	08/14/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
Check	08/22/2024	12039 Accounts Payable	SAINTS & SINNERS		1,000.00
	Invoice	Date	Description	Check Sort Code	Amount
	2025-00000202	08/14/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
Check	08/22/2024	12040 Accounts Payable	UNITED SWISS SOCIETIES OF NORTHERN CALIFORNIA		1,000.00
	Invoice	Date	Description	Check Sort Code	Amount
	2025-00000049	08/14/2024	SPECIAL EVENT PERMIT SECURITY DEPOSIT REFUND		1,000.00
EFT	08/22/2024	1156 Accounts Payable	CLIENTFIRST TECHNOLOGY CONSULTING	122037760 / 001064667052	3,777.50
	Invoice	Date	Description	Check Sort Code	Amount
	16911	06/30/2024	TELECOM IMPLEMENTATION 06/01-06/30/24		3,777.50
EFT	08/22/2024	1157 Accounts Payable	GOV CONNECTION (ACH)	211070175 / 1310873272	3,802.00

	Invoice	Date	Description	Check Sort Code	Amount
	75557100	08/02/2024	ADOBE SIGN 5 MONTHS THRU 12/24		3,802.00
EFT	08/22/2024	1158 Accounts Payable	QUADIENT FINANCE USA, INC.	011900254 / 385015844484	2,043.19
	Invoice	Date	Description	Check Sort Code	Amount
	4857 - JUL '24	07/16/2024	POSTAGE - JUL '24		2,043.19

AP ZBA ACCOUNTS PAYABLE Totals: Transactions: 56 $980,818.07

Checks:	53	$971,195.38
EFTs:	3	$9,622.69

STAFF REPORT

Item D. 2.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Sheila Harrington, City Clerk
SUBJECT	Approval of minutes: June 27 (special and regular meetings), July 8, July 25, and August 5.

Attachments

June 27 Special Meeting
June 27 Regular Meeting
July 8 Special Meeting
July 25 Regular Meeting
August 5 Special Meeting

CITY OF NEWARK
CITY COUNCIL
City Administration Building, City Council Chambers

37101 Newark Boulevard, Newark, CA 94560 | (510) 578-4266 | E-mail: city.clerk@newark.org

Minutes
Special Meeting
Thursday, June 27, 2024
6:30 P.M

A. ROLL CALL

Mayor Hannon called the meeting to order at 6:30 p.m. Vice Mayor Freitas and Council Members Jorgens were present. Council Member Collazo was noted absent.

B. CITY MANAGER REPORTS

1. Provide direction regarding how to fill City Council Member vacancy

City Attorney Kokotaylo announced that Council Member Bucci resigned from the City Council effective on June 27, 2024, at 5 p.m. He gave a presentation outlining the City Council options to leave the seat vacant and call an election to fill the unexpired term or to appoint an individual to fill the vacated seat until the election. Presentation on file with City Clerk.

Jason Miguel stated his support for leaving the seat vacant until the election. He stated the appointee would have an unfair advantage if they ran for the seat.

Mayor Hannon stated that at least 3 council members were needed for a quorum and known future absences made that difficult. He recommended the application process, interviews on July 8, and appointment to fill the seat until the November election results were certified for the remainder of the term.

Council Member Jorgens stated that he struggled with an appointment at this late date. If they appoint someone who runs for the seat, incumbents typically do not lose elections in Newark. He thought it would benefit the potential candidate.

Vice Mayor Freitas stated his preference to interview candidates on July 8th.

Council Member Jorgens stated they had a quorum for this meeting and anticipated that they would continue to have quorums.

Mayor Hannon moved, Vice Mayor Freitas seconded to hold an application process from June 28 to July 7 at 5 pm., interview qualified candidates on July 8 and make a decision that night to fill the vacancy until the November election results were certified. The motion passed, 3 AYES, 1 ABSENT.

Council Member Jorgens explained that he voted affirmatively to allow this process to move forward, but that 3 affirmative votes would be needed to appoint someone.

City Manager Benoun requested that the Council Members submit any potential questions for the interviews to staff.

C. ADJOURNMENT

Mayor Hannon adjourned the meeting at 7:05 p.m.

Minutes

Thursday, June 27, 2024
7:00 P.M.

A. ROLL CALL

Mayor Hannon called the meeting to order at 7:15 p.m. Vice Mayor Freitas and Council Member Jorgens were present.

City Attorney Kokotaylo announced that Council Member Collazo requested to participate in the meeting remotely based on an emergency medical need. Per Assembly Bill 2449 the City Council would need to vote on whether to allow Council Member Collazo to participate in the meeting.

Vice Mayor Freitas moved, Council Member Jorgens seconded to allow Council Member Collazo to participate in the meeting via Zoom. The motion passed, 3 AYES.

Council Member Collazo joined the meeting via Zoom.

Mayor Hannon announced that because Council Member Collazo was attending the meeting via Zoom, the webinar would be activated to allow the public to participate via Zoom.

Mayor Hannon announced that Council Member Bucci resigned from the City Council and that the City Council voted at a special meeting to open an application period from June 28 to July 7 for the vacancy until the election. The Council will meet on July 8th to consider the applications.

Mayor Hannon announced that he would consider item F.1 first to allow Council Member Collazo to participate in the decision-making process.

F.1 Consider for adoption a resolution calling an election to be held on November 5, 2024, for voter consideration of a ballot measure seeking voter authorization to amend Municipal Code Chapter 3.16 to increase the City's existing transient occupancy (hotel) tax; establishing policies and procedures in connection with such an election; requesting the Board of Supervisors of the County of Alameda to consolidate the general municipal election with the general election to be held on November 5, 2024; requesting certain services of the Registrar of Voters of Alameda County with respect to the consolidated general municipal election; and providing for submittal of ballot arguments and rebuttals and authorizing the filing of an impartial analysis
Resolution No. 11650

City Manager Benoun stated that the City has a 10% Transient Occupancy (Hotel) Tax, that provides funding for services. He stated that funding was needed for the replacement of fire stations, maintenance needs, and to implement the various Master Plans. If a 4% hotel tax increase was approved by the voters, it would increase the tax by $2.1 million annually. He reviewed the steps to place this proposed increase on the November 5, 2024 election. Presentation on file with the City Clerk.

No one from the public requested to speak
Council Member Collazo stated this tax would only apply to visitors using Newark hotels.

City Manager Benoun stated that due to technical issues, the clean version of the proposed ordinance was included in the packet and the proposed redlines ordinance should be included in the motion.

Council Member Jorgens moved, Council Member Collazo seconded to Call an Election To Be Held On November 5, 2024, For Voter Consideration Of A Ballot Measure Seeking Voter Authorization To Amend Municipal Code Chapter 3.16 To Increase The City's Existing Transient Occupancy (Hotel) Tax; Establishing Policies And Procedures In Connection With Such An Election; Requesting The Board Of Supervisors Of The County Of Alameda To Consolidate The General Municipal Election With The General Election To Be Held On November 5, 2024; Requesting Certain Services Of The Registrar Of Voters Of Alameda County With Respect To The Consolidated General Municipal Election; And Providing For Submittal Of Ballot Arguments And Rebuttals And Authorizing The Filing Of An Impartial Analysis, with the redlined version of the ordinance. The motion passed,

4 AYES.

Council Member Collazo thanked everyone for their well wishes. She wished everyone a safe and happy Fourth of July. Shop Newark.

Council Member Collazo exited the meeting at 7:42 pm.

B. PRESENTATIONS

1. Introduction of employee(s)

Mayor Hannon introduced: Police Officer Lor, Administrative Support Specialist II Coulthard, Building Maintenance Mechanic I Thomas, General Laborer Manukia, Landscape and Parks Maintenance I Ruiz, and General Laborer Ayala.

C. PUBLIC COMMENT

Fario Martinez requested that the City Council ban all flavored tobacco products, and make tobacco products more expensive to discourage use.

City Manager Benoun stated that staff will have a recommendation for the City Council in September.

D. CONSENT CALENDAR

City Manager Benoun requested the removal of D. 15 from the agenda due to a lack of quorum to consider the item.

Vice Mayor Freitas moved, Council Member Jorgens seconded, to approve Consent Calendar items D.1 to D.14 and D.16, that the resolutions be numbered consecutively, and that reading of the titles suffice for adoption. The motion passed, 3 AYES, 1 ABSENT.

1. Approval of Audited Demands

2. Approval of June 13, 2024, minutes

3. Adopt a resolution calling and giving notice of the holding of a General Municipal Election on Tuesday, November 5, 2024, for the election of certain officers of the City of Newark
Resolution No. 11651

4. Adopt a resolution amending the Personnel Rules and Regulations and introduction by title only of an ordinance amending Newark Municipal Code Chapter 2.28, "Personnel System"
Resolution No. 11652
Ordinance Introduced

5. Adopt a resolution authorizing the City Manager to execute Contractual Service Agreements for Geotechnical Engineering and Peer Review Services, Materials Testing Services, Traffic Signal and Street Light Maintenance Services, and Traffic Engineering and Transportation Planning Services with the following consultants: Cotton, Shires and Associates, Inc.; Geocon Consultants, Inc.; Construction Testing Services, Inc.; Cal-West Lighting and Signal Maintenance, Inc.; St. Francis Electric, LLC; Fehr and Peers; GHD, Inc.; and Kimley-Horn and Associates, Inc.
Resolution No. 11653
Contract Nos. 24052-24060

6. Adopt a resolution awarding a contract for the Base Bid and Additive Alternate Bids No. 1, No. 2, No. 3, and No. 4 to G. Bortolotto & Company, Inc. for 2024 Asphalt Concrete Street Overlay Program, Project 1344
Resolution No. 11654
Contract No. 24064

7. Adopt a resolution authorizing the City Manager to execute an agreement with Alameda County for participation in the Alameda County Urban County for Fiscal Year 2024-2025
Resolution No. 11655
Contract No. 24065

8. Adopt a resolution authorizing the City Manager to execute a Contractual Services Agreement with West Coast Arborists, Inc. for ongoing maintenance services of City trees located in parks, streets and City-owned properties
Resolution No. 11656
Contract No. 24066

9. Adoption of a resolution authorizing the City Manager to execute Amendment No. 1 to the Contractual Services Agreement with Universal Building Services and Supply Company for janitorial services for City buildings
Resolution No. 11657
Contract No. 22067

10. Adopt a resolution authorizing the City Manager to execute the first amendment to the agreement with Alameda County for participation in the Alameda County Urban County
Resolution No. 11658
Contract No. 23040

11. Adopt a resolution authorizing the City Attorney to annually execute a Certification and Mutual Indemnification Agreement with the County of Alameda
Resolution No. 11659
Contract No. 24067

12. Adopt a resolution declaring that there is no need for the Successor Agency to the Redevelopment Agency to function in the community and requesting that the Alameda County Oversight Board approve the dissolution of the Successor Agency
Resolution No. 11660

13. Year-End Budget Review and Adoption of a Resolution Amending the 2022-2024 Biennial Budget and Capital Improvement Plan for Fiscal Year 2024
Resolution No. 11661

14. Adopt a resolution approving the Road Repair and Accountability Act of 2017 (Senate Bill 1) Fiscal Year 2025 Project List
Resolution No. 11662

15. Pulled from agenda Adopt a resolution authorizing the City Manager to execute a Cooperative Agreement with the Alameda County Water District for water main design and construction associated with the Old Town Streetscape Improvements, Project 1258

16. Adopt a resolution authorizing the City Manager to execute a Contractual Services Agreement with Cumming Management Group, Inc., for Construction Management Services for Newark Resource Center, Project 1360
Resolution No. 11663
Contract No. 24068

E. PUBLIC HEARINGS

1. Public hearing to consider adoption of a resolution approving amendments to the Master Fee Schedule for Fiscal Year 2025
Resolution No. 11664

Senior Planner Lopez stated that the City's development impact fees adjustments are on an annual basis based on the Engineering News Record Construction Cost Index for San Francisco. Based on the May 2024 Index, the development impact fees must be decreased by 1.1%.
Mayor Hannon opened the public hearing at 8:04 p.m.

No one requested to speak.

Mayor Hannon closed the public hearing at 8:05 p.m.

Moved by Council Member Jorgens, seconded by Mayor Hannon, to adopt the resolution. The motion passed 3 AYES, 1 ABSENT.

2. Adopt a resolution approving the 2024-2026 Biennial Budget and Capital Improvement Plan
Resolution No. 11665

Finance Director Lee gave the staff report recommending approval. She highlighted specific edits that were made to the Biennial Budget document at the request of the City Council. The presentation is on file with the City Clerk.

Mayor Hannon opened the public hearing at 8:15 p.m.

No one requested to speak.

Mayor Hannon closed the public hearing at 8:16 p.m.

Moved by Council Member Jorgens, seconded by Vice Mayor Freitas to adopt the resolution. The motion passed 3 AYES, 1 ABSENT

Mayor Hannon called for a recess at 8:17 p.m. The meeting resumed at 8:25 p.m.

3. Public Hearing and Introduce By Title Only an Ordinance Approving and Re Adopting a Military Equipment Use Policy as Stated in Chapter 2.50, “Military Equipment Use Policy” to Title 2. "Administration and Personnel" of the Newark Municipal Code in compliance with Assembly Bill 481
Ordinance Introduced

Police Lieutenant Simon stated that Assembly Bill 481 requires the Police Department to provide a Military Equipment annual report and for the City Council to vote on the renewal annually. He gave the annual presentation.
Presentation on file with City Clerk

Mayor Hannon opened the public hearing at 8:31 p.m.

No one requested to speak.

Mayor Hannon closed the public hearing at 8:32 p.m.

Mayor Hannon moved, Council Member Jorgens seconded to introduce the Ordinance. The motion passed, 3 AYES, 1 ABSENT

F. OTHER BUSINESS

1. Consider for adoption a resolution calling an election to be held on November 5, 2024, for voter consideration of a ballot measure seeking voter authorization to amend Municipal Code Chapter 3.16 to increase the City’s existing transient occupancy (hotel) tax; establishing policies and procedures in connection with such an election; requesting the Board of Supervisors of the County of Alameda to consolidate the general municipal election with the general election to be held on November 5, 2024; requesting certain services of the Registrar of Voters of Alameda County with respect to the consolidated general municipal election; and providing for submittal of ballot arguments and rebuttals and authorizing the filing of an impartial analysis

Considered out of order earlier in the agenda.

2. Presentation of final designs for Citywide Parks Signage Program, Project 1272

Junior Engineer Reyes shared the revised citywide parks signage design based on the City Council's comments at the previous meeting with the placement of the city logo, the enlarged font for "City of Newark", and the incorporation date of the park. She also shared the consultants revised design with the city logo in Blue in the concrete base. Presentation on file with the City Clerk

The City Council discussed the revised designs.

In response to Vice Mayor Freitas, Dickson Kaiser, GNU Group stated that with proper care, the sign color should be durable.

Jason Miguel asked if the City considered using local artists to create designs that would deter graffiti.

Mayor Hannon stated that the City Council was seeking uniformity in the park signs.

Mayor Hannon moved, Council Member Jorgens seconded to approve the consultants recommended design. The motion passed, 3 AYES, 1 ABSENT.

In response to City Council requests, City Manager Benoun stated the placement of the signs, the proposed text for the history of the parks, and park names could be considered in the Fall.

G. CITY COUNCIL MATTERS

Council Member Jorgens requested public comment on the City's Active Transportation Plan on the city website. He stated this was a sad day with Council Member Bucci's resignation and he thought the City Council was better with him on it.

Vice Mayor Freitas stated that he was happy to see Council Member Collazo on Zoom. The design for the Central Avenue Overpass project update is 90% complete. He complimented the Recreation and Community Services Department for the Juneteenth event. He wished everyone a Safe and Sane Fourth of July.

Mayor Hannon thanked Council Member Bucci for his service to the community.

Mayor Hannon stated that he would adjourn the meeting in memory of Denise Fullerton.

H. CITY MANAGER UPDATES

I. CLOSED SESSION

J. ADJOURNMENT

Mayor Hannon adjourned the meeting, in memory of Denise Fullerton, at 8:59 p.m.

Minutes
Special Meeting
Monday, July 8, 2024
6:00 P.M

A. ROLL CALL

Mayor Hannon called the meeting to order at 6:05 p.m. Vice Mayor Freitas and Council Member Jorgens were present.

1. Vote to allow Council Member Collazo to participate remotely due to emergency circumstances as a result of a physical medical emergency per Assembly Bill 2449

City Attorney Kokotaylo stated that as a result of a medical procedure, Council Member Collazo could not attend in person and was seeking permission to participate remotely.

Moved by Vice Mayor Freitas, seconded by Council Member Jorgens to allow Council Member Collazo to participate remotely. The motion passed, 3 AYES.

Council Member Collazo joined the meeting via Zoom.

Mayor Hannon announced that the public would also be allowed to offer public comment over Zoom for this meeting and shared the meeting id number.

B. CITY MANAGER REPORTS

1. Interview City Council applicants and adopt resolutions making an appointment to fill the City Council vacancy and/or calling and giving notice of the holding of

a special election for the purpose of electing an individual to fill the remaining unexpired term of the former incumbent to be consolidated with the general municipal election on Tuesday, November 5, 2024

Mayor Hannon stated that one of the candidates requested a zoom interview and that he did not support an online interview, the City Council concurred.

The Mayor thanked the candidates for applying.

2.

The following candidates were interviewed:

Ana Apodaca, Phil Bloxom, Daniel Cardenas, Lucia Gutierrez, Eve Little

At 7:28 p.m. Mayor Hannon called for a recess. The meeting resumed at 7:38 p.m.

The interviews resumed with:
Raju Mathew, Jason Miguel, Fatima Shaikh

Mayor Hannon thanked the applicants for their time. He stated that he was looking for a placeholder and not someone who would run for office.

The City Council members each shared their agreement for a placeholder appointee.

Mayor Hannon moved, Vice Mayor Freitas seconded to adopt a resolution appointing Ana Apodaca to fill the vacancy on the City Council (through the certification of the November 5, 2024 election results). The motion passed, 4 AYES.
Resolution No. 11666

Mayor Hannon moved, Council Member Jorgens seconded, to adopt a resolution calling and giving notice of a special election to fill a vacancy on the Newark City Council for the remainder of a four-year term; requesting The Alameda County Board of Supervisors to consolidate the election with the general election to be held November 5, 2024; and requesting services of the Registrar of Voters. The motion passed, 4 AYES.
Resolution No. 11667

Vice Mayor Freitas stated that he would not seek re-election.

Mayor Hannon thanked Vice Mayor Freitas for his 29 years of service.

C. ADJOURNMENT

The meeting adjourned at 8:46 p.m.

CITY OF NEWARK
CITY COUNCIL
City Administration Building, City Council Chambers

37101 Newark Boulevard, Newark, CA 94560 | (510) 578-4266 | E-mail: city.clerk@newark.org

Minutes

Thursday, July 25, 2024
7:00 P.M.

A. ROLL CALL

Mayor Hannon called the meeting to order at 7:05 p.m. Council Members Jorgens and Apodaca were present. Vice Mayor Freitas and Council Member Collazo were noted absent.

B. PRESENTATIONS

1. Ceremonial Oath of Office for Council Member Ana Apodaca

   Alameda County Supervisor Elisa Márquez administered the Oath of Office to Council Member Apodaca and presented her with a Certificate of Appointment.

2. Proclamation for the Portuguese Fraternal Society of America Council No. 16 Holy Ghost Festival

   Mayor Hannon presented the proclamation to John Nunes.

3. Introduction of employee(s)

   Mayor Hannon introduced: Howard Young, Public Works Director, Violetta Berlanga, Police Officer, Matt Reymundo, Public Safety Dispatch Supervisor, Shobna Sharma, Community Engagement Manager, Deepa Iyer, Management Analyst II, James Yonathan, Building Inspector I.
   Mayor Hannon called for a recess at 7:32 p.m. The meeting resumed at 7:38 p.m.

C. PUBLIC COMMENT

Robert Thomas announced the Solid Rock Community Services Annual Health and Back to School Fair to be held on August 3.

Jacinta Arteaga congratulated Council Member Apodaca on her appointment. She thanked Council Member Collazo and Edda Rivera for their work on the Mariachi Festival and hoped there would be continued support.

Mayor Hannon stated that the Mariachi Festival was well attended and would continue in the future.

Mary Bonilla expressed her displeasure with the maintenance of Landscaping and Lighting District No. 11. She requested that the vote be tabled in order to reconsider the budget.

Han Lambruschini and Harita Veereshlingam requested City assistance to discourage drivers from speeding through their neighborhood. City Manager Benoun referred them to staff members in the audience.

D. CONSENT CALENDAR

Council Member Jorgens moved, Council Member Apodaca seconded, to approve Consent Calendar items D.1 to D.12, that the resolutions and ordinances be numbered consecutively, and that reading of the titles suffice for adoption. The motion passed, 3 AYES, 2 ABSENT.

1. Approval of Audited Demands

2. Waive full reading, conduct second reading by title only, and adoption of an ordinance re-adopting Chapter 2.50, “Military Equipment Use Policy”, to the Newark Municipal Code
Ordinance No. 549

3. Waive full reading, conduct second reading by title only, and adoption of an ordinance amending Chapter 2.28 of the Newark Municipal Code "Personnel System"
Ordinance No. 550

4. Adopt a resolution approving a Software-as-a-Service ("SaaS") Agreement with ClearGov for ClearGov Insights Suite, Budget Suite, and Digital Budget Book
Resolution No. 11668
Contract No. 24061

5. Adopt a resolution authorizing the City Manager to execute an amendment to the Microsoft Enterprise Agreement with Dell Marketing, L.P. (Dell) and amending the 2024-2026 Biennial Budget and Capital Improvement Plan
Resolution No. 11669

6. Adopt resolutions: (1) amending the Employee Classification Plan to delete and add multiple classifications; (2) amending the Compensation and Benefit Plan for the Management, Supervisory and Professional Employee Group; (3) amending the City's Salary Schedule in conformance with California Code of Regulations, Title 2, Section 570.5; (4) amending the 2024-2026 Biennial Budget and Capital Improvement Plan; and (5) approving a Side Letter to the Memorandum of Understanding with the Newark Police Association
Resolution No. 11670 - 11671

7. Adopt a resolution approving a Side Letter to the Memorandum of Understanding between the City of Newark and the Newark Association of Miscellaneous Employees
Resolution No. 11672

8. Adopt a resolution establishing the Fiscal Year 2025 Tax Appropriations Limit
Resolution No. 11673

9. Resolution granting permission to Vice Mayor Freitas and Council Member Collazo to be absent from City Council meetings
Resolution No. 11674

10. Adopt a resolution authorizing the City Manager to execute an amended Contractual Equipment and Services Agreement with RJMS Corporation DBA Toyota Material Handling of Northern California for the purchase of a subcompact sweeper

Resolution No. 11675
Contract No. 23077

11. Adopt a resolution accepting the bid and awarding the contract for the Base Bid and Additive Alternate Bid No. 1 to VSS International, Inc. for 2024 Slurry Seal Program, Project No. 1345 (CIPA10006.FY2024); Exempt from CEQA review per CEQA Guidelines Section 15301
Resolution No. 11676
Contract No. 24062

12. Adopt a resolution authorizing the City Manager to execute a Cooperative Agreement with the Alameda County Water District for water main design and construction associated with the Old Town Streetscape Improvements, Project 1258
Resolution No. 11677
Contract No. 24063

E. PUBLIC HEARINGS

1. Hearing to consider property owners' objections and adopt a resolution confirming the Superintendent of Streets' Report concerning weed abatement assessments
Resolution No. 11678

City Manager Benoun gave the staff report recommending approval.

Mayor Hannon opened the public hearing at 7:56 p.m.

No one requested to speak.

Mayor Hannon closed the public hearing at 7:57 p.m.

Moved by Council Member Apodaca, seconded by Council Member Jorgens to adopt the resolution. The motion passed 3 AYES, 2 ABSENT.

2. Public Hearing for Landscaping and Lighting District Nos. 1, 2, 4, 7, 11, 15, 16, 17, 18 and 19 and Adopt a Resolution Confirming Diagrams and Assessments and Levying and Collection of Assessments for Landscaping and Lighting District Nos. 1, 2, 4, 7, 11, 15, 16, 17, 18, 19 for Fiscal 2025 and Order the

Dissolution of Landscaping and Lighting District Nos. 6, 10 and 13
Commencing in Fiscal Year 2025
Resolution No. 11679

City Manager Benoun stated that Landscaping and Lighting District Nos. 2 and 11 were being continued to August 5, 2024, due to a lack of a quorum.

Management Analyst Oeverndiek gave the staff report recommending approval.

Mayor Hannon opened the public hearing at 8:00 p.m.

No one requested to speak.

Mayor Hannon closed the public hearing at 8:01 p.m.

Moved by Council Member Apodaca, seconded by Council Member Jorgens to adopt the resolution with the removal of Landscaping and Lighting District Nos. 2 and 11. The motion passed 3 AYES, 2 ABSENT.

F. OTHER BUSINESS

1. Adopt a resolution approving the Broadband Master Plan
Resolution No. 11680

Chief Information Officer/Information Technology Director Miranda gave the presentation with consultant Jeff Lewis. Presentation on file with City Clerk.

No one requested to speak.

Moved by Council Member Jorgens, seconded by Council Member Apodaca to adopt the resolution. The motion passed 3 AYES, 2 ABSENT.

2. Chief of Police Arguello presentation of the 2023 Newark Police Department Annual Report
Informational Only

Chief of Police Arguello and Police Captain Macias gave the presentation. Presentation on file with City Clerk.

No one requested to speak.

Council Member Jorgens requested that future presentations include the collision calls overlayed on a map, and to include details on the School Resource Officer (SRO) calls for service. He asked when the SRO position would be restored.

Mayor Hannon requested a breakdown of the types of crimes that were not prosecuted by the District Attorney in future presentations.

Chief of Police Arguello stated that he anticipated the SRO would be filled in the fall and would include the requested information in future presentations.

This item was informational only.

G. CITY MANAGER UPDATES

City Manager Benoun stated that Bay Area Community Health will host a health fair at the Alan L. Nagy Library on August 10, 2024. National Night Out would be held on August 6, 2024.

H. CITY COUNCIL MATTERS

Council Member Apodaca stated it was good to be back and thanked staff.

Council Member Jorgens welcomed Council Member Apodaca.

Mayor Hannon welcomed Council Member Apodaca and thanked Supervisor Márquez for her attendance. He provided an update on the Senior Advisory Committee meeting and thanked the Committee Members.

I. CLOSED SESSION

1. Conference with legal counsel - Existing Litigation
Pursuant to California Government Code Section 54956.9(d)(1)
Name of Case: In re National Prescription Opiate Litigation (National opioid litigation involving Kroger)
Case No. 1:17-MD-2804

No one requested to speak.

At 9:35 p.m. the City Council recessed to a closed session.

At 9:36 p.m. the City Council convened in closed session, with the exception of Vice Mayor Freitas and Council Member Collazo.

At 9:45 p.m. the City Council reconvened in open session will all Council Members present, with the exception of Vice Mayor Freitas and Council Member Collazo.

J. ADJOURNMENT

Mayor Hannon adjourned the meeting at 9:45 p.m.

Minutes
Special Meeting
Monday, August 5, 2024
6:00 P.M

A. ROLL CALL

Mayor Hannon called the meeting to order at 6:00 p.m. Vice Mayor Freitas and Council Member Jorgens were present. Council Members Collazo and Apodaca were noted absent.

B. CITY MANAGER REPORTS

1. Continued Public Hearing for Landscaping and Lighting District Nos. 2 and 11 and adopt a Resolution Confirming Diagrams and Assessments and Levying and Collection of Assessments for Landscaping and Lighting District Nos. 2 and 11 for Fiscal Year 2025

Management Analyst Oeverndiek gave the staff report recommending approval.

Mayor Hannon opened the public hearing at 6:04 p.m.

Mary Bonilla stated her concerned about budget and asked if the City Council would revisit the assessment. She highlighted Lake improvement needs.

Ed Espinoza, City Consultant stated that Landscaping and Lighting District No. 11 funded the maintenance of the medians near the Lake but not the Lake itself. The maximum assessment is levied annually and may only be increased with property owner approval.

Mayor Hannon closed the public hearing at 6:10 p.m.

Vice Mayor Freitas moved, Council Member Jorgens seconded to adopt the resolution. 3 AYES, 2 ABSENT.

Mayor Hannon thanked the Police and Fire Departments for their response to a fire on Thornton Avenue.

C. ADJOURNMENT

Mayor Hannon adjourned the meeting at 6:13 p.m.

STAFF REPORT

Item D. 3.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Michael Carmen, Assistant Engineer
SUBJECT	Adopt a resolution accepting work with VSS International, Inc. for FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301

SUMMARY AND RECOMMENDATION

Staff recommends that the City Council, by resolution, accept the work with VSS International, Inc., authorize the filing of a Notice of Completion with the County Recorder of Alameda County, and authorize the release of bonds and retention for Fiscal Year (FY) 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301.

BACKGROUND

Pursuant to Resolution No. 11,529, adopted on June 22, 2023, the City Council awarded a contract to VSS International, Inc. as the low bidder for FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301. FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 included the placement of 79,355 square yards of asphalt rubber cape seal, 310,655 square feet of Type II polymer modified asphalt emulsion slurry seal, and patch paving at various locations throughout the City. The use of 79,355 square yards of asphalt rubber cape seal diverted approximately 5,000 tires from entering local landfills. The streets that received rubberized cape seal include: Alpine Street, Arden Street, Benicia Avenue, Blackwood Drive, Cabernet, Avenue, Castillon Drive, Cinnabar Court, Ebbetts Street, Fair Avenue/Court, Flintwood Drive, Greenpoint Street/Court, Jacaranda Drive/Court, Lakewood Drive/Court, Levi Street, Montcalm Avenue, Plummer Avenue, Quartz Place, Rosewood Drive, San Antonio Street/Way, St. Isabel Avenue, St. Mary Street, and Truckee Court. The streets that received Type II polymer modified asphalt emulsion slurry seal include: Acorn Place, Aleppo Drive, Galletta Drive, Mandarin Avenue, Guava Place, and Newark Boulevard. The scope of the work on Newark Boulevard also included the installation of Class IV separated bikeway and restriping between Thornton Avenue and Central Avenue.

DISCUSSION/ANALYSIS

Staff has reviewed and inspected the entire scope of work which has now been satisfactorily completed in accordance with the approved project plans and specifications and all applicable standards. Pursuant to the State of California Public Contract Code, staff now recommends formal acceptance of the work.

FISCAL IMPACT

On June 22, 2023, the City Council awarded a contract in the amount of $1,716,000 to VSS International, Inc. Staff also recommended including a construction contingency in the amount of $184,000, which brought the total recommended allocation for the project to $1,900,000.

The total expensed amount for the FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 is $1,693,844.74. The project was completed within the original allocated budget using Highway Users Tax Account and grant funds received from the Rubberized Pavement Grant Program administered by the California Department of Resources and Recycling and Recovery (Cal Recycle).

REVIEW AND APPROVAL

Review and Approval –
Prepared by – Michael Carmen, Assistant Engineer
Reviewed by – Diana Cangco, Acting City Engineer
Reviewed by - Howard Young, Public Works Director
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

Resolution FY Rubberized Cap Seal Project 1301

Before & After Pictures

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK ACCEPTING THE WORK WITH VSS INTERNATIONAL, INC. FOR FY 2023 RUBBERIZED CAPE SEAL AND SLURRY SEAL, PROJECT 1301

WHEREAS, the City of Newark entered into a contract with VSS International, Inc., pursuant to Resolution No. 11,529, adopted June 22, 2023, for FY 2023 Rubberized Cape Seal and Slurry Seal, Project 1301, in the City of Newark; and

WHEREAS, VSS International, Inc. has successfully completed the improvements for FY 2023 Rubberized Cape Seal and Slurry Seal, Project 1301, in accordance with plans and specifications for the contract; and

WHEREAS, said work has been completed to the satisfaction of the City Engineer.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Newark hereby accepts the improvements for FY 2023 Rubberized Cape Seal and Slurry Seal, Project.

BE IT FURTHER RESOLVED that the City Council of the City of Newark hereby authorizes the release of bonds guaranteeing completion of the work.

BE IT FURTHER RESOLVED that the City Council of the City of Newark hereby authorizes the filing of a Notice of Completion with the Office of the County Recorder of Alameda County, California.

BE IT FURTHER RESOLVED that the City Council of the City of Newark hereby authorizes the City to issue payment including the release of a final retention payment to VSS International, Inc. for the completion of FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301, pursuant to the agreement with VSS International, Inc.

ATTACHMENT - PROJECT 1301 PHOTOS (BEFORE AND AFTER)



Figure 1: Newark Boulevard at Thornton Avenue (Before)



Figure 2: Newark Boulevard at Thornton Avenue After Patch Paving, Application of Slurry Seal, New Lane Striping, Class IV Separated Bikeway, and High Visibility Ladder Crosswalk



Figure 3: Newark Boulevard in Front of City Hall and Library (Before)



Figure 4: Newark Boulevard in Front of City Hall and Library After Patch Paving, Application of Slurry Seal, New Lane Striping, and Class IV Separated Bikeway



Figure 5: Southwest corner of Newark Boulevard at Civic Terrace Avenue-Class II On-Street Bike Lane (Before)



Figure 6: Newark Boulevard at Civic Terrace Avenue After Installation of New Class IV Separated Bikeway, Bike Lane Symbol With Green Thermoplastic and High Visibility Ladder Crosswalk



Figure 7 Guava Place (before)


Figure 8: Guava Place After Patch Paving and Placement of Slurry Seal



Figure 9: Arden Street (Before)


Figure 10: Arden Street After Patch Paving and Application of Rubberized Cape Seal



Figure 11: Jacaranda Drive (Before)



Figure 12: Jacaranda Drive After Patch Paving, Application of Rubberized Cape Seal, New Striping, New High Visibility Continental Crosswalk



Figure 13: Montcalm Avenue (Before)



Figure 14: Montcalm Avenue After Patch Paving, Application of Rubberized Cape Seal, and New Striping

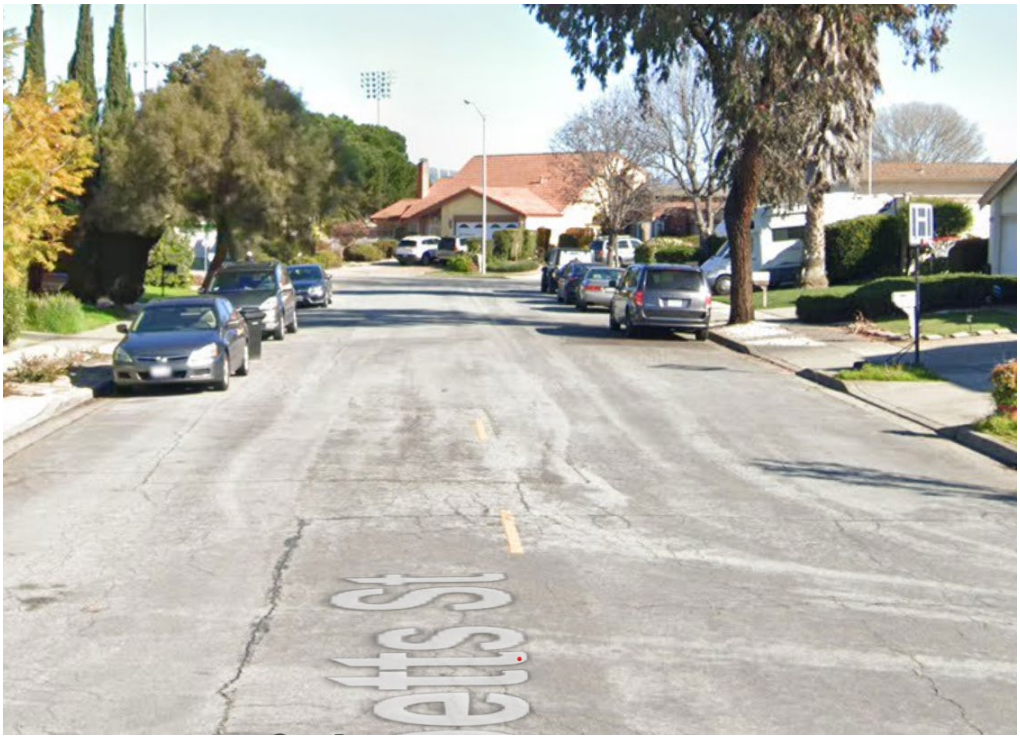


Figure 15: Ebbetts Street (Before)


Figure 16: Ebbetts Street After Patch Paving, Application of Rubberized Cape Seal, and New Striping

STAFF REPORT

Item D. 4.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Diana Cangco, Acting City Engineer
SUBJECT	Adopt a resolution approving proposed Change Order No. 1 for FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 with G. Bortolotto & Company and approving a budget amendment for reappropriation of funds from FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 to FY 2023 Asphalt Concrete Street Overlay Program, Project 1300; exempt from CEQA review per CEQA Guidelines Section 15301

SUMMARY AND RECOMMENDATION

On May 11, 2023, the City Council awarded a contract to G. Bortolotto & Company, Inc. for the Fiscal Year (FY) 2023 Asphalt Concrete Street Overlay Program, Project No. 1300 for $2,052,005 with a $247,995 construction contingency, for a total not to exceed project contract amount of $2,300,000. The project scope includes localized patch paving repair, pavement grinding, placement of new asphalt concrete pavement, traffic signal loop installations, and general restriping on various City streets. To address additional needs for urgent pavement repairs, an additional not to exceed amount of $105,000 is needed to cover the increased quantities related to the street repairs.

Staff recommends that City Council adopt a resolution approving and authorizing the City Manager or his designee to execute proposed Change Order No. 1 for FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 with G. Bortolotto & Company to increase the not to exceed contract amount by $105,000 for a total not to exceed amount of $2,405,000, and approve a budget amendment for reappropriation of funds from FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 to FY 2023 Asphalt Concrete Overlay Program, Project 1300 in an amount equal to the not to exceed amount of the proposed Change Order No. 1.

BACKGROUND

Due to the recent heavy rain events and the aging asphalt concrete pavement, there was a need to urgently address pavement failures on additional streets, resulting in an increase in quantities related to the street repairs. The additional street repairs resulted in an increase of a not to exceed amount of $105,000 above the not to exceed contract amount of $2,300,000. Therefore, an approval for a proposed Change Order No. 1 for

FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 with G. Bortolotto & Company is needed for the additional repairs.

DISCUSSION/ANALYSIS

On May 11, 2023, the City Council awarded a contract to G. Bortolotto & Company for the FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 with a not to exceed contract amount of $2,300,000. The proposed Change Order No. 1, to address additional pavement failures, will be an increase of a not to exceed amount of $105,000, increasing the approved not to exceed contract amount of $2,300,000 to $2,405,000.

On June 22, 2023, the City Council awarded a contract to VSS International, Inc. for the FY 2023 Rubberized Cape Seal and Slurry Seal, Project 1301 with a not to exceed contract amount of $1,900,000. Work is now complete and the total expensed amount for the FY2023 Rubberized Cape Seal and Slurry Seal, Project No. 1301 is $1,693,844.74. The remaining not to exceed contract amount is $206,155.26. The savings from the FY 2023 Rubberized Cape Seal and Slurry Seal, Project No. 1301 can be applied to the proposed Change Order No. 1 of FY 2023 Asphalt Concrete Street Overlay Program, Project No. 1300 by reappropriating the funds from FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 to FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 after the project closeout of FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301.

FISCAL IMPACT

The proposed Change Order No. 1 increases the not to exceed contract amount of $2,300,000 by $105,000 for a new not to exceed contract amount of $2,405,000. The proposed Change Order No. 1 amount for FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 will be reappropriated from previously approved Capital Improvement Funds. The budget allocation will be as follows:

Account	Description	Amount
TO: 201.90.091.910.6221.CIP001300	FY 2022-2023 Asphalt Concrete Street Overlay Program, Project 1300	$105,000
FROM: 201.90.091.910.6221.CIP001301	FY 2022-2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301	$105,000

FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 is complete, and would not be affected by the transfer of funds.

ENVIRONMENTAL/PLANNING COMMISSION REVIEW

The repair and maintenance of existing facilities is categorically exempt under the California Environmental Quality Act (CEQA) section 15301 (Existing Facilities).

REVIEW AND APPROVAL

Prepared by - Diana Cangco, Acting City Engineer
Reviewed by - Howard Young, Public Works Director
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by -David J. Benoun, City Manager

Attachments

1051_Resolution

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK APPROVING PROPOSED CHANGE ORDER NO. 1 FOR FY 2023 ASPHALT CONCRETE STREET OVERLAY PROGRAM, PROJECT 1300 WITH G. BORTOLOTTO & COMPANY AND APPROVING A BUDGET AMENDMENT FOR REAPPRORIATING FUNDS FROM FY 2023 RUBBERIZED CAPE SEAL AND SLURRY SEAL PROGRAM, PROJECT 1301 TO FY 2023 ASPHALT CONCRETE STREET OVERLAY PROGRAM, PROJECT 1300

WHEREAS, the City of Newark entered into a Public Works Contract Agreement with G. Bortolotto & Company for the FY 2023 Asphalt Concrete Street Overlay Program, Project 1300, in an amount not to exceed $2,300,000; and

WHEREAS, additional pavement repairs were necessary, which increased the quantities related to the street repairs, resulting in a proposed Change Order No. 1; and

WHEREAS, said proposed Change Order No. 1 increased the Public Works Contract Agreement amount by a not to exceed amount of $105,000 for a total not to exceed amount of $2,405,000.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Newark does hereby approve the proposed Change Order No. 1 to the Public Works Contract Agreement with G. Bortolotto & Company to increase the not to exceed amount of the Public Works Agreement to $2,405,000.

BE IT FURTHER RESOLVED that the City Council of the City of Newark does hereby authorize the City Manager or his designee to execute the proposed Change Order No. 1.

BE IT FURTHER RESOLVED that the City Council of the City of Newark does hereby authorize the budget amendment for reappropriating funds from FY 2023 Rubberized Cape Seal and Slurry Seal Program, Project 1301 to FY 2023 Asphalt Concrete Street Overlay Program, Project 1300 as follows:

To: 201.90.091.910.6221.CIP001300	FY2022-2023 Asphalt Concrete Street Overlay Program, Project 1300	$105,000
From: 201.90.091.910.6221.CIP001301	FY 2022-2023 Rubberized Cape Seal And Slurry Seal Program, Project 1301	$105,000

STAFF REPORT

Item D. 5.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Sheila Harrington, City Clerk
SUBJECT	Report on administrative actions during August recess

At the November 9, 2023, meeting, the City Council adopted Resolution No. 11577 authorizing the City Manager, or Acting City Manager, to act on certain administrative matters which should not be deferred until the next regularly scheduled meeting of the City Council. The City Council directed the City Manager to report to the City Council after the recess on all such actions.

It is recommended that the City Council, by motion, affirm the City Manager's, or Acting City Manager's, action on the matters listed in Exhibit A.

Attachments

Exhibit A

Date	Subject	Contract Number (if applicable)
08/12/2024	GHA Technologies, Inc., an authorized Wasabi Reseller for Wasabi Reserved Capacity Hot Cloud Storage	C24077
08/13/2024	Mike York Investigations for pre-employment background investigations and reports	C23027
08/13/2024	All City Management Services, Inc. for crossing guard services	C24078
08/20/2024	Acceptance of work with VSS International, Inc., for Cherry Street Class IV Separated Bikeways, Project 1254	C23015
08/27/2024	Acceptance of work with Rosas Brothers Construction for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302	
08/27/2024	Acceptance of work with Rosas Brothers Construction for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346	
08/28/2024	Agreement with Axon Enterprise, Inc. for the purchase of in-car cameras for patrol vehicles with automated license plate readers	C24037
08/30/2024	Acceptance of Crossroads Software and E-Cite Agreement	C24076

City of Newark

Information Technology
37101 Newark Boulevard
Newark, CA 94560

DATE: **August 5, 2024**

TO: **David J. Benoun, City Manager**

VIA: **Lenka Hovorka, Assistant City Manager**

FROM: **Edwin J. Miranda, CIO / IT Director**

SUBJECT: **Recommendation for Contractual Services Agreement with GHA Technologies, Inc. for Wasabi Cloud Storage**

The City has been utilizing Wasabi Cloud Storage on a month-to-month billing plan to safeguard our organization's data for the past two years. This service has proven to be an effective component of our disaster recovery and business continuity plans.

Wasabi Cloud Storage offers substantial cost savings, being up to 80% less expensive than competitors such as Amazon Web Services, Microsoft Azure, and Google Cloud Platform. Additionally, Wasabi does not charge for egress or API requests, making it a financially prudent choice for our data storage needs.

As the City's backup needs continue to grow, data requirements have increased, necessitating the backup of server snapshots to the cloud. Wasabi ensures our data is securely stored in SOC-2 and ISO 27001-certified data centers with server-side encryption. By negotiating a longer-term agreement, the City can increase its storage from 200TB to 400TB of reserved space on the Wasabi cloud, allowing us to safeguard additional critical backups offsite and avoid the need for additional storage hardware.

The immutable nature of our backups ensures they cannot be altered or deleted during a specified period, providing robust protection against ransomware attacks. Furthermore, Wasabi complies with the Department of Justice (DOJ) California Justice Information Services (CJIS) requirements, making it a secure choice for the City.

We solicited three qualified quotes for a five-year term from authorized resellers of Wasabi:

GovConnection, Inc.	$139,440.00
ePlus Technology, Inc.	$145,273.81
GHA Technologies, Inc.	$128,887.20

The lowest responsible bid is from GHA Technologies, Inc. for a five-year term (plus 5 months of free service), paid monthly for 60 months at $2,148.12.

RECOMMENDATION

Staff recommends that the City Manager sign the Contractual Services Agreement with GHA Technologies, Inc., a reseller for Wasabi. Wasabi, which has been safeguarding the City's data for the last two years, is DOJ CJIS compliant. This project is within the budgeted amount.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby authorize the acceptance an agreement with GHA Technologies, Inc., reseller for Wasabi, for enhanced data protection services in an amount
not to exceed $128,887.20 for a five (5) year term subject to prior funding approval by the City Council.

By David J. Benoun, City Manager

8.12.24

Date

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

C24077

CONSULTING SERVICES AGREEMENT BETWEEN THE CITY OF NEWARK AND GHA Technologies, Inc., an Authorized Wasabi Reseller FOR Wasabi Reserved Capacity Hot Cloud Storage

This Agreement for consulting services ("Agreement") is made by and between the City of Newark, a municipal corporation, ("City") and GHA Technologies, Inc., an Authorized HYCU Reseller, a corporation, with offices located at 8998 E. Raintree Drive Scottsdale, AZ 85260 ("Consultant"), (together referred to as the "Parties") as of September 1, 2024 (the "Effective Date").

Section 1. Services. Subject to the terms and conditions set forth in this Agreement, Consultant shall provide to City the services described in the Scope of Work attached as Exhibit A and incorporated herein, at the time and place and in the manner specified therein. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit A, the Agreement shall prevail.

1.1 Term of Services. The term of this Agreement shall begin on the Effective Date and shall end on January 30, 2030, and Consultant shall complete the work described in Exhibit A on or before that date, unless the term of the Agreement is otherwise terminated or extended, as provided for in Section 8. The time provided to Consultant to complete the services required by this Agreement shall not affect the City's right to terminate the Agreement, as referenced in Section 8. Funding for services beyond the current fiscal year will be included in future City budgets but is subject to City Council approval of annual appropriations.

1.2 Standard of Performance. Consultant shall perform all services required pursuant to this Agreement according to the standards observed by a competent practitioner of the profession in which Consultant is engaged and in the geographical area in which Consultant practices its profession.

1.3 Assignment of Personnel. Consultant shall assign only competent personnel to perform services pursuant to this Agreement. In the event that City, in its sole discretion, at any time during the term of this Agreement, desires the reassignment of any such persons, Consultant shall, immediately upon receiving notice from City of such desire of City, reassign such person or persons.

1.4 Time is of the Essence. Time is of the essence. Consultant shall devote such time to the performance of services pursuant to this Agreement as may be reasonably necessary to timely finish the Scope of Work, to meet the standard of performance provided in Section 1.1 and 1.2 above and to satisfy Consultant's obligations hereunder.

Section 2. COMPENSATION. City hereby agrees to pay Consultant a sum not to exceed One Hundred Twenty Eight Thousand Eight Hundred Eighty Seven Dollars and 20 cents, ($128,887.20), notwithstanding any contrary indications that may be contained in Consultant's proposal for services to be performed and reimbursable costs incurred under this Agreement. In the event of a conflict between this Agreement and Consultant's proposal, attached as Exhibit A, regarding the amount of compensation, the Agreement shall prevail. City shall pay Consultant for services rendered pursuant to this Agreement at the time and in the manner set forth herein. The payments specified below shall

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

be the only payments from City to Consultant for services rendered pursuant to this Agreement. Consultant shall submit all invoices to City in the manner specified herein. Except as specifically authorized by City in writing, Consultant shall not bill City for duplicate services performed by more than one person.

Consultant and City acknowledge and agree that compensation paid by City to Consultant under this Agreement is based upon Consultant's estimated costs of providing the services required hereunder, including salaries and benefits of employees and subcontractors of Consultant. Consequently, the parties further agree that compensation hereunder is intended to include the costs of contributions to any pensions and/or annuities to which Consultant and its employees, agents, and subcontractors may be eligible. City therefore has no responsibility for such contributions beyond compensation required under this Agreement.

2.1 Invoices. Consultant shall submit invoices, not more often than once a month during the term of this Agreement, based on the cost for services performed and reimbursable costs incurred prior to the invoice date. Invoices shall contain the following information, unless waived by the Contract Administrator:

- Serial identifications of progress bills; i.e., Progress Bill No. 1 for the first invoice, etc.;
- Project name & number if applicable;
- Purchase Order number to expedite payment;
- The beginning and ending dates of the billing period;
- A task summary containing the original contract amount, the amount of prior billings, the total due this period, the balance available under the Agreement, and the percentage of completion;
- At City's option, for each work item in each task, a copy of the applicable time entries or time sheets shall be submitted showing the name of the person doing the work, the hours spent by each person, a brief description of the work, and each reimbursable expense;
- The total number of hours of work performed under the Agreement by Consultant and each employee, agent, and subcontractor of Consultant performing services hereunder;
- The Consultant's signature;
- Consultant shall give separate notice to the City when the total number of hours worked by Consultant and any individual employee, agent, or subcontractor of Consultant reaches or exceeds 800 hours within a 12-month period.

2.2 Monthly Payment. City shall make monthly payments, based on invoices received, for services satisfactorily performed, and for authorized reimbursable costs incurred. City shall have

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

30 days from the receipt of an invoice that complies with all of the requirements above to pay Consultant.

2.3 Final Payment. City shall pay the last 10% of the total sum due pursuant to this Agreement within 60 days after completion of the services and submittal to City of a final invoice, if all services required have been satisfactorily performed.

2.4 Total Payment. City shall pay for the services to be rendered by Consultant pursuant to this Agreement. City shall not pay any additional sum for any expense or cost whatsoever incurred by Consultant in rendering services pursuant to this Agreement. City shall make no payment for any extra, further, or additional service pursuant to this Agreement.

In no event shall Consultant submit any invoice for an amount in excess of the maximum amount of compensation provided above either for a task or for the entire Agreement, unless the Agreement is modified prior to the submission of such an invoice by a properly executed change order or amendment.

2.5 Hourly Rate/Fees. Unless the services provided are for a lump sum or flat fee, fees for work performed by Consultant on an hourly basis shall not exceed the amounts shown on the compensation cost proposal attached hereto as Exhibit B. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit B, the Agreement shall prevail.

2.6 Reimbursable Expenses. Reimbursable expenses are specified in Exhibit B, attached hereto and incorporated herein. Reimbursable expenses not listed in Exhibit B are not chargeable to City. Reimbursable expenses shall not include a mark-up and are billed as a direct cost. In no event shall expenses be advanced by the City to the Consultant. Reimbursable expenses are included in the total amount of compensation provided under this Agreement that shall not be exceeded.

2.7 Payment of Taxes. Consultant is solely responsible for the payment of employment taxes incurred under this Agreement and any similar federal or state taxes.

2.8 Payment upon Termination. In the event that the City or Consultant terminates this Agreement pursuant to Section 8, the City shall compensate the Consultant for all outstanding costs and reimbursable expenses incurred for work satisfactorily completed as of the date of written notice of termination. Consultant shall maintain adequate logs and timesheets to verify costs incurred to that date.

2.9 Authorization to Perform Services. The Consultant is not authorized to perform any services or incur any costs whatsoever under the terms of this Agreement until receipt of authorization from the Contract Administrator.

2.10. Business License. The Consultant is not authorized to perform services or incur costs whatsoever under the terms of this Agreement until Consultant applies for and has been issued a business license from the City pursuant to Title 5 of the Newark Municipal Code.

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

Section 3. **FACILITIES AND EQUIPMENT.** Except as set forth herein, Consultant shall, at its sole cost and expense, provide all facilities and equipment that may be necessary to perform the services required by this Agreement. City shall make available to Consultant only the facilities and equipment listed in this section, and only under the terms and conditions set forth herein.

City shall furnish physical facilities such as desks, filing cabinets, and conference space, as may be reasonably necessary for Consultant's use while consulting with City employees and reviewing records and the information in possession of the City. The location, quantity, and time of furnishing those facilities shall be in the sole discretion of City. In no event shall City be obligated to furnish any facility that may involve incurring any direct expense, including but not limited to computer, long-distance telephone or other communication charges, vehicles, and reproduction facilities.

Section 4. **INSURANCE REQUIREMENTS.** Before beginning any work under this Agreement, Consultant, at its own cost and expense, unless otherwise specified below, shall procure the types and amounts of insurance listed below against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Consultant and its agents, representatives, employees, and subcontractors. Consistent with the following provisions, Consultant shall provide proof satisfactory to City of such insurance that meets the requirements of this section and under forms of insurance satisfactory in all respects, and that such insurance is in effect prior to beginning work to the City. Consultant shall maintain the insurance policies required by this section throughout the term of this Agreement. The cost of such insurance shall be included in the Consultant's bid. Consultant shall not allow any subcontractor to commence work on any subcontract until Consultant has obtained all insurance required herein for the subcontractor(s) and provided evidence that such insurance is in effect to City. Verification of the required insurance shall be submitted and made part of this Agreement prior to execution.

4.1 **Required Coverage**. Consultant shall maintain all required insurance listed herein for the duration of this Agreement.

COVERAGE	TYPE OF INSURANCE	MINIMUM LIMITS
A	**Commercial General Liability** Premises Liability; Products and Completed Operations; Contractual Liability; Personal Injury and Advertising Liability	$2,000,000 per occurrence; Bodily Injury and Property Damage $4,000,00 in the aggregate; Commercial general coverage shall be at least as broad as Insurance Services Office Commercial General Liability occurrence form CG 0001 (most recent edition) covering comprehensive General Liability on an "occurrence" basis

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

B	**Commercial or Business Automobile Liability** All owned vehicles, hired or leased vehicles, non-owned, borrowed and permissive uses. Personal Automobile Liability is acceptable for individual contractors with no transportation or hauling related activities	$1,000,000 per occurrence; Any Auto; Bodily Injury and Property Damage. Automobile coverage shall be at least as broad as Insurance Services Office Automobile Liability form CA 0001 (most recent edition), Code 1 (any auto). No endorsement shall be attached limiting the coverage.
C	**Workers' Compensation (WC) and Employers Liability (EL)** Required for all contractors with employees	WC: Statutory Limits EL: $100,000 per accident for bodily injury or disease. Consultant may rely on a self-insurance program to meet those requirements, but only if the program of self-insurance complies fully with the provisions of the California Labor Code. The insurer shall waive all rights of subrogation against the City and its officers, officials, employees, and volunteers for loss arising from work performed under this Agreement
D	**Professional Liability/Errors & Omissions** Includes endorsements of contractual liability	$2,000,000 per occurrence $4,000,000 policy aggregate; Any deductible or self-insured retention shall not exceed $150,000 per claim

4.2 **Additional requirements.** Each of the following shall be included in the insurance coverage or added as a certified endorsement to the policy:

a. All required insurance shall be maintained during the entire term of the Agreement with the following exception: Insurance policies and coverage(s) written on a claims-made basis shall be maintained during the entire term of the Agreement and until three (3) years following termination and acceptance of all work provided under the Agreement, with the retroactive date of said insurance (as may be applicable) concurrent with the commencement of activities pursuant to this Agreement

b. All insurance required above with the exception of Professional Liability, Personal Automobile Liability, Workers' Compensation and Employers Liability, shall be endorsed to name as

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

additional insured: City of Newark, its City Council, and all City officers, agents, employees, volunteers and representatives.

c. For any claims related to this Agreement or the work hereunder, the Consultant's insurance covered shall be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

d. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after 30 days' prior written notice has been provided to the City.

e. Certificates of Insurance: Before commencing operations under this Agreement, Consultant shall provide Certificate(s) of Insurance and applicable insurance endorsements, in form and satisfactory to City, evidencing that all required insurance coverage is in effect. The City reserves the rights to require the Consultant to provide complete, certified copies of all required insurance policies.

f. Subcontractors: Consultant shall include all subcontractors as an insured (covered party) under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

g. Claims-made limitations. The following provisions shall apply if the professional liability coverage is written on a claims-made form:

i. The retroactive date of the policy must be shown and must be before the date of the Agreement.

ii. Insurance must be maintained and evidence of insurance must be provided for at least five years after completion of the Agreement or the work, so long as commercially available at reasonable rates.

iii. If coverage is canceled or not renewed and it is not replaced with another claims-made policy form with a retroactive date that precedes the date of this Agreement, Consultant must purchase an extended period coverage for a minimum of three (3) years after completion of work under this Agreement.

iv. A copy of the claim reporting requirements must be submitted to the City for review prior to the commencement of any work under this Agreement.

4.3 All Policies Requirements.

a. Acceptability of insurers. All insurance required by this section is to be placed with insurers with a Bests' rating of no less than A:VII. Insurance shall be maintained through an insurer with a minimum A.M. Best Rating of A- or better, with deductible amounts acceptable to the City. Acceptance of Consultant's insurance by City shall not relieve or decrease the liability of

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

Consultant hereunder. Any deductible or self-insured retention amount or other similar obligation under the policies shall be the sole responsibility of the Consultant.

b. Deductibles and Self-Insured Retentions. Consultant shall disclose to and obtain the written approval of City for the self-insured retentions and deductibles before beginning any of the services or work called for by any term of this Agreement. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, employees, and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

c. Wasting Policies. No policy required by this Section 4 shall include a "wasting" policy limit (i.e. limit that is eroded by the cost of defense).

d. Waiver of Subrogation. Consultant hereby agrees to waive subrogation which any insurer or contractor may require from vendor by virtue of the payment of any loss. Consultant agrees to obtain any endorsements that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the entity for all work performed by the consultant, its employees, agents, and subcontractors.

4.4 Remedies. In addition to any other remedies City may have if Consultant fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option exercise any of the following remedies, which are alternatives to other remedies City may have and are not the exclusive remedy for Consultant's breach:

- Obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under the Agreement;
- Order Consultant to stop work under this Agreement or withhold any payment that becomes due to Consultant hereunder, or both stop work and withhold any payment, until Consultant demonstrates compliance with the requirements hereof; and/or
- Terminate this Agreement.

Section 5. INDEMNIFICATION AND CONSULTANT'S RESPONSIBILITIES.

Consultant shall indemnify, defend with counsel acceptable to City, and hold harmless City and its officers, officials, employees, agents and volunteers from and against any and all liability, loss, damage, claims, expenses, and costs (including without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature arising out of or in connection with Consultant's performance of the Services or its failure to comply with any of its obligations contained in this Agreement, except such Liability caused by the sole negligence or willful misconduct of City.

The Consultant's obligation to defend and indemnify shall not be excused because of the Consultant's inability to evaluate Liability or because the Consultant evaluates Liability and determines that the Consultant is not liable to the claimant. The Consultant must respond within 30 days, to the tender of

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

any claim for defense and indemnity by the City, unless this time has been extended by the City. If the Consultant fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, so much of the money due the Consultant under and by virtue of this Agreement as shall reasonably be considered necessary by the City, may be retained by the City until disposition has been made of the claim or suit for damages, or until the Consultant accepts or rejects the tender of defense, whichever occurs first.

With respect to third party claims against the Consultant, the Consultant waives any and all rights of any type to express or implied indemnity against the Indemnitees.

Notwithstanding the forgoing, to the extent this Agreement is a "construction contract" as defined by California Civil Code Section 2782, as may be amended from time to time, such duties of consultant to indemnify shall not apply when to do so would be prohibited by California Civil Code Section 2782.

In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Section 6. STATUS OF CONSULTANT.

6.1 Independent Contractor. At all times during the term of this Agreement, Consultant shall be an independent contractor and shall not be an employee of City. City shall have the right to control Consultant only insofar as the results of Consultant's services rendered pursuant to this Agreement and assignment of personnel pursuant to Subparagraph 1.3; however, otherwise City shall not have the right to control the means by which Consultant accomplishes services rendered pursuant to this Agreement. Notwithstanding any other City, state, or federal policy, rule, regulation, law, or ordinance to the contrary, Consultant and any of its employees, agents, and subcontractors providing services under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any and all claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in the California Public Employees Retirement System (PERS) as an employee of City and entitlement to any contribution to be paid by City for employer contributions and/or employee contributions for PERS benefits.

6.2 Consultant Not an Agent. Except as City may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.

Section 7. LEGAL REQUIREMENTS.

7.1 Governing Law. The laws of the State of California shall govern this Agreement.

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

7.2 Compliance with Applicable Laws. Consultant and any subcontractors shall comply with all laws applicable to the performance of the work hereunder.

7.3 Other Governmental Regulations. To the extent that this Agreement may be funded by fiscal assistance from another governmental entity, Consultant and any subcontractors shall comply with all applicable rules and regulations to which City is bound by the terms of such fiscal assistance program.

7.4 Licenses and Permits. Consultant represents and warrants to City that Consultant and its employees, agents, and any subcontractors have all licenses, permits, qualifications, and approvals of whatsoever nature that are legally required to practice their respective professions. Consultant represents and warrants to City that Consultant and its employees, agents, any subcontractors shall, at their sole cost and expense, keep in effect at all times during the term of this Agreement any licenses, permits, and approvals that are legally required to practice their respective professions. In addition to the foregoing, Consultant and any subcontractors shall obtain and maintain during the term of this Agreement valid Business Licenses from City.

7.5 Nondiscrimination and Equal Opportunity. Consultant shall not discriminate, on the basis of a person's race, religion, color, national origin, age, physical or mental handicap or disability, medical condition, genetic information, marital status, sex, sexual orientation, gender, or gender identity, against any employee, applicant for employment, subcontractor, bidder for a subcontract, or participant in, recipient of, or applicant for any services or programs provided by Consultant under this Agreement. Consultant shall comply with all applicable federal, state, and local laws, policies, rules, and requirements related to equal opportunity and nondiscrimination in employment, contracting, and the provision of any services that are the subject of this Agreement, including but not limited to the satisfaction of any positive obligations required of Consultant thereby.

Consultant shall include the provisions of this Subsection in any subcontract approved by the Contract Administrator or this Agreement.

Section 8. TERMINATION AND MODIFICATION.

8.1 Termination. City may cancel this Agreement at any time and without cause upon written notification to Consultant. Consultant may cancel this Agreement upon thirty (30) days' written notice to City and shall include in such notice the reasons for cancellation.

In the event of termination, Consultant shall be entitled to compensation for services performed to the effective date of termination; City, however, may condition payment of such compensation upon Consultant delivering to City any or all work product, including, but not limited to documents, photographs, computer software, video and audio tapes, and other materials provided to Consultant or prepared by or for Consultant or the City in connection with this Agreement.

8.2 Extension. City may, in its sole and exclusive discretion, extend the end date of this Agreement beyond that provided for in Subsection 1.1. Any such extension shall require a written amendment to this Agreement, as provided for herein. Consultant understands and agrees that, if City grants such an extension, City shall have no obligation to provide Consultant with compensation

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

beyond the maximum amount provided for in this Agreement. Similarly, unless authorized by the Contract Administrator, City shall have no obligation to reimburse Consultant for any otherwise reimbursable expenses incurred during the extension period.

8.3 Amendments. The Parties may amend this Agreement only by a writing signed by all the Parties.

8.4 Assignment and Subcontracting. City and Consultant recognize and agree that this Agreement contemplates personal performance by Consultant and is based upon a determination of Consultant's unique personal competence, experience, and specialized personal knowledge. Moreover, a substantial inducement to City for entering into this Agreement was and is the professional reputation and competence of Consultant. Consultant may not assign this Agreement or any interest therein without the prior written approval of the Contract Administrator. Consultant shall not subcontract any portion of the performance contemplated and provided for herein, other than to the subcontractors noted in the proposal, without prior written approval of the Contract Administrator.

8.5 Survival. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating liability between City and Consultant shall survive the termination of this Agreement.

8.6 Options upon Breach by Consultant. If Consultant materially breaches any of the terms of this Agreement, City's remedies shall include, but not be limited to, the following:

8.6.1 Immediately terminate the Agreement;

8.6.2 Retain the plans, specifications, drawings, reports, design documents, and any other work product prepared by Consultant pursuant to this Agreement;

8.6.3 Retain a different consultant to complete the work described in Exhibit A not finished by Consultant; or

8.6.4 Charge Consultant the difference between the cost to complete the work described in Exhibit A that is unfinished at the time of breach and the amount that City would have paid Consultant pursuant to Section 2 if Consultant had completed the work.

8.6.5 No remedy mentioned in this Agreement is intended to be exclusive of any other right, power, or remedy, permitted by law. Neither the failure nor the delay on the part of the City to exercise any such rights and remedies shall operate as a waiver thereof, nor shall any single or partial exercise by the City of any such right or remedy preclude any other or further exercise of any such right or remedy.

Section 9. KEEPING AND STATUS OF RECORDS.

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

9.1 Records Created as Part of Consultant's Performance. All reports, data, maps, models, charts, studies, surveys, photographs, memoranda, plans, studies, specifications, records, files, or any other documents or materials, in electronic or any other form, that Consultant prepares or obtains pursuant to this Agreement and that relate to the matters covered hereunder shall be the property of the City. Consultant hereby agrees to deliver those documents to the City upon termination of the Agreement and City may use, reuse or otherwise dispose of the documents without Consultant's permission. It is understood and agreed that the documents and other materials, including but not limited to those described above, prepared pursuant to this Agreement are prepared specifically for the City and are not necessarily suitable for any future or other use. City and Consultant agree that, until final approval by City, all data, plans, specifications, reports and other documents are confidential and will not be released to third parties without prior written consent of both parties.

9.2 Consultant's Books and Records. Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services or expenditures and disbursements charged to the City under this Agreement for a minimum of 3 years, or for any longer period required by law, from the date of final payment to the Consultant to this Agreement. All such records should be maintained in accordance with generally accepted accounting principles and shall be clearly identified and readily accessible.

9.3 Inspection and Audit of Records. Any records or documents that Section 9.2 of this Agreement requires Consultant to maintain shall be made available for inspection, audit, and/or copying at any time during regular business hours, upon oral or written request of the City. Under California Government Code Section 8546.7, if the amount of public funds expended under this Agreement exceeds $10,000.00, the Agreement shall be subject to the examination and audit of the State Auditor, at the request of City or as part of any audit of the City, for a period of 3 years after final payment under the Agreement.

Section 10 MISCELLANEOUS PROVISIONS.

10.1 Attorneys' Fees. If a party to this Agreement brings any action, including an action for declaratory relief, to enforce or interpret the provision of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which that party may be entitled. The court may set such fees in the same action or in a separate action brought for that purpose.

10.2 Venue. In the event that either party brings any action against the other under this Agreement, the parties agree that trial of such action shall be vested exclusively in the state courts of California in the County of Alameda or in the United States District Court for the Northern District of California.

10.3 Severability. If a court of competent jurisdiction finds or rules that any provision of this Agreement is invalid, void, or unenforceable, the provisions of this Agreement not so adjudged shall remain in full force and effect. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

10.4 No Implied Waiver of Breach. The waiver of any breach of a specific provision of this Agreement does not constitute a waiver of any other breach of that term or any other term of this Agreement.

10.5 Successors and Assigns. The provisions of this Agreement shall inure to the benefit of and shall apply to and bind the successors and assigns of the parties.

10.6 Use of Recycled Products. Consultant shall prepare and submit all reports, written studies and other printed material on recycled paper to the extent it is available at equal or less cost than virgin paper.

10.7 Conflict of Interest. Consultant may serve other clients, but none whose activities within the corporate limits of City or whose business, regardless of location, would place Consultant in a "conflict of interest," as that term is defined in the Political Reform Act, codified at California Government Code Section 81000 *et seq.*

Consultant shall not employ any City official in the work performed pursuant to this Agreement. No officer or employee of City shall have any financial interest in this Agreement that would violate California Government Code Sections 1090 *et seq.* Consultant hereby warrants that it is not now, nor has it been in the previous 12 months, an employee, agent, appointee, or official of the City. If Consultant was an employee, agent, appointee, or official of the City in the previous twelve months, Consultant warrants that it did not participate in any manner in the forming of this Agreement. Consultant understands that, if this Agreement is made in violation of Government Code § 1090 *et seq.*, the entire Agreement is void and Consultant will not be entitled to any compensation for services performed pursuant to this Agreement, including reimbursement of expenses, and Consultant will be required to reimburse the City for any sums paid to the Consultant. Consultant understands that, in addition to the foregoing, it may be subject to criminal prosecution for a violation of Government Code § 1090 and, if applicable, will be disqualified from holding public office in the State of California.

10.8 Solicitation. Consultant agrees not to solicit business at any meeting, focus group, or interview related to this Agreement, either orally or through any written materials.

10.9 Contract Administration. This Agreement shall be administered by the City Manager, or his designee, identified as Edwin J. Miranda, CIO ("Contract Administrator"). All correspondence, meeting documentation, invoices and project deliverables shall be directed to or through the Contract Administrator.

10.10 Notices. Any notice, demand, request, consent or approval that either party is required to give the other pursuant to this Agreement, shall be in writing and may be given by either (i) personal service, (ii) delivery by reputable overnight delivery service (e.g. Federal Express) which provides a receipt showing date and time of delivery, (iii) certified United States mail, postage prepaid, return receipt requested, or (iv) by email transmission . Notice shall be effective upon personal delivery or delivery to the addresses specified below, as reflected on the receipt of delivery or return receipt, as applicable.

Any written notice to Consultant shall be sent to:

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

Irfan Mohammad, VP of Sales
GHA Technologies, Inc.
8998 E. Raintree Drive
Scottsdale, AZ 85260
510-270-5313
Irfan.Mohammad@gha-associates.com

All other written notices to City shall be sent to:

Edwin J. Miranda CIO / IT Director City of Newark 37101 Newark Blvd. Newark, CA 94560	with a copy to	Kristopher J. Kokotaylo, City Attorney City of Newark 37101 Newark Blvd. Newark, CA 94560

10.12 Professional Seal. Where applicable in the determination of the contract administrator, the first page of a technical report, first page of design specifications, and each page of construction drawings shall be stamped/sealed and signed by the licensed professional responsible for the report/design preparation. The stamp/seal shall be in a block entitled "Seal and Signature of Registered Professional with report/design responsibility," as in the following example.

_____ Seal and Signature of Registered Professional with report/design responsibility.

10.13 Integration. This Agreement, including the scope of work attached hereto and incorporated herein as Exhibits A and B represent the entire and integrated agreement between City and Consultant and supersedes all prior negotiations, representations, or agreements, either written or oral.

Exhibit A	Scope of Services
Exhibit B	Compensation Schedule

10.14 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be an original and all of which together shall constitute one agreement.

SIGNATURES ON FOLLOWING PAGE

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

The Parties have executed this Agreement as of the Effective Date.

CITY OF NEWARK

DocuSigned by:
075767B2C2304C4...
DAVID J. BENOUN
CITY MANAGER

CONSULTANT

DocuSigned by:
Irfan Mohammad
8694CC71335B4EA...
IRFAN MOHAMMAD
VICE PRESIDENT

ATTEST:

DocuSigned by:
Sheila Harrington
AD90989DBABE45E...
SHEILA HARRINGTON
CITY CLERK

APPROVED AS TO FORM:

Signed by:
kristopher J. kokotaylo
ABDB916180E345C...
KRISTOPHER J. KOKOTAYLO
CITY ATTORNEY

5638310.1
Version 3.2.21

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

EXHIBIT A

SCOPE OF SERVICES

This Scope of Services, Exhibit "A," is hereby incorporated by reference into the Agreement, under Agreement Section 1.

GHA Technologies, Inc., a reseller for Wasabi.

The scope of services is for Wasabi Reserved Capacity Storage Subscription - 400 TB capacity - hosted

Start Date: 09/01/2024
End Date: 01/30/2030

Reference attached quote # 2838683 – rev 1 of 1, dated 8/2/2024.

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

EXHIBIT B

COMPENSATION SCHEDULE

This compensation schedule, Exhibit "B," is hereby incorporated by reference into the Agreement, under Agreement Section 2.

For all services identified in Exhibit "A", Scope of Services, the City agrees to pay, and Consultant agrees to accept as total compensation the following:

Reference attached quote # 2838683 – rev 1 of 1, dated 8/2/2024.

Summary of Fees

Wasabi Reserved capacity Storage, Subscription license (5 years + 5 months free) – 400 TB capacity - hosted

Start Date: 09/01/2024
End Date: 01/30/2030

Non-taxable

Qty.	1
Unit Price	$128,887.20
Total:	**$128,887.20**

Note: $2,148.12 per month for 60 months (includes 1 month free for every year promo or 5 years free months of service for 5-year term).

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

GHA Technologies, Inc.
Dept. #2090
PO Box 29661
Phoenix, Arizona 85038
United States
http://www.gha-associates.com
(P) 480-951-6865
(F) 480-951-6956

Quotation (Open)

Date Aug 02, 2024 10:30 AM PDT
Expiration Date 08/30/2024

Modified Date
Aug 02, 2024 02:37 PM PDT

Quote #
2838683 - rev 1 of 1

Description
Wasabi Reserved Capacity Hot Cloud Storage - 400 TB - 5 Years

SalesRep
Mohammad, Irfan
(P) 510-270-5313
(F) 480-951-6956

Customer Contact
Montez, Angela
(P) 510-578-4421
ANGELA.MONTEZ@newark.org

Customer
City of Newark (CO62745)
Montez, Angela
37101 Newark Blvd
Newark, CA 94560
United States

Bill To
City of Newark
Payable, Accounts
37101 Newark Blvd
Newark, CA 94560
United States

Ship To
City of Newark
Montez, Angela
37101 Newark Blvd
Newark, CA 94560
United States
isd@newark.org

Customer PO:

Terms:
Purchase Order (Net 30 Days)

Ship Via:
Other Electronic

Carrier Account #:

Special Instructions:
1 month free for every year promo will expire on 08/30

	Description	Tax	Qty	Unit Price	Total
1	Wasabi Reserved Capacity Storage Subscription license (5 years) - 400 TB capacity - hosted	No	1	$128,887.08	$128,887.08

Note: estimated $2,148.12 per month for 60 months (+5 months free). or $1,982.88 per month for 65 months prepaid
Note:
1 month free for every year promo : $128,887.20
Wasabi agrees to provide 5 additional free months of service for 5 year terms. The term listed in the above quote already includes the additional term of service given for free. Minimum purchase of 400TB required.
Quote form and Purchase Order must be completed by August 30, 2024 to be eligible for this promotion.

Subtotal:	**$128,887.08**
Tax (10.7500%):	$0.00
Shipping:	$0.00
Misc:	$0.00
Total:	**$128,887.08**

Sales tax calculation is estimated and subject to change. Terms Definition: Unless agreed upon otherwise; Net 30 terms, cash in the GHA bank 30 days from the date of shipment. Lease payment calculations are estimated and may include sales tax in the payment amount. You can obtain an accurate lease quote from our leasing company. Rates are subject to change without notice.

GHA is an authorized and leading supplier for Microsoft, HP, Apple, Dell, Lenovo, VMWare, IBM and Cisco. GHA does not source any of these products from the gray market. If you have a pending quotation from a competitor that is significantly less in price, that may be a strong indication of gray market involvement. Please immediately bring this to the attention of your sales professional who can verify with the manufacturer for your benefit and protection. Your sales representative can also talk to you about the risks associated with doing business with a gray market supplier.

-The prices quoted may change due to market conditions beyond our control.

-GHA cannot be responsible for manufacturer availability or delays.

-No verbal quotations or promises can be honored unless set forth herein.

-Due to many people working from home, GHA will not be responsible for the boxes if lost or stolen after the delivery has been made, and if they are lost or stolen, you still agree to pay your GHA invoice. Signature will be required on all shipments.

-Handling Fees: Handling fees charged on shipments are in addition to the freight and insurance charges and vary.

-Returns Policy: Cloud Service Provider CSP orders for Microsoft require at least 30 days of cancellation notice from Buyer. Buyer agrees to pay for any cloud subscription usage incurred. For all other CSP s, GHA will pass through and honor the cancellation policy as stated in the original contract whether 30, 60 or 90 days of cancellation notice is required. Custom computers and technology orders are non-cancellable and non-returnable. No return will be accepted after 30 days from the invoice date. Goods accepted for credit upon return will be subject to handling/restocking charge, which shall be not less than 15% of the price of Goods. Custom-made Goods are not subject to cancellation or return under any circumstances. In no case are Goods to be returned without first obtaining Seller's written permission. Goods must be securely packed in the

original packaging and delivered to Seller in an undamaged condition with Buyer being solely responsible for paying all return freight expenses and keeping the GHA invoice current within 30 days from the date of shipment regardless of the reason for a return. All returns must be accompanied by an authorized RMA number, which is valid for 15 days after date of issuance. GHA Technologies makes NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE with respect to the goods described hereon. Professional Service Organizations are separate companies from GHA. GHA is not responsible for their workmanship and there is no right to offset payment.

-International shipments/returns: Customer is responsible to pay all VAT, duties, customs charges, freight forwarding services, storage, handling, foreign exchange rates/fees, miscellaneous fees from any country, expedited or return freight expenses. Customer shall be liable; GHA is NOT responsible. GHA is not responsible for any return shipment expenses.

-Supplier represents and warrants that it is an equal-opportunity employer and does not discriminate on the basis of age, race, creed, color, religion, sex, sexual orientation, gender identity, national origin, disability, marital or veteran status, or any other basis that is prohibited by law.

-This document shall be governed by the laws of the State of Arizona.

-You may view all Terms & Conditions at: https://www.gha-associates.com/terms-and-conditions - .

-THIS QUOTE HAS BEEN PROVIDED FOR CLIENT AND GHA PURPOSES ONLY**

-CORPORATE OFFICE: (REMIT PAYMENTS TO THE DEPARTMENT NUMBER AND PO BOX LISTED ABOVE; NO PAYMENTS SHOULD BE MAILED TO THE CORPORATE OFFICE) GHA Technologies, Inc. 8998 E. Raintree Drive Scottsdale, AZ 85260

Docusign Envelope ID: 42D159C6-2C2E-41E6-9349-60C92404CF4E

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
11/14/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME: Sentry Customer Service	
Sentry Insurance 1800 North Point Drive Stevens Point, WI 54481	PHONE (A/C. No. Ext): 800-473-6879	FAX (A/C. No): 800-514-7191
	EMAIL ADDRESS: businessproducts_direct@sentry.com	
	INSURER(S) AFFORDING COVERAGE	NAIC #
	INSURER A : Sentry Insurance Company	24988
INSURED GHA Technologies Inc 8998 E Raintree Dr Scottsdale, AZ 85260-7024	INSURER B :	
	INSURER C :	
	INSURER D :	
	INSURER E :	
	INSURER F :	

COVERAGES **CERTIFICATE NUMBER:** 679837 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY ☐ PRO-JECT ☐ LOC ☐ OTHER:			2420758003	01/01/2024	01/01/2025	EACH OCCURRENCE	$ 2,000,000
							DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 500,000
							MED EXP (Any one person)	$ 15,000
							PERSONAL & ADV INJURY	$ 2,000,000
							GENERAL AGGREGATE	$ 6,000,000
							PRODUCTS - COMP/OP AGG	$ 4,000,000
								$
A	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS X HIRED AUTOS ONLY X NON-OWNED AUTOS ONLY			2420758004	01/01/2024	01/01/2025	COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
A	X UMBRELLA LIAB X OCCUR X EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $			2420758005	01/01/2024	01/01/2025	EACH OCCURRENCE	$ 2,000,000
							AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y / N ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? Y (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		2420758007	01/01/2024	01/01/2025	X PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$ 1,000,000
							E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Refer to attached

CERTIFICATE HOLDER	CANCELLATION
GHA Technologies Inc 8998 E Raintree Dr Scottsdale, AZ 85260-7024	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE John Hyland

© 1988-2015 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

Docusign Envelope ID: 42D159C0-2C2E-41E6-9349-60C92404CF4E

AGENCY CUSTOMER ID: XXXXXX1967

LOC #:

ADDITIONAL REMARKS SCHEDULE

AGENCY	NAMED INSURED
Justin Dixon Knight	GHA Technologies Inc
POLICY NUMBER	
2420758003	
CARRIER / **NAIC CODE**	
Sentry Insurance Company / 24988	**EFFECTIVE DATE:** 01/01/2024

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,

FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance

Certificate Details

..

© 2008 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

City of Newark

Newark Police Department

37077 Newark Boulevard
Newark, CA 94560

DATE: August 7, 2024

TO: David Benoun, City Manager

VIA: Jonathan Arguello, Chief of Police

FROM: Kamini Kumar, Management Analyst II

SUBJECT: Mike Yorks Investigations Agreement

The City of Newark Police Department is committed to maintaining staffing levels necessary to provide high levels of public safety services to the community. The department is focused on recruitment efforts to attract qualified candidates. Prior to hiring police officers, a background investigation that complies with California Peace Officer Standards and Training (POST) guidelines is required. In 2016, the Police Department contracted with Mike Yorks Investigations to conduct thorough, accurate and objective pre-employment background investigations of police department employee candidates in accordance with guidelines set forth by POST. The department has been utilizing Mike Yorks Investigations to complete the required police department staff background investigations.

On March 24, 2023, the city approved an agreement to extend the background investigation services with Mike Yorks Investigations through June 30, 2024.

Funding for this service agreement in the amount of $90,000 was budgeted for fiscal year 2024-2025, to provide pre-employment background services The Not to Exceed amount in the FY2024-2025 agreement is $90,000.00 per year.

110.30.032.320.6220 Mike Yorks Investigations $90,000

RECOMMENDATION

Staff recommends the City Manager to sign the Mike Yorks Investigations Agreement for the fiscal year 2024-2025.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby authorize the acceptance of an agreement with Mike Yorks Investigations for fiscal year 2024-2025.

David J. Benoun, City Manager

By

8-13-24

Date

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

C23027

CONSULTING SERVICES AGREEMENT BETWEEN THE CITY OF NEWARK AND MIKE YORKS INVESTIGATIONS FOR PRE-EMPLOYMENT BACKGROUND INVESTIGATIONS AND REPORTS

This Agreement for consulting services ("Agreement") is made by and between the City of Newark, a municipal corporation, ("City") and Mike York Investigations, a sole proprietor), with offices located at 1438 Lansing Avenue, San Jose, CA 95118 ("Consultant"), (together referred to as the "Parties") as of **July 1st, 2024** (the "Effective Date").

Section 1. Services. Subject to the terms and conditions set forth in this Agreement, Consultant shall provide to City the services described in the Scope of Work attached as Exhibit A and incorporated herein, at the time and place and in the manner specified therein. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit A, the Agreement shall prevail.

1.1 Term of Services. The term of this Agreement shall begin on the Effective Date and shall end on **June 30th, 2025**, and Consultant shall complete the work described in Exhibit A on or before that date, unless the term of the Agreement is otherwise terminated or extended, as provided for in Section 8. The time provided to Consultant to complete the services required by this Agreement shall not affect the City's right to terminate the Agreement, as referenced in Section 8. Funding for services beyond the current fiscal year will be included in future City budgets but is subject to City Council approval of annual appropriations.]

1.2 Standard of Performance. Consultant shall perform all services required pursuant to this Agreement according to the standards observed by a competent practitioner of the profession in which Consultant is engaged and in the geographical area in which Consultant practices its profession.

1.3 Assignment of Personnel. Consultant shall assign only competent personnel to perform services pursuant to this Agreement. In the event that City, in its sole discretion, at any time during the term of this Agreement, desires the reassignment of any such persons, Consultant shall, immediately upon receiving notice from City of such desire of City, reassign such person or persons.

1.4 Time is of the Essence. Time is of the essence. Consultant shall devote such time to the performance of services pursuant to this Agreement as may be reasonably necessary to timely finish the Scope of Work, to meet the standard of performance provided in Section 1.1 and 1.2 above and to satisfy Consultant's obligations hereunder.

Section 2. COMPENSATION. City hereby agrees to pay Consultant a sum not to **exceed Ninety Thousand Dollars, ($90,000.00)** notwithstanding any contrary indications that may be contained in Consultant's proposal for services to be performed and reimbursable costs incurred under this Agreement. In the event of a conflict between this Agreement and Consultant's proposal, attached as Exhibit A, regarding the amount of compensation, the Agreement shall prevail. City shall pay Consultant for services rendered pursuant to this Agreement at the time and in the manner set forth herein. The payments specified below shall be the only payments from City to Consultant for services rendered pursuant to this Agreement. Consultant shall submit all invoices to City in the manner

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

specified herein. Except as specifically authorized by City in writing, Consultant shall not bill City for duplicate services performed by more than one person.

Consultant and City acknowledge and agree that compensation paid by City to Consultant under this Agreement is based upon Consultant's estimated costs of providing the services required hereunder, including salaries and benefits of employees and subcontractors of Consultant. Consequently, the parties further agree that compensation hereunder is intended to include the costs of contributions to any pensions and/or annuities to which Consultant and its employees, agents, and subcontractors may be eligible. City therefore has no responsibility for such contributions beyond compensation required under this Agreement.

2.1 Invoices. Consultant shall submit invoices, not more often than once a month during the term of this Agreement, based on the cost for services performed and reimbursable costs incurred prior to the invoice date. Invoices shall contain the following information, unless waived by the Contract Administrator:

- Serial identifications of progress bills; i.e., Progress Bill No. 1 for the first invoice, etc.;
- Project name & number if applicable;
- Purchase Order number to expedite payment;
- The beginning and ending dates of the billing period;
- A task summary containing the original contract amount, the amount of prior billings, the total due this period, the balance available under the Agreement, and the percentage of completion;
- At City's option, for each work item in each task, a copy of the applicable time entries or time sheets shall be submitted showing the name of the person doing the work, the hours spent by each person, a brief description of the work, and each reimbursable expense;
- The total number of hours of work performed under the Agreement by Consultant and each employee, agent, and subcontractor of Consultant performing services hereunder;
- The Consultant's signature;
- Consultant shall give separate notice to the City when the total number of hours worked by Consultant and any individual employee, agent, or subcontractor of Consultant reaches or exceeds 800 hours within a 12-month period.

2.2 Monthly Payment. City shall make monthly payments, based on invoices received, for services satisfactorily performed, and for authorized reimbursable costs incurred. City shall have 30 days from the receipt of an invoice that complies with all of the requirements above to pay Consultant.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

2.3 Final Payment. City shall pay the last 10% of the total sum due pursuant to this Agreement within 60 days after completion of the services and submittal to City of a final invoice, if all services required have been satisfactorily performed.

2.4 Total Payment. City shall pay for the services to be rendered by Consultant pursuant to this Agreement. City shall not pay any additional sum for any expense or cost whatsoever incurred by Consultant in rendering services pursuant to this Agreement. City shall make no payment for any extra, further, or additional service pursuant to this Agreement.

In no event shall Consultant submit any invoice for an amount in excess of the maximum amount of compensation provided above either for a task or for the entire Agreement, unless the Agreement is modified prior to the submission of such an invoice by a properly executed change order or amendment.

2.5 Hourly Rate/Fees. Unless the services provided are for a lump sum or flat fee, fees for work performed by Consultant on an hourly basis shall not exceed the amounts shown on the compensation cost proposal attached hereto as Exhibit B. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibit B, the Agreement shall prevail.

2.6 Reimbursable Expenses. Reimbursable expenses are specified in Exhibit B, attached hereto and incorporated herein. Reimbursable expenses not listed in Exhibit B are not chargeable to City. Reimbursable expenses shall not include a mark-up and are billed as a direct costs. In no event shall expenses be advanced by the City to the Consultant. Reimbursable expenses are included in the total amount of compensation provided under this Agreement that shall not be exceeded.

2.7 Payment of Taxes. Consultant is solely responsible for the payment of employment taxes incurred under this Agreement and any similar federal or state taxes.

2.8 Payment upon Termination. In the event that the City or Consultant terminates this Agreement pursuant to Section 8, the City shall compensate the Consultant for all outstanding costs and reimbursable expenses incurred for work satisfactorily completed as of the date of written notice of termination. Consultant shall maintain adequate logs and timesheets to verify costs incurred to that date.

2.9 Authorization to Perform Services. The Consultant is not authorized to perform any services or incur any costs whatsoever under the terms of this Agreement until receipt of authorization from the Contract Administrator.

2.10. Business License. The Consultant is not authorized to perform services or incur costs whatsoever under the terms of this Agreement until Consultant applies for and has been issued a business license from the City pursuant to Title 5 of the Newark Municipal Code.

Section 3. FACILITIES AND EQUIPMENT. Except as set forth herein, Consultant shall, at its sole cost and expense, provide all facilities and equipment that may be necessary to perform the services required by this Agreement. City shall make available to Consultant only the facilities and equipment listed in this section, and only under the terms and conditions set forth herein.

City shall furnish physical facilities such as desks, filing cabinets, and conference space, as may be reasonably necessary for Consultant's use while consulting with City employees and reviewing records and the information in possession of the City. The location, quantity, and time of furnishing those facilities shall be in the sole discretion of City. In no event shall City be obligated to furnish any facility that may involve incurring any direct expense, including but not limited to computer, long-distance telephone or other communication charges, vehicles, and reproduction facilities.

Section 4. INSURANCE REQUIREMENTS. Before beginning any work under this Agreement, Consultant, at its own cost and expense, unless otherwise specified below, shall procure the types and amounts of insurance listed below against claims for injuries to persons or damages to property that may arise from or in connection with the performance of the work hereunder by the Consultant and its agents, representatives, employees, and subcontractors. Consistent with the following provisions, Consultant shall provide proof satisfactory to City of such insurance that meets the requirements of this section and under forms of insurance satisfactory in all respects, and that such insurance is in effect prior to beginning work to the City. Consultant shall maintain the insurance policies required by this section throughout the term of this Agreement. The cost of such insurance shall be included in the Consultant's bid. Consultant shall not allow any subcontractor to commence work on any subcontract until Consultant has obtained all insurance required herein for the subcontractor(s) and provided evidence that such insurance is in effect to City. Verification of the required insurance shall be submitted and made part of this Agreement prior to execution.

4.1 Required Coverage. Consultant shall maintain all required insurance listed herein for the duration of this Agreement.

COVERAGE	TYPE OF INSURANCE	MINIMUM LIMITS
A	**Commercial General Liability** Premises Liability; Products and Completed Operations; Contractual Liability; Personal Injury and Advertising Liability	$2,000,000 per occurrence; Bodily Injury and Property Damage $4,000,00 in the aggregate; Commercial general coverage shall be at least as broad as Insurance Services Office Commercial General Liability occurrence form CG 0001 (most recent edition) covering comprehensive General Liability on an "occurrence" basis
B	**Commercial or Business Automobile Liability** All owned vehicles, hired or leased vehicles, non-owned, borrowed and permissive uses. Personal Automobile Liability is acceptable for individual	$1,000,000 per occurrence; Any Auto; Bodily Injury and Property Damage. Automobile coverage shall be at least as broad as Insurance Services Office Automobile Liability form CA 0001 (most recent

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

	contractors with no transportation or hauling related activities	edition), Code 1 (any auto). No endorsement shall be attached limiting the coverage.
C	**Workers' Compensation (WC) and Employers Liability (EL)** Required for all contractors with employees	WC: Statutory Limits EL: $100,000 per accident for bodily injury or disease. Consultant may rely on a self-insurance program to meet those requirements, but only if the program of self-insurance complies fully with the provisions of the California Labor Code. The insurer shall waive all rights of subrogation against the City and its officers, officials, employees, and volunteers for loss arising from work performed under this Agreement
D	**Professional Liability/Errors & Omissions** Includes endorsements of contractual liability	$2,000,000 per occurrence $4,000,000 policy aggregate; Any deductible or self-insured retention shall not exceed $150,000 per claim

4.2 **Additional requirements.** Each of the following shall be included in the insurance coverage or added as a certified endorsement to the policy:

a. All required insurance shall be maintained during the entire term of the Agreement with the following exception: Insurance policies and coverage(s) written on a claims-made basis shall be maintained during the entire term of the Agreement and until three (3) years following termination and acceptance of all work provided under the Agreement, with the retroactive date of said insurance (as may be applicable) concurrent with the commencement of activities pursuant to this Agreement

b. All insurance required above with the exception of Professional Liability, Personal Automobile Liability, Workers' Compensation and Employers Liability, shall be endorsed to name as additional insured: City of Newark, its City Council, and all City officers, agents, employees, volunteers and representatives.

c. For any claims related to this Agreement or the work hereunder, the Consultant's insurance covered shall be primary insurance as respects the City, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

d. Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after 30 days' prior written notice has been provided to the City.

e. Certificates of Insurance: Before commencing operations under this Agreement, Consultant shall provide Certificate(s) of Insurance and applicable insurance endorsements, in form and satisfactory to City, evidencing that all required insurance coverage is in effect. The City reserves the rights to require the Consultant to provide complete, certified copies of all required insurance policies.

f. Subcontractors: Consultant shall include all subcontractors as an insured (covered party) under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

g. Claims-made limitations. The following provisions shall apply if the professional liability coverage is written on a claims-made form:

i. The retroactive date of the policy must be shown and must be before the date of the Agreement.

ii. Insurance must be maintained and evidence of insurance must be provided for at least five years after completion of the Agreement or the work, so long as commercially available at reasonable rates.

iii. If coverage is canceled or not renewed and it is not replaced with another claims-made policy form with a retroactive date that precedes the date of this Agreement, Consultant must purchase an extended period coverage for a minimum of three (3) years after completion of work under this Agreement.

iv. A copy of the claim reporting requirements must be submitted to the City for review prior to the commencement of any work under this Agreement.

4.3 All Policies Requirements.

a. Acceptability of insurers. All insurance required by this section is to be placed with insurers with a Bests' rating of no less than A:VII. Insurance shall be maintained through an insurer with a minimum A.M. Best Rating of A- or better, with deductible amounts acceptable to the City. Acceptance of Consultant's insurance by City shall not relieve or decrease the liability of Consultant hereunder. Any deductible or self-insured retention amount or other similar obligation under the policies shall be the sole responsibility of the Consultant.

b. Deductibles and Self-Insured Retentions. Consultant shall disclose to and obtain the written approval of City for the self-insured retentions and deductibles before beginning any of the services or work called for by any term of this Agreement. At the option of the City, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, employees, and volunteers; or the Consultant shall provide a financial guarantee satisfactory

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

c. Wasting Policies. No policy required by this Section 4 shall include a "wasting" policy limit (i.e. limit that is eroded by the cost of defense).

d. Waiver of Subrogation. Consultant hereby agrees to waive subrogation which any insurer or contractor may require from vendor by virtue of the payment of any loss. Consultant agrees to obtain any endorsements that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the entity for all work performed by the consultant, its employees, agents, and subcontractors.

4.4 Remedies. In addition to any other remedies City may have if Consultant fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option exercise any of the following remedies, which are alternatives to other remedies City may have and are not the exclusive remedy for Consultant's breach:

- Obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under the Agreement;
- Order Consultant to stop work under this Agreement or withhold any payment that becomes due to Consultant hereunder, or both stop work and withhold any payment, until Consultant demonstrates compliance with the requirements hereof; and/or
- Terminate this Agreement.

Section 5. INDEMNIFICATION AND CONSULTANT'S RESPONSIBILITIES.

Consultant shall indemnify, defend with counsel acceptable to City, and hold harmless City and its officers, officials, employees, agents and volunteers from and against any and all liability, loss, damage, claims, expenses, and costs (including without limitation, attorney's fees and costs and fees of litigation) (collectively, "Liability") of every nature arising out of or in connection with Consultant's performance of the Services or its failure to comply with any of its obligations contained in this Agreement, except such Liability caused by the sole negligence or willful misconduct of City.

The Consultant's obligation to defend and indemnify shall not be excused because of the Consultant's inability to evaluate Liability or because the Consultant evaluates Liability and determines that the Consultant is not liable to the claimant. The Consultant must respond within 30 days, to the tender of any claim for defense and indemnity by the City, unless this time has been extended by the City. If the Consultant fails to accept or reject a tender of defense and indemnity within 30 days, in addition to any other remedy authorized by law, so much of the money due the Consultant under and by virtue of this Agreement as shall reasonably be considered necessary by the City, may be retained by the City until disposition has been made of the claim or suit for damages, or until the Consultant accepts or rejects the tender of defense, whichever occurs first.

With respect to third party claims against the Consultant, the Consultant waives any and all rights of any type to express or implied indemnity against the Indemnitees.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

Notwithstanding the forgoing, to the extent this Agreement is a "construction contract" as defined by California Civil Code Section 2782, as may be amended from time to time, such duties of consultant to indemnify shall not apply when to do so would be prohibited by California Civil Code Section 2782.

In the event that Consultant or any employee, agent, or subcontractor of Consultant providing services under this Agreement is determined by a court of competent jurisdiction or the California Public Employees Retirement System (PERS) to be eligible for enrollment in PERS as an employee of City, Consultant shall indemnify, defend, and hold harmless City for the payment of any employee and/or employer contributions for PERS benefits on behalf of Consultant or its employees, agents, or subcontractors, as well as for the payment of any penalties and interest on such contributions, which would otherwise be the responsibility of City.

Section 6. STATUS OF CONSULTANT.

6.1 Independent Contractor. At all times during the term of this Agreement, Consultant shall be an independent contractor and shall not be an employee of City. City shall have the right to control Consultant only insofar as the results of Consultant's services rendered pursuant to this Agreement and assignment of personnel pursuant to Subparagraph 1.3; however, otherwise City shall not have the right to control the means by which Consultant accomplishes services rendered pursuant to this Agreement. Notwithstanding any other City, state, or federal policy, rule, regulation, law, or ordinance to the contrary, Consultant and any of its employees, agents, and subcontractors providing services under this Agreement shall not qualify for or become entitled to, and hereby agree to waive any and all claims to, any compensation, benefit, or any incident of employment by City, including but not limited to eligibility to enroll in the California Public Employees Retirement System (PERS) as an employee of City and entitlement to any contribution to be paid by City for employer contributions and/or employee contributions for PERS benefits.

6.2 Consultant Not an Agent. Except as City may specify in writing, Consultant shall have no authority, express or implied, to act on behalf of City in any capacity whatsoever as an agent. Consultant shall have no authority, express or implied, pursuant to this Agreement to bind City to any obligation whatsoever.

Section 7. LEGAL REQUIREMENTS.

7.1 Governing Law. The laws of the State of California shall govern this Agreement.

7.2 Compliance with Applicable Laws. Consultant and any subcontractors shall comply with all laws applicable to the performance of the work hereunder.

7.3 Other Governmental Regulations. To the extent that this Agreement may be funded by fiscal assistance from another governmental entity, Consultant and any subcontractors shall comply with all applicable rules and regulations to which City is bound by the terms of such fiscal assistance program.

7.4 Licenses and Permits. Consultant represents and warrants to City that Consultant and its employees, agents, and any subcontractors have all licenses, permits, qualifications, and approvals

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

of whatsoever nature that are legally required to practice their respective professions. Consultant represents and warrants to City that Consultant and its employees, agents, any subcontractors shall, at their sole cost and expense, keep in effect at all times during the term of this Agreement any licenses, permits, and approvals that are legally required to practice their respective professions. In addition to the foregoing, Consultant and any subcontractors shall obtain and maintain during the term of this Agreement valid Business Licenses from City.

7.5 Nondiscrimination and Equal Opportunity. Consultant shall not discriminate, on the basis of a person's race, religion, color, national origin, age, physical or mental handicap or disability, medical condition, genetic information, marital status, sex, sexual orientation, gender, or gender identity, against any employee, applicant for employment, subcontractor, bidder for a subcontract, or participant in, recipient of, or applicant for any services or programs provided by Consultant under this Agreement. Consultant shall comply with all applicable federal, state, and local laws, policies, rules, and requirements related to equal opportunity and nondiscrimination in employment, contracting, and the provision of any services that are the subject of this Agreement, including but not limited to the satisfaction of any positive obligations required of Consultant thereby.

Consultant shall include the provisions of this Subsection in any subcontract approved by the Contract Administrator or this Agreement.

Section 8. TERMINATION AND MODIFICATION.

8.1 Termination. City may cancel this Agreement at any time and without cause upon written notification to Consultant. Consultant may cancel this Agreement upon thirty (30) days' written notice to City and shall include in such notice the reasons for cancellation.

In the event of termination, Consultant shall be entitled to compensation for services performed to the effective date of termination; City, however, may condition payment of such compensation upon Consultant delivering to City any or all work product, including, but not limited to documents, photographs, computer software, video and audio tapes, and other materials provided to Consultant or prepared by or for Consultant or the City in connection with this Agreement.

8.2 Extension. City may, in its sole and exclusive discretion, extend the end date of this Agreement beyond that provided for in Subsection 1.1. Any such extension shall require a written amendment to this Agreement, as provided for herein. Consultant understands and agrees that, if City grants such an extension, City shall have no obligation to provide Consultant with compensation beyond the maximum amount provided for in this Agreement. Similarly, unless authorized by the Contract Administrator, City shall have no obligation to reimburse Consultant for any otherwise reimbursable expenses incurred during the extension period.

8.3 Amendments. The Parties may amend this Agreement only by a writing signed by all the Parties.

8.4 Assignment and Subcontracting. City and Consultant recognize and agree that this Agreement contemplates personal performance by Consultant and is based upon a determination of Consultant's unique personal competence, experience, and specialized personal knowledge. Moreover, a substantial inducement to City for entering into this Agreement was and is the professional

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

reputation and competence of Consultant. Consultant may not assign this Agreement or any interest therein without the prior written approval of the Contract Administrator. Consultant shall not subcontract any portion of the performance contemplated and provided for herein, other than to the subcontractors noted in the proposal, without prior written approval of the Contract Administrator.

8.5 Survival. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating liability between City and Consultant shall survive the termination of this Agreement.

8.6 Options upon Breach by Consultant. If Consultant materially breaches any of the terms of this Agreement, City's remedies shall include, but not be limited to, the following:

8.6.1 Immediately terminate the Agreement;

8.6.2 Retain the plans, specifications, drawings, reports, design documents, and any other work product prepared by Consultant pursuant to this Agreement;

8.6.3 Retain a different consultant to complete the work described in Exhibit A not finished by Consultant; or

8.6.4 Charge Consultant the difference between the cost to complete the work described in Exhibit A that is unfinished at the time of breach and the amount that City would have paid Consultant pursuant to Section 2 if Consultant had completed the work.

8.6.5 No remedy mentioned in this Agreement is intended to be exclusive of any other right, power, or remedy, permitted by law. Neither the failure nor the delay on the part of the City to exercise any such rights and remedies shall operate as a waiver thereof, nor shall any single or partial exercise by the City of any such right or remedy preclude any other or further exercise of any such right or remedy.

Section 9. KEEPING AND STATUS OF RECORDS.

9.1 Records Created as Part of Consultant's Performance. All reports, data, maps, models, charts, studies, surveys, photographs, memoranda, plans, studies, specifications, records, files, or any other documents or materials, in electronic or any other form, that Consultant prepares or obtains pursuant to this Agreement and that relate to the matters covered hereunder shall be the property of the City. Consultant hereby agrees to deliver those documents to the City upon termination of the Agreement and City may use, reuse or otherwise dispose of the documents without Consultant's permission. It is understood and agreed that the documents and other materials, including but not limited to those described above, prepared pursuant to this Agreement are prepared specifically for the City and are not necessarily suitable for any future or other use. City and Consultant agree that, until final approval by City, all data, plans, specifications, reports and other documents are confidential and will not be released to third parties without prior written consent of both parties.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

9.2 Consultant's Books and Records. Consultant shall maintain any and all ledgers, books of account, invoices, vouchers, canceled checks, and other records or documents evidencing or relating to charges for services or expenditures and disbursements charged to the City under this Agreement for a minimum of 3 years, or for any longer period required by law, from the date of final payment to the Consultant to this Agreement. All such records should be maintained in accordance with generally accepted accounting principles and shall be clearly identified and readily accessible.

9.3 Inspection and Audit of Records. Any records or documents that Section 9.2 of this Agreement requires Consultant to maintain shall be made available for inspection, audit, and/or copying at any time during regular business hours, upon oral or written request of the City. Under California Government Code Section 8546.7, if the amount of public funds expended under this Agreement exceeds $10,000.00, the Agreement shall be subject to the examination and audit of the State Auditor, at the request of City or as part of any audit of the City, for a period of 3 years after final payment under the Agreement.

Section 10 MISCELLANEOUS PROVISIONS.

10.1 Attorneys' Fees. If a party to this Agreement brings any action, including an action for declaratory relief, to enforce or interpret the provision of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which that party may be entitled. The court may set such fees in the same action or in a separate action brought for that purpose.

10.2 Venue. In the event that either party brings any action against the other under this Agreement, the parties agree that trial of such action shall be vested exclusively in the state courts of California in the County of Alameda or in the United States District Court for the Northern District of California.

10.3 Severability. If a court of competent jurisdiction finds or rules that any provision of this Agreement is invalid, void, or unenforceable, the provisions of this Agreement not so adjudged shall remain in full force and effect. The invalidity in whole or in part of any provision of this Agreement shall not void or affect the validity of any other provision of this Agreement.

10.4 No Implied Waiver of Breach. The waiver of any breach of a specific provision of this Agreement does not constitute a waiver of any other breach of that term or any other term of this Agreement.

10.5 Successors and Assigns. The provisions of this Agreement shall inure to the benefit of and shall apply to and bind the successors and assigns of the parties.

10.6 Use of Recycled Products. Consultant shall prepare and submit all reports, written studies and other printed material on recycled paper to the extent it is available at equal or less cost than virgin paper.

10.7 Conflict of Interest. Consultant may serve other clients, but none whose activities within the corporate limits of City or whose business, regardless of location, would place Consultant in a "conflict of interest," as that term is defined in the Political Reform Act, codified at California Government Code Section 81000 *et seq.*

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

Consultant shall not employ any City official in the work performed pursuant to this Agreement. No officer or employee of City shall have any financial interest in this Agreement that would violate California Government Code Sections 1090 *et seq.* Consultant hereby warrants that it is not now, nor has it been in the previous 12 months, an employee, agent, appointee, or official of the City. If Consultant was an employee, agent, appointee, or official of the City in the previous twelve months, Consultant warrants that it did not participate in any manner in the forming of this Agreement. Consultant understands that, if this Agreement is made in violation of Government Code § 1090 *et seq.*, the entire Agreement is void and Consultant will not be entitled to any compensation for services performed pursuant to this Agreement, including reimbursement of expenses, and Consultant will be required to reimburse the City for any sums paid to the Consultant. Consultant understands that, in addition to the foregoing, it may be subject to criminal prosecution for a violation of Government Code § 1090 and, if applicable, will be disqualified from holding public office in the State of California.

10.8 Solicitation. Consultant agrees not to solicit business at any meeting, focus group, or interview related to this Agreement, either orally or through any written materials.

10.9 Contract Administration. This Agreement shall be administered by the City Manager, or his designee, identified as Kamini Kumar, Management Analyst II ("Contract Administrator"). All correspondence, meeting documentation, invoices and project deliverables shall be directed to or through the Contract Administrator.

10.10 Notices. Any notice, demand, request, consent or approval that either party is required to give the other pursuant to this Agreement, shall be in writing and may be given by either (i) personal service, (ii) delivery by reputable overnight delivery service (e.g. Federal Express) which provides a receipt showing date and time of delivery, (iii) certified United States mail, postage prepaid, return receipt requested, or (iv) by email transmission . Notice shall be effective upon personal delivery or delivery to the addresses specified below, as reflected on the receipt of delivery or return receipt, as applicable.

Any written notice to Consultant shall be sent to:

Mike York Investigations
1438 Lansing Avenue
San Jose
CA 95118

All other written notices to City shall be sent to:

Michelle Griese Police Lieutenant City of Newark 37101 Newark Blvd. Newark, CA 94560	with a copy to	Kristopher J. Kokotaylo, City Attorney City of Newark 37101 Newark Blvd. Newark, CA 94560

10.12 Professional Seal. Where applicable in the determination of the contract administrator, the first page of a technical report, first page of design specifications, and each page of

construction drawings shall be stamped/sealed and signed by the licensed professional responsible for the report/design preparation. The stamp/seal shall be in a block entitled "Seal and Signature of Registered Professional with report/design responsibility," as in the following example.

_____ Seal and Signature of Registered Professional with report/design responsibility.

10.13 Integration. This Agreement, including the scope of work attached hereto and incorporated herein as Exhibits A and B represent the entire and integrated agreement between City and Consultant and supersedes all prior negotiations, representations, or agreements, either written or oral.

Exhibit A	Scope of Services
Exhibit B	Cost Proposal

10.14 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be an original and all of whieh together shall constitute one agreement.

SIGNATURES ON FOLLOWING PAGE

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

The Parties have executed this Agreement as of the Effective Date.

CITY OF NEWARK

DocuSigned by:
David Benoun

David Benoun, CITY MANAGER

ATTEST:

DocuSigned by:
Sheila Harrington

Sheila Harrington, CITY CLERK

APPROVED AS TO FORM:

Signed by:
kristopher kokotaylo

KRISTOPHER J. KOKOTAYLO
CITY ATTORNEY

MIKE YORK INVESTIGATIONS

Signed by:
Mike Yorks

Title: Sole Business Owner

5638310.1
Version 3.2.21

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

EXHIBIT A

SCOPE OF SERVICES

This Scope of Services. Exhibit "A." is hereby incorporated by reference into the Agreement. under *Agreement* Paragraph 1.

a. Conduct thorough. accurate and objective Pre-employment Background Investigations of Public Safety candidates. in accordance with California Peace Officers Standards and Training (P.O.S.T.).

b. Prepare and submit professional reports of the finding of each Pre-employment Background Investigation.

c. Collect documentation in the process of conducting the Background Investigations and organize the documentation in accordance with P.O.S.T. regulations.

d. Assist with hiring processes. including but not limited to interviews. testing processes. creating tests. and evaluation of applicants. on an as needed basis.

e. Assist with projects as assigned. on an as needed basis.

f. Devote as much productive time. energy. and ability to the performance of its duties hereunder as may be necessary to provide the required Services in a timely and productive manner.

g. Reasonably and regularly communicate with City regarding progress Consultant has made in performing Services.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

EXHIBIT B

COMPENSATION SCHEDULE

PAYMENT

As full compensation for the Services rendered pursuant to this Agreement, City shall pay Consultant the rate of $75 per hour for any work requested in writing by City. Consultant shall provide invoices requesting compensation on a monthly basis.

TRAVEL-RELATED EXPENSES

City will reimburse Consultant for all travel related expenses associated with the Services requested by City and provided under this Agreement, provided Consultant provides reasonable prior to incurring such expenses and City consents to reimbursing such expenses in writing.

Consultant will make every effort to ensure that travel expenses are at the minimum possible.

For Services that require overnight travel and/or airfare, expenses that qualify for reimbursement shall include air travel, ground transportation, one night accommodation, and one meal. City shall have the option of arranging all travel per its Newark Police Department travel policies.

For Services that do not require overnight travel and/or airfare but require travel by automobile in excess of 150 miles beyond 37101 Newark Blvd, Newark, California, then City shall pay a flat fee of $300.00 to consultant.

Consultant shall submit all receipts related to any reimbursement contemplated herein and such expenses shall be payable as described in Section 3 of this Agreement.

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

City of Newark

Newark Police Department

37077 Newark Boulevard
Newark, CA 94560

DATE: **August 7, 2024**

TO: **David Benoun, City Manager**

VIA: **Jonathan Arguello, Chief of Police**

FROM: **Kamini Kumar, Management Analyst II**

SUBJECT: **Mike Yorks Investigations Agreement**

The City of Newark Police Department is committed to maintaining staffing levels necessary to provide high levels of public safety services to the community. The department is focused on recruitment efforts to attract qualified candidates. Prior to hiring police officers, a background investigation that complies with California Peace Officer Standards and Training (POST) guidelines is required. In 2016, the Police Department contracted with Mike Yorks Investigations to conduct thorough, accurate and objective pre-employment background investigations of police department employee candidates in accordance with guidelines set forth by POST. The department has been utilizing Mike Yorks Investigations to complete the required police department staff background investigations.

On March 24, 2023, the city approved an agreement to extend the background investigation services with Mike Yorks Investigations through June 30, 2024.

Funding for this service agreement in the amount of $90,000 was budgeted for fiscal year 2024-2025, to provide pre-employment background services The Not to Exceed amount in the FY2024-2025 agreement is $90,000.00 per year.

110.30.032.320.6220 Mike Yorks Investigations $90,000

Docusign Envelope ID: BA5DAE83-69A4-4E9D-8718-197ED4AEE6BA

RECOMMENDATION

Staff recommends the City Manager to sign the Mike Yorks Investigations Agreement for the fiscal year 2024-2025.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby authorize the acceptance of an agreement with Mike Yorks Investigations for fiscal year 2024-2025.

DocuSigned by:
David Benoun
0757678B2C2304C4...

David J. Benoun, City Manager

David Benoun

By

8/19/2024

Date

Certificate Of Completion

Envelope Id: BA5DAE8369A44E9D8718197ED4AEE6BA
Subject: Contract #23027 - MIKE YORKS INVESTIGATIONS
Source Envelope:
Document Pages: 18
Certificate Pages: 5
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Signatures: 5
Initials: 0

Status: Completed

Envelope Originator:
Kamini Kumar
37101 Newark Boulevard
Newark, CA 94560
kamini.kumar@newark.org
IP Address: 206.128.122.185

Record Tracking

Status: Original
8/14/2024 3:48:58 PM

Holder: Kamini Kumar
kamini.kumar@newark.org

Location: DocuSign

Signer Events	Signature	Timestamp
Mike Yorks myorksi@yahoo.com Sole Business Owner Security Level: Email, Account Authentication (None)	Signed by: Mike Yorks 7246A9D811504C4... Signature Adoption: Pre-selected Style Using IP Address: 75.49.250.129	Sent: 8/14/2024 3:55:16 PM Viewed: 8/17/2024 11:58:43 AM Signed: 8/17/2024 12:03:54 PM
Electronic Record and Signature Disclosure: Accepted: 8/17/2024 11:58:43 AM ID: 7da3b374-f9e3-4266-88f3-b90fcf56da35		
Kristopher Kokotaylo kristopher.kokotaylo@redwoodpubliclaw.com City Attorney Security Level: Email, Account Authentication (None)	Signed by: kristopher kokotaylo 95B17C2767614AB... Signature Adoption: Pre-selected Style Using IP Address: 166.107.163.11	Sent: 8/17/2024 12:03:56 PM Viewed: 8/17/2024 1:15:01 PM Signed: 8/17/2024 1:15:47 PM
Electronic Record and Signature Disclosure: Accepted: 8/17/2024 1:15:01 PM ID: e019934a-7e30-45ef-b38b-bf12258f0ce5		
David Benoun david.benoun@newark.org NEWARK CITY MANAGER David Benoun Security Level: Email, Account Authentication (None)	DocuSigned by: David Benoun 075767B2C2304C4... Signature Adoption: Pre-selected Style Using IP Address: 206.128.122.185	Sent: 8/17/2024 1:15:48 PM Viewed: 8/19/2024 8:22:58 AM Signed: 8/19/2024 8:23:11 AM
Electronic Record and Signature Disclosure: Accepted: 8/19/2024 8:22:58 AM ID: c819a174-1271-4da8-8809-6e8e36450950		
Sheila Harrington sheila.harrington@newark.org City Clerk City of Newark Security Level: Email, Account Authentication (None)	DocuSigned by: Sheila Harrington AD90989DBABE45E... Signature Adoption: Pre-selected Style Using IP Address: 206.128.122.185	Sent: 8/19/2024 8:23:14 AM Viewed: 8/19/2024 8:36:21 AM Signed: 8/19/2024 8:36:30 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	**Status**	**Timestamp**
Agent Delivery Events	**Status**	**Timestamp**
Intermediary Delivery Events	**Status**	**Timestamp**
Certified Delivery Events	**Status**	**Timestamp**
Carbon Copy Events	**Status**	**Timestamp**
Kamini Kumar kamini.kumar@newark.org Administrative Analyst City of Newark Police Department Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/19/2024 8:36:32 AM
Kathy Slafter kathy.slafter@newark.org Executive Assistant/Deputy City Clerk City of Newark Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/19/2024 8:36:33 AM
Jonathan Arguello jonathan.arguello@newark.org Chief of Police Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Accepted: 11/21/2023 12:02:18 PM ID: 27a572a5-0185-412b-83d3-a99c62e91160	COPIED	Sent: 8/19/2024 8:36:34 AM
Witness Events	**Signature**	**Timestamp**
Notary Events	**Signature**	**Timestamp**
Envelope Summary Events	**Status**	**Timestamps**
Envelope Sent	Hashed/Encrypted	8/14/2024 3:55:16 PM
Certified Delivered	Security Checked	8/19/2024 8:36:21 AM
Signing Complete	Security Checked	8/19/2024 8:36:30 AM
Completed	Security Checked	8/19/2024 8:36:34 AM
Payment Events	**Status**	**Timestamps**

Electronic Record and Signature Disclosure

City of Newark

Newark Police Department

37077 Newark Boulevard
Newark, CA 94560

DATE: August 6, 2024

TO: David Benoun, City Manager

VIA: Jonathan Arguello, Chief of Police

FROM: Sal Sandoval, Police Lieutenant

SUBJECT: All City Management Services (ACMS) Agreement

The City of Newark has maintained an agreement with All City Management Services (ACMS) to provide school crossing guard services at Newark Unified School District (NUSD) schools since August 2011. In 2023, Police Department staff issued a public Request for Proposals and only received one proposal for crossing guard services. ACMS was selected to continue as the provider of crossing guard services for NUSD.

On July 13, 2023, the city approved an agreement to extend the school crossing guard service through June 30, 2024. The NUSD 2023-2024 school year agreement with ACMS commenced on August 9, 2023, and ended on June 30, 2024. The NUSD 2024-2025 school year begins on August 8, 2024, and goes through May 29, 2025. The proposed ACMS agreement indicates that it will begin on or around August 1, 2024, and will end on June 30, 2025, with a do not exceed amount of $160,877. ACMS would be responsible for providing complete day-to-day crossing guard services for 180 school days.

Funding for this service agreement in the amount of $165,000 was budgeted for fiscal year 2024-2025 in the Police Department budget for the purpose of providing crossing guard services to the Newark Unified School District:

110.30.030.301.6221	Crossing Guard Services	$165,000

RECOMMENDATION

Staff recommends the City Manager sign the All City Management Services Agreement for the

fiscal year 2024-2025.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby authorize the acceptance of an agreement with All City Management Services for fiscal year 2024-2025.

David J. Benoun, City Manager

By

8-13-24

Date

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

C24078

AGREEMENT FOR CROSSING GUARD SERVICES

This AGREEMENT FOR CROSSING GUARD SERVICES (the "Agreement") is dated April 8, 2024 and is between the CITY OF NEWARK (hereinafter called the "City"), and ALL CITY MANAGEMENT SERVICES, INC., a California corporation (hereinafter called the "Contractor").

WITNESSETH

The parties hereto have mutually covenanted and agreed as follows:

1. This Agreement is for a period which commences on or around August 1, 2024 and ends on June 30, 2025 and for such term thereafter as the parties may agree upon by written amendment to this contract. Service shall begin on a best availability basis until such a time as Contractor has hired, trained and deployed Crossing Guards to all sites requested by the City. Contractor shall update City weekly as to personnel ready to deploy. City agrees to provide site locations for Contractor to then assign and deploy Crossing Guards. Contractor shall assume liability for only those sites agreed to by both Contractor and the City by written amendment stating effective date of assignment.

2. The Contractor will provide personnel equipped and trained in appropriate procedures for crossing pedestrians in marked crosswalks. Such personnel shall be herein referred to as a "Crossing Guard". The Contractor is an independent contractor and the Crossing Guards to be furnished by it shall at all times be its employees and not those of the City.

3. The City's representative in dealing with the Contractor shall be designated by the City of Newark.

4. The City shall determine the locations where Crossing Guards shall be furnished by the Contractor. The Contractor shall provide at each designated location personnel properly trained as herein specified for the performance of duties as a Crossing Guard. The Contractor shall provide supervisory personnel to see that Crossing Guard activities are taking place at the required places and times, and in accordance with the terms of this Agreement.

5. The Contractor shall maintain adequate reserve personnel to be able to furnish alternate Crossing Guards in the event that any person fails to report for work at the assigned time and location and agrees to provide immediate replacement.

6. In the performance of its duties the Contractor and all employees of the Contractor shall conduct themselves in accordance with the conditions of this Agreement and all applicable laws and codes of the State of California and the City of Newark.

7. Persons provided by the Contractor as Crossing Guards shall be trained in the laws and codes of the State of California and the City of Newark in which the Services (as defined below) are to be performed pertaining to general pedestrian safety in school crossing areas.

8. Crossing Guard Services (the "Services") shall be provided by the Contractor at the designated locations on all days in which school is in session in the area under City's jurisdiction. The

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

Contractor also agrees to maintain communication with the designated schools to maintain proper scheduling.

9. The Contractor shall provide all Crossing Guards with apparel by which they are readily visible and easily recognized as Crossing Guards. Such apparel shall be uniform for all persons performing the duties of Crossing Guards and shall be worn at all times while performing said duties. This apparel must be appropriate for weather conditions. The Contractor shall also provide all Crossing Guards with hand-held Stop signs and any other safety equipment which may be necessary.

10. **INSURANCE.** Contractor shall procure and maintain for the duration of this Agreement insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, subcontractors, or employees.

A. Verification of Coverage.

Contractor shall furnish City with original certificates of insurance and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. The certificates and endorsements for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by City before work commences.

Proof of Insurance shall be mailed to the following address or any subsequent address as may be directed in writing by the City Risk Manager:

CITY OF NEWARK
Attn: Risk Manager
37101 Newark Boulevard
Newark, CA 94560

City reserves the right to require and obtain complete, certified copies of all required insurance policies and endorsements at any time. Failure to exercise this right at any time shall not constitute a waiver of right to exercise later. Contractor shall immediately furnish City with certificates of renewal for each policy that is renewed during the term of this Agreement.

B. Minimum Scope of Insurance.

Coverage shall be at least as broad as:

1. Insurance Services Office Form Number CG 00 01 covering Commercial General Liability on an occurrence basis, including products and completed operations, property damage, bodily injury, and personal and advertising injury; and

2. Insurance Services Office Form Number CA 00 01 covering Code 1, (any auto), or Code 8 (hired) and Code 9 (non-owned) if Contractor has no owned autos; and

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

3. Workers' Compensation insurance as required by the State of California, with Statutory Limits, and Employer's Liability Insurance; and

C. Minimum Limits of Insurance.

It shall be a requirement under this Agreement that any available insurance proceeds broader than or in excess of the specified minimum Insurance coverage requirements and/or limits shall be available to the Additional Insured. Furthermore, the requirements for coverage and limits shall be (1) the minimum coverage and limits specified in this Agreement; or (2) the broader coverage and maximum limits of coverage of and Insurance policy or proceeds available to the named Insured; whichever is greater.

Contractor shall maintain limits no less than:

1. General Liability: (including products and completed operations, property damage, bodily injury, and personal and advertising injury)	**$2,000,000** per occurrence for bodily injury, personal injury, and property damage. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.
2. Automobile Liability:	**$1,000,000** per accident for bodily injury and property damage.
3. Employer's Liability:	**$1,000,000** per accident for bodily injury or disease.

D. Deductibles and Self-Insured Retentions.

Any deductibles or self-insured retentions must be declared to and approved by the City Risk Manager. At the option of City, either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects to City, its officers, officials, directors, employees, contractors, agents, and volunteers, or (2) Contractor shall provide a financial guarantee satisfactory to City guaranteeing payment of losses and related investigations, claim administration, and defense expenses in an amount specified by the City Risk Manager or designee.

E. Claims Made Policies.

For all "claims made" coverage, in the event that Contractor changes insurance carriers Contractor shall purchase "tail" coverage or otherwise provide for continuous coverage covering the Term of this Agreement and not less than five (5) years thereafter. Proof of such "tail" or other continuous coverage shall be required at any time that the Contractor changes to a new carrier.

F. Wasting Policies.

No policy required by this Section 10 shall include a "wasting" policy limit (ie. limit that is eroded by the cost of defense).

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

G. Remedies.

In addition to any other remedies City may have if Contractor fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time herein required, City may, at its sole option exercise any of the following remedies, which are alternatives to other remedies City may have and are not the exclusive remedy for Contractor's breach:

1. Obtain such insurance and deduct and retain the amount of the premiums for such insurance from any sums due under the Agreement;

2. Order Contractor to stop work under this Agreement or withhold any payment that becomes due to Contractor hereunder, or both stop work and withhold any payment, until Contractor demonstrates compliance with the requirements hereof; and/or

3. Terminate this Agreement.

H. Acceptability of Insurers.

Insurance is to be placed with insurers with a current A.M. Best's rating of no less than A:VII, unless otherwise acceptable to the City Risk Manager. All insurance companies providing coverage to Contractor shall be insurance organizations authorized by the Insurance Commissioner of the State of California to transact the business of insurance in the State of California.

I. Other Insurance Provisions.

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

1. Additional Insureds. City, its officers, officials, directors, employees and volunteers ("Additional Insureds") are to be covered as insureds with respect to liability arising out of work or operations performed by or on behalf of Contractor; including materials, parts or equipment furnished in connection with such work or operations.

2. Primary Coverage. For any claims related to Services, Contractor's insurance coverage shall be primary insurance as respects City, its officers, officials, directors, employees, and volunteers. Any insurance or self-insurance maintained by City, its officers, officials, directors, employees, or volunteers shall be excess of Contractor's insurance and shall not be contribute with it. Contractor's policy will not seek contribution from the City's insurance or self insurance.

3. Notice of Cancellation. Each insurance policy required above shall provide that coverage shall not be canceled during the term of this Agreement without notice to City.

4. Civil Code § 2782. Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under Subdivision (b) of Section 2782 of the California Civil Code.

5. Deductibles and Self-Insured Retentions (SIR). All deductibles and self-insured retentions must be disclosed to the City Risk Manager for approval and shall not reduce the limits of liability. Policies containing any SIR provision shall provide or be endorsed to provide that the SIR may be satisfied by either the named Insured or the City.

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

6. Subcontractors. Contractor shall include all subcontractors as insureds under its policies or shall require and verify separate certificates and endorsements have been obtained for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

7. Waiver of Subrogation. With respect to Workers' Compensation and Employer's Liability Coverage, the insurer shall agree to waive all rights of subrogation against City, its officers, officials, directors, employees, and volunteers for losses arising from work performed by Contractor for City.

8. Coverage is Material Element. Maintenance of proper insurance coverage in conformity with the provision of this Section 10 is a material element of this Agreement and failure to maintain or renew coverage or to provide evidence of coverage or renewal may be treated by City as a material breach of this Agreement.

9. Variation. The City Risk Manager may approve a variation in these insurance requirements upon a determination that the coverage, scope, limits, and form of such insurance are either not commercially available or that City's interests are otherwise fully protected. Any variation granted shall be done in writing and shall be made a part of this Agreement as Appendix "A".

11. **REPORTING DAMAGES.** If any damage (including but not limited to death, personal injury or property damage) occurs in connection with the performance of this Agreement, Contractor shall immediately notify the City Risk Manager's office by telephone at 510-578-4428, and Contractor shall promptly submit to the City's Risk Manager and the City's Administrator (see paragraph 18, hereinbelow) a written report (in a form acceptable to City) with the following information: (a) name(s) and address(es) of the injured or deceased person(s), (b) name(s) and address(es) of witnesses, (c) name(s) and address(es) of Contractor's insurance company(ies), and (d) a detailed description of the damage(s) and whether any City property was involved.

12. **INDEMNIFICATION/SAVE HARMLESS.** To the fullest extent permitted by law, the Contractor shall: (1) immediately defend, and (2) indemnify City, its, officers, officials, directors, employees, and volunteers from and against all liabilities regardless of nature or type arising out of or resulting from Contractor's performance of Services, or any negligent or wrongful act or omission of Contractor or Contractor's officers, employees, agents, or subcontractors. Liabilities subject to the duties to defend and indemnify include, without limitation all claims, losses, damages, penalties, fines, and judgments; associated investigation and administrative expenses; defense costs, including but not limited to reasonable attorneys' fees; court costs; and costs of alternative dispute resolution. If it is finally adjudicated that liability was caused by the comparative negligence or willful misconduct of an indemnified party, Contractor's indemnification obligation shall be reduced in proportion to the established comparative liability of the indemnified party.

The duty to defend is a separate and distinct obligation from Contractor's duty to indemnify. Contractor shall be obligated to defend, in all legal, equitable, administrative, or special proceedings, with counsel approved by City (such approval not to be unreasonably withheld or conditioned) immediately upon tender to Contractor of the claim in any form or at any stage of an action or proceeding, whether or not liability is established. An allegation or determination of comparative negligence or willful misconduct by an indemnified party does not relieve the Contractor from its separate and distinct obligation to defend City. The obligation to defend extends through final judgment, including exhaustion of any appeals. The defense obligation includes an obligation to provide independent defense counsel if Contractor asserts that liability is caused in whole or in part

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

by the negligence or willful misconduct of the indemnified party. If it is finally adjudicated that liability was caused by the sole negligence or sole willful misconduct of an indemnified party, Contractor may submit a claim to City for reimbursement of reasonable attorneys' fees and defense costs arising from the representation of such independent defense counsel.

The review, acceptance or approval of Contractor's work or work product by any indemnified party shall not affect, relieve or reduce Contractor's indemnification or defense obligations. This paragraph survives completion of Services or the termination of this contract. The provisions of this paragraph are not limited by and do not affect the provisions of this contract relating to insurance.

Contractor/Subcontractor's responsibility for such defense and indemnity obligations shall survive the termination or completion of this Agreement for the full period of time allowed by law. The defense and indemnification obligations of this Agreement are undertaken in addition to, and shall not in any way be limited by, the insurance obligations contained in this Agreement.

13. Either party shall have the right to terminate this Agreement by giving sixty (60) days written notice to the other party.

14. The Contractor shall not have the right to assign this Agreement to any other person or entity except with the prior written consent of the City.

15. The City agrees to pay the Contractor for the Services rendered pursuant to this Agreement the sum of Thirty-seven Dollars and Twenty-four Cents **($37.24)** per hour, per Crossing Guard during the term. Based on a minimum of eight (8) sites and upon a projected (4,320) hours of service the cost shall not exceed One Hundred Sixty Thousand, Eight Hundred and Seventy-seven Dollars ($160,877.00) per year, unless Contractor fails to perform service.

16. Payment is due within thirty (30) days of receipt of Contractor's properly prepared invoice.

17. Contractor may request a price increase during the term as a result of any legally-mandated increases in wages or benefits imposed in the state or municipality in which the Services are to be performed and to which Contractor's employees would be subject. Contractor shall provide City with 60 days-notice of its request to increase pricing. City agrees to review and respond to said notice within 30 days of receipt. In no event shall the "not to exceed" amount of this Agreement exceed One Hundred Sixty Thousand, Eight Hundred and Seventy-seven Dollars ($160,877.00) per year unless amended pursuant to the terms of this Agreement.

18. The City shall have an option to renew this Agreement. In the event this Agreement is extended beyond the end of the term set forth above, the compensation and terms for the Services shall be established by mutual consent of both parties.

19. This Agreement constitutes the complete and exclusive statement of the agreement among the parties with respect to the subject matter hereof and supersedes all prior written or oral statements among the parties, including any prior statements, warranties, or representations. This Agreement is binding upon and will inure to the benefit of the parties hereto and their respective heirs, administrators, executors, successors, and assigns. Each party hereto agrees that this Agreement will be governed by the law of the state in which the Services are to be performed, without regard to its conflicts of law provisions. Any amendments, modifications, or alterations to this Agreement must be in writing and

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

signed by all parties. There will be no presumption against any party on the ground that such party was responsible for preparing this Agreement or any part of it. Each provision of this Agreement is severable from the other provisions. If any provision of this Agreement is declared invalid or contrary to existing law, the inoperability of that provision will have no effect on the remaining provisions of the Agreement which will continue in full force and effect.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year written below.

CITY

City of Newark

DocuSigned by:
By David Benoun
075767B2C2304C4...
Signature

David Benoun NEWARK CITY MANAGER
Print Name and Title

Date 8/15/2024

CONTRACTOR

All City Management Services, Inc.

Signed by:
By Demetra Farwell
9B16161324E0466...
D. Farwell, Corporate Secretary

Date 8/15/2024

Docusign Envelope ID: F2BA2833-4AF8-4B62-B0F4-A149E74FB664

City of Newark

Newark Police Department

37077 Newark Boulevard
Newark, CA 94560

DATE: **August 6, 2024**

TO: **David Benoun, City Manager**

VIA: **Jonathan Arguello, Chief of Police**

FROM: **Jolie Macias, Police Captain**

SUBJECT: **All City Management Services (ACMS) Agreement**

The City of Newark has maintained an agreement with All City Management Services (ACMS) to provide school crossing guard services at Newark Unified School District (NUSD) schools since August 2011. In 2023, Police Department staff issued a public Request for Proposals and only received one proposal for crossing guard services. ACMS was selected to continue as the provider of crossing guard services for NUSD.

On July 13, 2023, the city approved an agreement to extend the school crossing guard service through June 30, 2024. The NUSD 2023-2024 school year agreement with ACMS commenced on August 9, 2023, and ended on June 30, 2024. The NUSD 2024-2025 school year will begin on August 8, 2024, and go on through May 29, 2025. The proposed ACMS agreement indicates that it will begin on or around August 1, 2024, and will end on June 30, 2025, with a do not exceed amount of $160,877. ACMS would be responsible for providing complete day-to-day crossing guard services for 180 school days.

Funding for this service agreement in the amount of $165,000 was budgeted for fiscal year 2024-2025 in the Police Department budget for the purpose of providing crossing guard services to the Newark Unified School District:

110.30.030.301.6221	Crossing Guard Services	$165,000

RECOMMENDATION

Staff recommends the City Manager sign the All City Management Services Agreement for the

fiscal year 2024-2025.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby authorize the acceptance of an agreement with All City Management Services for fiscal year 2024-2025.

DocuSigned by:
David Benoun
0767675E0E0E484...

David J. Benoun, City Manager

David Benoun

By

8/15/2024

Date

DocuSign

Certificate Of Completion

Envelope Id: F2BA28334AF84B62B0F4A149E74FB664
Status: Completed
Subject: Contract #23056 - CROSSING GUARD SERVICES - ALL CITY MANAGEMENT SERVICES, INC
Source Envelope:
Document Pages: 9
Signatures: 3
Certificate Pages: 5
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC-08:00) Pacific Time (US & Canada)

Envelope Originator:
Kamini Kumar
37101 Newark Boulevard
Newark, CA 94560
kamini.kumar@newark.org
IP Address: 206.128.122.185

Record Tracking

Status: Original
8/14/2024 3:35:47 PM
Holder: Kamini Kumar
kamini.kumar@newark.org
Location: DocuSign

Signer Events	Signature	Timestamp
Demetra Farwell demetra@thecrossingguardcompany.com Corporate Secretary Security Level: Email, Account Authentication (None)	Signed by: Demetra Farwell 9B16161324E0466...	Sent: 8/14/2024 3:43:48 PM Viewed: 8/15/2024 8:52:59 AM Signed: 8/15/2024 8:53:43 AM
	Signature Adoption: Pre-selected Style Using IP Address: 98.153.194.10	
Electronic Record and Signature Disclosure: Accepted: 8/15/2024 8:52:59 AM ID: be85efc6-eab0-4024-8dd5-43bb94b0f04f		
David Benoun david.benoun@newark.org NEWARK CITY MANAGER David Benoun Security Level: Email, Account Authentication (None)	DocuSigned by: David Benoun 075767B2C2304C4...	Sent: 8/15/2024 8:53:46 AM Viewed: 8/15/2024 8:55:50 AM Signed: 8/15/2024 8:55:57 AM
	Signature Adoption: Pre-selected Style Using IP Address: 206.128.122.185	
Electronic Record and Signature Disclosure: Accepted: 8/15/2024 8:55:49 AM ID: 53c97f83-7fc0-4ec2-b8aa-4ca43a111221		

In Person Signer Events	Signature	Timestamp
Editor Delivery Events	**Status**	**Timestamp**
Agent Delivery Events	**Status**	**Timestamp**
Intermediary Delivery Events	**Status**	**Timestamp**
Certified Delivery Events	**Status**	**Timestamp**
Carbon Copy Events	**Status**	**Timestamp**
Kristopher Kokotaylo kristopher.kokotaylo@redwoodpubliclaw.com City Attorney Security Level: Email, Account Authentication (None)	COPIED	Sent: 8/15/2024 8:53:44 AM Viewed: 8/15/2024 11:33:45 AM
Electronic Record and Signature Disclosure: Accepted: 8/15/2024 11:32:05 AM ID: 03c4eb34-dd86-4f94-a8a5-c09bd1986d45		

Carbon Copy Events	Status	Timestamp
Sheila Harrington sheila.harrington@newark.org City Clerk City of Newark Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/15/2024 8:55:58 AM
Kamini Kumar kamini.kumar@newark.org Administrative Analyst City of Newark Police Department Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/15/2024 8:56:00 AM Resent: 8/15/2024 8:56:05 AM
Kathy Slafter kathy.slafter@newark.org Executive Assistant/Deputy City Clerk City of Newark Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/15/2024 8:56:01 AM
CLAUDIA THAN cthan@thecrossingguardcompany.com Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Not Offered via DocuSign	COPIED	Sent: 8/15/2024 8:56:02 AM Viewed: 8/15/2024 10:30:11 AM
Jonathan Arguello jonathan.arguello@newark.org Chief of Police Security Level: Email, Account Authentication (None) **Electronic Record and Signature Disclosure:** Accepted: 11/21/2023 12:02:18 PM ID: 27a572a5-0185-412b-83d3-a99c62e91160	COPIED	Sent: 8/15/2024 8:56:03 AM

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	8/14/2024 3:43:48 PM
Certified Delivered	Security Checked	8/15/2024 8:55:50 AM
Signing Complete	Security Checked	8/15/2024 8:55:57 AM
Completed	Security Checked	8/15/2024 8:56:03 AM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

City of Newark **MEMO**

DATE: August 14, 2024

TO: David Benoun, City Manager

VIA: HY Howard Young, Public Works Director (ext. 4286)
DC Diana Cangco, Acting City Engineer (ext. 4589)

FROM: AT Alex Tat, Senior Civil Engineer (ext. 4041)

SUBJECT: Acceptance of work with VSS International, Inc., for Cherry Street Class IV Separated Bikeways, Project 1254

On April 13, 2023, the City of Newark awarded a contract to VSS International, Inc., for Cherry Street Class IV Separated Bikeways, Project 1254. The project upgraded existing Class II bike lanes to Class IV Separated Bikeways in both directions on Cherry Street between Central Avenue and Stevenson Boulevard to introduce a vertical separation element between the bike lanes and traffic lanes to minimize interactions between bicyclist and vehicles. In addition, safety improvements were made to provide high visibility crosswalks, high visibility "green" pavement markings, bicycle detection loops at each signalized intersection on Cherry Street and upgraded a total of twelve (12) curb ramps to meet current ADA standards along the project limits. This project added key safety improvements to a vital link in Newark's bicycle network.

This project was completed within the original budget using a combination of Local Transportation Sales Tax Funds (Measures B funds), Transportation for Clean Air (TFCA) funds, Senate Bill 1 (SB1) Road Repair and Accountability Act (RMRA) funds and Transportation Impact Fee funds.

Recommendation

It is recommended that the City Manager accept the work with VSS International, Inc., for Cherry Street Class IV Separated Bikeways, Project 1254.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby accept the work with VSS International, Inc., for Cherry Street Class IV Separated Bikeways, Project 1254.

8-20-24

David J. Benoun, City Manager

By

NEWARK

STAFF REPORT
Item D. 7.

DATE	04/13/2023
TO	Honorable Mayor and City Council Members
FROM	Jayson Imai, Assistant City Engineer
SUBJECT	Approval of plans and specifications and adopt a resolution accepting the bid and awarding the contract for the Base Bid and Additive Alternate Bid No. 1 to VSS International, Inc. for Cherry Street Class IV Separated Bikeways, Project 1254 and amending the 2022-2024 Biennial Budget for Fiscal Year 2023; Exempt from CEQA Review per CEQA Guidelines Section 15301

SUMMARY AND RECOMMENDATION

Bids for Cherry Street Class IV Separated Bikeways, Project No. 1254 were opened on March 21, 2023. The low monetary bidder, VSS International, Inc., provided a responsive bid, is experienced in this type of project and is a responsible contractor. Staff recommends that the City Council, by motion, approve the plans and specifications and by resolution, accept the bid, and award the contract for the Base Bid and Additive Alternate Bid No. 1 to VSS International, Inc. in the amount of $1,630,303.32 for Cherry Street Class IV Separated Bikeways, Project No. 1254.

Staff also recommends including an additional $169,696.68 in construction contingency, bringing the recommended allocation for the project to $1,800,000 and amending the 2022-2024 Biennial Budget and Capital Improvement Plan for FY 2023.

BACKGROUND

In January 2021, City Council approved the submittal of an Alameda County Transportation Commission (ACTC) 2022 Comprehensive Investment Plan application for the Cherry Street Class IV Separated Bikeway Project. The Comprehensive Investment Plan (CIP) is ACTC's near-term strategic planning and programming document through which administered fund sources are programmed through a consolidated process to maximize investments towards critical transportation infrastructure and program operations needs that are essential for developing and maintaining the county's transportation system.

In July 2021, ACTC programmed $453,000 in Measure B and Transportation Fund for Clean Air (TFCA) funds as part of its 2022 CIP to the City of Newark for the Cherry Street Class IV Separated Bikeway Project. Subsequently, in October 2021, City Council approved the allocation of the $453,000 of Measure B and TFCA funds to Cherry Street Class IV Separated Bikeways, Project No. 1254 and authorized the City Manager to execute a Project Funding Agreement with ACTC.

Engineer's Estimate	$1,499,852.50	$112,000.00	$1,611,852.50

* - corrected for mathematical errors

As stated in the Project Specifications, determination of the low monetary bidder was based on the Base Bid plus Additive Alternate Bid No. 1. The low monetary bidder, VSS International, Inc., provided a responsive bid, is experienced in this type of project and is a responsible contractor.

Additive Alternate Bid

The project included an Additive Alternate Bid Item for the upgrading of existing curb ramps within the project limits to comply with current ADA standards. Although not included in the City's original ACTC 2022 CIP application, upgrading of curb ramps was added to the Project scope during design development to maximize the use of project funding but is otherwise not a required part of the project.

Analysis of the bids received for Additive Alternate Bid No. 1 revealed that the average bid price to reconstruct curb ramps ($10,948) is now 60% less than the average bid price for each curb ramp in August 2022 ($27,461.46). Based on the bids submitted by VSS International, Inc., staff recommends that the City Council add Additive Alternate Bid Item No. 1 to the construction contract, bringing the total contract amount awarded to $1,630,303.32. As detailed below, there are sufficient funds budgeted for this project to include the recommended Additive Alternate Bid Item.

FISCAL IMPACT

The addition of Additive Alternate Bid Item No. 1 to VSS International's Base Bid of $1,492,487.32 would bring the total construction contract amount to $1,630,303.32. Staff recommends including an additional $169,696.68 in construction contingency, equivalent to approximately ten percent of the contract amount, to account for any unanticipated construction costs. The added contingency would bring the recommended allocation for the project to $1,800,000.

Per the Project Funding Agreement with ACTC for Cherry Street Class IV Separated Bikeways, Project No. 1254 approved by City Council in October 2021, the City was awarded $323,000 of Measure B Discretionary Funding (Fund 288) and $130,000 of Transportation for Clean Air (TFCA) funds (Fund 289) totaling $453,000 of ACTC Administered Funds allocated to the project. Staff recommends using a combination of $152,000 of Senate Bill 1 (SB1) Road Repair and Accountability Act (RMRA) funds previously allocated to the project (Resolution No. 11268) and $1,195,000 of Transportation Impact Fee funds for the remaining allocation balance of $1,347,000.

Transportation Impact Fees are collected with each new residential, commercial, and industrial project and must be used to fund the construction of transportation improvements identified in the City of Newark Transportation Impact Fee Nexus Study.

RESOLUTION NO. 11,485

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK ACCEPTING THE BID AND AWARDING THE CONTRACT FOR THE BASE BID PLUS ADDITIVE ALTERNATE BID NO. 1 TO VSS INTERNATIONAL, INC. FOR CHERRY STREET CLASS IV SEPARATED BIKEWAYS, PROJECT 1254 AND AMENDMENT OF THE 2022-2024 BIENNIAL BIDGET AND CAPITAL IMPROVEMENT PLAN

WHEREAS, the Public Works Department invited sealed bids for the construction of public improvements for Cherry Street Class IV Separated Bikeways, Project No. 1254 (the "Project"); and

WHEREAS, the City has upon due notice, received a total of three bids for the Project that were reviewed by staff for responsiveness and responsibility; and

WHEREAS, as stated in the Project Specifications, determination of the low monetary bidder was based on the Base Bid plus Additive Alternate Bid No. 1; and

WHEREAS, VSS International, Inc. was determined by staff to be the lowest responsive and responsible bidder with a Base Bid plus Additive Alternate Bid No. 1 of $1,630,303.32; and

WHEREAS, staff recommends, and the City Council seeks, to add Additive Alternate Bid Item No. 1 to the construction contract; and

WHEREAS, $453,000 in Alameda CTC administered funds ($323,000 Measure B Fund 289 plus $130,000 TFCA Fund 289) and $152,000 in SB1 RMRA funds (Fund 202) were previously allocated to this project pursuant to Resolution No. 11,268; and

WHEREAS, staff recommends allocating an additional $169,696.68 in construction contingency, which would bring the total allocation for the Project to $1,800,000.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Newark does hereby find that VSS International, Inc. is the lowest responsive and responsible bidder for Cherry Street Class IV Separated Bikeways, Project No. 1254, in the City of Newark.

BE IT FURTHER RESOLVED that the City Council does hereby accept said bid of said company and does hereby authorize the City Manager to execute an agreement with VSS International Inc., in a form approved by the City Attorney, for the construction of Cherry Street Class IV Separated Bikeways, Project No. 1254, according to the plans, specifications, and terms of said bid for the Base Bid plus Additive Alternate Bid No. 1 in an amount not to exceed $1,630,303.32

BE IT FURTHER RESOLVED that the City Council does hereby approve a construction contingency in the amount of $169,696.68, resulting in a total allocation of $1,800,000 for the Project and authorizes the City Manager, or their designee, to execute any change orders necessary to account for unanticipated construction costs within the total allocation for the Project.

I HEREBY CERTIFY the foregoing resolution was introduced at a regular meeting of the City Council of the City of Newark held on April 13, 2023, by Council Member Bucci who moved its adoption and passage, which motion was carried after being duly seconded, and passed by the following vote:

AYES:	Council Members Bucci, Jorgens, Vice Mayor Collazo, and Mayor Hannon
NOES:	None
ABSENT:	Council Member Freitas
SECONDED:	Vice Mayor Collazo

APPROVED:

s/MICHAEL K. HANNON
Mayor

ATTEST:

s/KATHLEEN L. SLAFTER
Deputy City Clerk

APPROVED AS TO FORM:

s/KRISTOPHER J. KOKOTAYLO
City Attorney

MEMORANDUM

Engineering Division | City of Newark

DATE: August 26, 2024

TO: Kathy Slafter, Executive Assistant

FROM: Alysia Reyes, Junior Engineer AR

SUBJECT: PROJECT ACCEPTANCE MEMO FOR FY2022-2023 CURB, GUTTER, AND SIDEWALK REPLACEMENT, PROJECT 1302

On September 13, 2023, the City of Newark renewed the contract with Rosas Brothers Construction, for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302. Construction has now concluded and is awaiting acceptance.

Please submit the following memo to the City Manager for signatures.

Thank you.

City of Newark **MEMO**

DATE: August 14, 2024

TO: David Benoun, City Manager

VIA: Howard Young, Public Works Director (ext. 4286) HY
Diana Cangco, Acting City Engineer (ext. 4589) DC

FROM: Alysia Reyes, Junior Engineer (ext. 4293) AR

SUBJECT: Acceptance of work with Rosas Brothers Construction, for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302

On February 11, 2021, the City of Newark awarded a contract to Rosas Brothers Construction for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257 with the option to renew the contract annually for up to three additional one-year terms. On September 13, 2023, the City of Newark renewed the contract with Rosas Brothers Construction, for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302. The project replaced damaged sidewalk, curb, and gutter, and completed other concrete repairs at various locations throughout the City. In addition, the project upgraded curb ramps to meet current ADA standards for the streets included in the 2023-2024 Asphalt Concrete Street Overlay Program.

This project was completed within the original budget using the Gas Tax Funds.

Recommendation

It is recommended that the City Manager accept the work with Rosas Brothers Construction, for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby accept the work with Rosas Brothers Construction, for FY 2022-2023 Curb, Gutter and Sidewalk Replacement, Project 1302.

8.27.24

David J. Benoun, City Manager

By

RESOLUTION NO. 11,169

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK ACCEPTING THE BID AND AWARDING THE CONTRACT FOR THE TOTAL BID TO ROSAS BROTHERS CONSTRUCTION FOR 2021 CURB, GUTTER, AND SIDEWALK REPLACEMENT, PROJECT 1257

WHEREAS, the Public Works Department invited sealed bids for the construction of public improvements for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257 (the "Project"); and

WHEREAS, the City has, upon due notice, received a total of eleven bids for the Project that were reviewed by staff for responsiveness and responsibility; and

WHEREAS, Rosas Brothers Construction was determined to be the lowest responsible bidder with a total bid of $337,150; and

WHEREAS, staff recommends allocating an additional $62,850 in construction contingency, which would bring the total allocation for the Project to $400,000; and

WHEREAS, contract specifications allow for renewal of the contract annually for up to three (3) additional years if it is agreeable to both the City and Rosas Brothers Construction.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Newark does hereby find that Rosas Brothers Construction was the lowest responsible bidder for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257, in the City of Newark.

BE IT FURTHER RESOLVED that the City Council does hereby accept said bid of said company and does hereby authorize the City Manager of the City of Newark to execute an agreement with said company, in a form approved by the City of Attorney, for the construction of 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257, according to the plans, specifications, and terms of said bid in an amount not to exceed $337,150.

BE IT FURTHER RESOLVED that the City Council does hereby approve a construction contingency in the amount of $62,850, resulting in a total allocation of $400,000 for the Project, with funding through Measure B and Measure BB Direct Local Distribution funds and State Highway Users Tax funds (HUTA), distributed as follows:

Description	Expenditure Accounts	Amount
Measure B – Bike/Ped	282.90.091.910.6221.CIP001257.FY2021	$ 200,000
Measure BB – Bike/Ped	285.90.091.910.6221.CIP.001257.FY2021	$ 92,000
Measure B – Paratransit	283.90.091.910.6221.CIP001257.FY2021	$ 106,000
HUTA	201.90.091.910.6221.CIP001257.FY2021	$ 2,000

I HEREBY CERTIFY the foregoing resolution was introduced at a regular meeting of the City Council of the City of Newark held on February 11, 2021, by Vice Mayor Bucci who moved its adoption and passage, which motion was carried after being duly seconded, and passed by the following vote:

AYES:	Council Members Collazo, Freitas, Hannon, Vice Mayor Bucci and Mayor Nagy
NOES:	None
ABSENT:	None
SECONDED:	Council Member Collazo

APPROVED:

s/ALAN L. NAGY
Mayor

ATTEST:

s/SHEILA HARRINGTON
City Clerk

APPROVED AS TO FORM:

s/KRISTOPHER J. KOKOTAYLO
Interim City Attorney

Resolution No. 11,169

MEMORANDUM

Engineering Division | City of Newark

DATE: August 26, 2024

TO: Kathy Slafter, Executive Assistant

FROM: Alysia Reyes, Junior Engineer AR

SUBJECT: PROJECT ACCEPTANCE MEMO FOR FY2023-2024 CURB, GUTTER, AND SIDEWALK REPLACEMENT, PROJECT 1346

On February 1, 2024, the City of Newark renewed the contract with Rosas Brothers Construction, for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346. Construction has now concluded and is awaiting acceptance.

Please submit the following memo to the City Manager for signatures.

Thank you.

City of Newark **MEMO**

DATE: August 26, 2024

TO: David Benoun, City Manager

VIA: Howard Young, Public Works Director (ext. 4286) HY
Diana Cangco, Acting City Engineer (ext. 4589)

FROM: Alysia Reyes, Junior Engineer (ext. 4293)

SUBJECT: Acceptance of work with Rosas Brothers Construction, for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346

On February 11, 2021, the City of Newark awarded a contract to Rosas Brothers Construction for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257 with the option to renew the contract annually for up to three additional one-year terms. On February 1, 2024, the City of Newark renewed the contract with Rosas Brothers Construction, for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346. The project replaced damaged sidewalk, curb, and gutter, and completed other concrete repairs at various locations throughout the City.

This project was completed within the original budget using the Gas Tax Funds.

Recommendation

It is recommended that the City Manager accept the work with Rosas Brothers Construction, for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby accept the work with Rosas Brothers Construction, for FY 2023-2024 Curb, Gutter and Sidewalk Replacement, Project 1346.

8-27-24

David J. Benoun, City Manager

By

RESOLUTION NO. 11,169

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK ACCEPTING THE BID AND AWARDING THE CONTRACT FOR THE TOTAL BID TO ROSAS BROTHERS CONSTRUCTION FOR 2021 CURB, GUTTER, AND SIDEWALK REPLACEMENT, PROJECT 1257

WHEREAS, the Public Works Department invited sealed bids for the construction of public improvements for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257 (the "Project"); and

WHEREAS, the City has, upon due notice, received a total of eleven bids for the Project that were reviewed by staff for responsiveness and responsibility; and

WHEREAS, Rosas Brothers Construction was determined to be the lowest responsible bidder with a total bid of $337,150; and

WHEREAS, staff recommends allocating an additional $62,850 in construction contingency, which would bring the total allocation for the Project to $400,000; and

WHEREAS, contract specifications allow for renewal of the contract annually for up to three (3) additional years if it is agreeable to both the City and Rosas Brothers Construction.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Newark does hereby find that Rosas Brothers Construction was the lowest responsible bidder for 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257, in the City of Newark.

BE IT FURTHER RESOLVED that the City Council does hereby accept said bid of said company and does hereby authorize the City Manager of the City of Newark to execute an agreement with said company, in a form approved by the City of Attorney, for the construction of 2021 Curb, Gutter, and Sidewalk Replacement, Project 1257, according to the plans, specifications, and terms of said bid in an amount not to exceed $337,150.

BE IT FURTHER RESOLVED that the City Council does hereby approve a construction contingency in the amount of $62,850, resulting in a total allocation of $400,000 for the Project, with funding through Measure B and Measure BB Direct Local Distribution funds and State Highway Users Tax funds (HUTA), distributed as follows:

Description	Expenditure Accounts	Amount
Measure B – Bike/Ped	282.90.091.910.6221.CIP001257.FY2021	$ 200,000
Measure BB – Bike/Ped	285.90.091.910.6221.CIP.001257.FY2021	$ 92,000
Measure B – Paratransit	283.90.091.910.6221.CIP001257.FY2021	$ 106,000
HUTA	201.90.091.910.6221.CIP001257.FY2021	$ 2,000

I HEREBY CERTIFY the foregoing resolution was introduced at a regular meeting of the City Council of the City of Newark held on February 11, 2021, by Vice Mayor Bucci who moved its adoption and passage, which motion was carried after being duly seconded, and passed by the following vote:

AYES:	Council Members Collazo, Freitas, Hannon, Vice Mayor Bucci and Mayor Nagy
NOES:	None
ABSENT:	None
SECONDED:	Council Member Collazo

APPROVED:

s/ALAN L. NAGY
Mayor

ATTEST:

s/SHEILA HARRINGTON
City Clerk

APPROVED AS TO FORM:

s/KRISTOPHER J. KOKOTAYLO
Interim City Attorney

Resolution No. 11,169

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

City of Newark

Newark Police Department

37077 Newark Boulevard
Newark, CA 94560

DATE: August 13, 2024

TO: David Benoun, City Manager

VIA: Jonathan Arguello, Police Chief

CC: Krysten Lee, Finance Director

FROM: Jolie Macias, Police Captain

SUBJECT: **Request for the City Manager to approve and enter into an agreement with sole-source vendor Axon Enterprise, Inc. for the purchase of in-car cameras for patrol vehicles with automated license plate readers in the amount not to exceed $198,328**

SUMMARY

The City of Newark was awarded $986,444.00 in grant funding from the Board of State and Community Corrections (BSCC) to assist the City in addressing the increase in motor vehicle and motor vehicle accessory theft, primarily catalytic converters. The Newark Vehicle and Accessory Theft Prevention Program (NVATPP) leverages technology and community partnerships to provide comprehensive, evidence-based public safety services to prevent and deter vehicle and accessory theft. To accomplish program objectives, in-car cameras equipped with automated license plate readers (ALPR) are a proposed addition to the current ALPR program. Permissible uses of the grant include the purchase of ALPR technology equipment and services to support strategies for preventing or responding to crime. A five-year agreement is proposed for Axon Fleet 3 to fall under the provisions set forth in the existing Master Services and Purchasing Agreement for the Axon Officer Safety Plan 10 (OSP 10), to include comprehensive around the clock customer service support, 5-year warranty, product training, and the retention of all hardware at the end of contract. All Fleet 3 units will be fully replaced and upgraded to the latest Axon in-car camera technology during year 5 of the contract.

BACKGROUND

The City of Newark currently has fixed Flock Safety brand ALPR cameras located at City entrances and exits. Newark has seen great success with the addition of ALPR cameras at these ingress and egress points of the city and recently added six additional fixed ALPR cameras to the southern city border. These additional cameras were obtained through BSCC grant funds under the NVATTP program. Both motor vehicle and catalytic converter thefts occur in residential and commercial areas. From 2019 to 2022, 45% of catalytic converter thefts occurred in commercial/industrial areas and 55% in residential areas, with an increase to 78% in residential areas for the first half of 2023. From 2019 to 2021, stolen vehicle thefts occurred primarily in commercial/ industrial areas but shifted to 55% in

residential areas in 2022. With the upward trend of vehicle and catalytic converter thefts occurring more frequently in residential areas, there is a need for mobile in-car cameras with ALPR to patrol all areas of the city to include residential streets.

In-car camera systems for law enforcement have been an industry standard for progressive police agencies worldwide. The Newark Police Department has utilized vehicle mounted ALPR systems since 2009 and mobile audio video recording systems using videotape technology since 1999. The original ALPR vendor went out of business in 2011, and the original three vehicle-mounted ALPRs were replaced in 2013 by 3M Corporation. The vehicle-mounted ALPR cameras and mobile audio video systems are no longer viable. The International Association of Chiefs of Police (IACP) conducted a worldwide study in 2003 on the impacts of in-car camera systems on law enforcement and the communities they serve. The study's primary results showed that in-car camera systems improve officer safety and agency accountability, reduce city liability, enhance officer performance and professionalism, improve community and media perceptions, and assist in criminal prosecutions and administrative investigations.

Currently, the Newark's Police Department Vehicle Pursuit Policy does not authorize the pursuit of vehicles driven by individuals suspected of property crimes such as theft or motor vehicle theft. There have been many instances where officers interrupt these types of crimes and cannot pursue them as the suspect vehicle flees the scene or, more likely, flee the city altogether. The large Newark commercial shopping centers are adjacent to major arterial roadways, allowing prospective offenders to enter an area, engage in criminal activities, and leave the area quickly. Newark Police Department has seen these issues, plus the use of vehicles without license plates, paper plates, or cold-plated vehicles, where a stolen license plate is used in the commission of a crime. The cold plated vehicles are often stolen and used to camouflage a stolen vehicle and to bypass automated license plate reader technology. The in-car cameras are able to capture valuable evidentiary information of vehicles and suspects for quality investigative follow up.

DISCUSSION/ANALYSIS

Newark Police Department staff desire a technological solution that integrates with the recently acquired Axon Officer Safety Plan (OSP) 10 Premium package of body worn cameras, tasers, and evidence storage. The Axon Fleet in-car camera with ALPR system seamlessly integrates with the recently acquired OSP plan, which also includes hardware, software, accessories, training, customer support, equipment refreshes, and warranties. Having a single manufacturer for multiple technologies has the added benefit of providing officers with systems that look and feel similar while integrating with one another.

Axon Enterprise, Inc. is a company that develops technology and products for law enforcement, including personal body-worn cameras, in-car video cameras with automated license plate reader technology, conductive energy devices (CED / Taser), digital evidence storage, and comprehensive digital evidence management software. Axon was chosen as a sole-source vendor based on several proprietary software and hardware components, such as the ability to trigger a body camera with a Taser deployment, integration with Newark PD's current Flock Safety ALPR software, and the interoperability with all Alameda County District Attorney's Offices using Evidence.com accounts to accept video evidence from agencies within Alameda County. Patrol cars equipped with Axon Fleet in-

car cameras can be set to activate when a Taser or firearm is removed from an officer's holster.

A Cradlepoint R1900 modem kit was identified by the City of Newark's Information System team as the best option for the installation of the Axon Fleet 3 units. The officer's body worn cameras pair wirelessly through the router connection to upload footage wirelessly. Video captured from the in-car dual view cameras also automatically uploads to the Axon Evidence unlimited data storage solution purchased with the OSP 10 contract. Lastly, it is important to emphasize the integration of the existing Flock Safety ALPR software into the Axon environment. Officers can use the comprehensive Flock Safety investigative software to search for Axon ALPR plate reads and all investigative plate reads can be uploaded directly into Axon Evidence.

This contract would provide for (13) Axon Fleet 3 in-car camera systems so that marked patrol vehicles in the Police Department's fleet would have up-to-date and functioning cameras. The systems would be both forward-facing and rear-seat-facing with 4K ALPR covering three lanes of traffic. The supplied camera hardware will be updated once during the contract to ensure that officers have the most up-to-date system. The in-car camera systems will also automatically sync to the body cameras worn by officers allowing for seamless activations of both systems to increase the recorded field of vision for each activation.

The City's Purchasing Rules and Regulations require a formal bid process for any purchases of $50,000 or more, with certain allowable exceptions. Pursuant to Newark Municipal Code Section 3.04.080(B)(1), the City is not required to conduct formal bidding when the City's requirement can be met solely by a single patented article or process or provider. Axon was chosen as a sole-source vendor based on a several proprietary software and hardware components, such as the interoperability with all Axon OSP 10 products currently in use by Newark Police Department, the integration with Newark PD's current Flock Safety Automated License Plate Reader software, and interoperability with all Alameda County District Attorney's Offices using Evidence.com accounts to accept video evidence from agencies within Alameda County. Axon is the only company identified by staff that offers a complete solution with products that seamlessly interact with one another.

FISCAL IMPACT

Pursuant to Newark Municipal Code Section 3.04.080(B)(1), the City is not required to conduct formal bidding when the City's requirements can be met solely by a single patented provider. City Council approval is required for contracts that exceed $75,000.

Axon Fleet in-car cameras are considered a hardware subscription service and therefore will be reimbursed from a budget line item described as Consultant/Professional Services. Resolution 11568 previously approved an amendment to the 2022-2024 Biennial Budget and Capital Improvement Program as follows:

FR:	234.30.031.310.4792.BSCC.ORT	BSCC Grant Award	$986,444
TO:	234.30.031.310.6220.BSCC.ORT	Consultant/Professional Services	$438,200

The Axon Master Services and Purchasing Agreement for OSP 10, which was approved by the Newark City Council on May 9, 2024, included all terms for Axon Fleet 3. If approved, the attached quote

includes a reference to the provisions and statement of work agreed to original agreement Q531965-45400.95KP.

RECOMMENDATION

Staff recommends that the City Manager approve an agreement with Axon Enterprise, Inc. with sole-source findings and issue a purchase order for the purchase of Axon Fleet in-car cameras with ALPR hardware, software, and service package in an amount not to exceed $198,328 as a part of the Newark Vehicle and Accessory Theft Prevention Program.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby approve an agreement with Axon Enterprise, Inc. with sole-source findings and issue a purchase order for the purchase of Axon Fleet in-car cameras with ALPR hardware, software, and service package in an amount not to exceed $198,328 as a part of the Newark Vehicle and Accessory Theft Prevention Program.

DocuSigned by:
David Benoun

David J. Benoun, City Manager

David Benoun

By

8/28/2024

Date

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

Axon Enterprise, Inc.
17800 N 85th St.
Scottsdale, Arizona 85255
United States
VAT: 86-0741227
Domestic: (800) 978-2737
International: +1.800.978.2737

Q-531709-45517.894KP

Issued: 08/13/2024
Quote Expiration: 08/30/2024
Estimated Contract Start Date: 10/01/2024

Account Number: 328024
Payment Terms: N30
Delivery Method:

SHIP TO	BILL TO
Newark Police Department - CA 37707 Newark Blvd Newark, CA 94560-3727 USA	Newark Police Department - CA 37077 Newark Blvd Newark CA 94560-3184 USA Email:

SALES REPRESENTATIVE	PRIMARY CONTACT
Kyle Panasewicz Phone: +1 4803294734 Email: kylep@axon.com Fax: (480) 905-2071	Jolie Macias Phone: (510) 578-4921 Email: jolie.macias@newark.org Fax: (510) 790-7277

Quote Summary

Program Length	60 Months
TOTAL COST	$191,803.80
ESTIMATED TOTAL W/ TAX	$198,327.33

Discount Summary

Average Savings Per Year	$15,214.68
TOTAL SAVINGS	$76,073.40

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

Payment Summary

Date	Subtotal	Tax	Total
Sep 2024	$63,934.60	$2,174.51	$66,109.11
Sep 2025	$63,934.60	$2,174.51	$66,109.11
Sep 2026	$63,934.60	$2,174.51	$66,109.11
Total	**$191,803.80**	**$6,523.53**	**$198,327.33**

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

Quote Unbundled Price:	**$267,877.20**
Quote List Price:	**$246,037.20**
Quote Subtotal:	**$191,803.80**

Pricing

All deliverables are detailed in Delivery Schedules section lower in proposal

Item	Description	Qty	Term	Unbundled	List Price	Net Price	Subtotal	Tax	Total
Program									
Fleet3A	Fleet 3 Advanced	13	60	$282.57	$254.57	$185.66	$144,814.80	$1,815.67	$146,630.47
A la Carte Hardware									
71210	AXON FLEET - DOOR TRIGGER HARDWARE - US	26			$18.60	$0.00	$0.00	$0.00	$0.00
100807	AXON FLEET 3 - HUB RADAR CABLE KIT - STALKER DSR DUAL SL	3			$90.00	$90.00	$270.00	$29.03	$299.03
R1900Kit	CRADLEPOINT R1900 SINGLE MODEM KIT	13	60		$3,363.00	$56.05	$43,719.00	$4,678.83	$48,397.83
A la Carte Services									
100159	AXON FLEET 3 - SERVICES - ALPR API INTEGRATION	1			$3,000.00	$3,000.00	$3,000.00	$0.00	$3,000.00
Total							**$191,803.80**	**$6,523.53**	**$198,327.33**

Delivery Schedule

Hardware

Bundle	Item	Description	QTY	Shipping Location	Estimated Delivery Date
CRADLEPOINT R1900 SINGLE MODEM KIT	100146	AXON FLEET - CRADLEPOINT R1900-5GB-GA+5YR NETCLOUD	13		09/01/2024
CRADLEPOINT R1900 SINGLE MODEM KIT	71203	AXON FLEET - AIRGAIN ANT - 7-IN-1 4LTE/5G 2WIFI 1GNSS BL	13		09/01/2024
Fleet 3 Advanced	70112	AXON SIGNAL - SIGNAL UNIT	13		09/01/2024
Fleet 3 Advanced	72036	AXON FLEET 3 - STANDARD 2 CAMERA KIT	13		09/01/2024
A la Carte	100807	AXON FLEET 3 - HUB RADAR CABLE KIT - STALKER DSR DUAL SL	3		09/01/2024
A la Carte	71210	AXON FLEET - DOOR TRIGGER HARDWARE - US	26		09/01/2024
Fleet 3 Advanced	72040	AXON FLEET - TAP REFRESH 1 - 2 CAMERA KIT	13		09/01/2029

Software

Bundle	Item	Description	QTY	Estimated Start Date	Estimated End Date
Fleet 3 Advanced	80400	AXON EVIDENCE - FLEET VEHICLE LICENSE	13	10/01/2024	09/30/2029
Fleet 3 Advanced	80401	AXON FLEET 3 - ALPR LICENSE - 1 CAMERA	13	10/01/2024	09/30/2029
Fleet 3 Advanced	80402	AXON RESPOND - LICENSE - FLEET 3	13	10/01/2024	09/30/2029
Fleet 3 Advanced	80410	AXON EVIDENCE - STORAGE - FLEET 1 CAMERA UNLIMITED	26	10/01/2024	09/30/2029

Services

Bundle	Item	Description	QTY
CRADLEPOINT R1900 SINGLE MODEM KIT	100738	AXON FLEET 3 - SIM INSERTION - VZW 4FF	13
Fleet 3 Advanced	73391	AXON FLEET 3 - DEPLOYMENT PER VEHICLE - NOT OVERSIZED	13

Services

Bundle	Item	Description	QTY
A la Carte	100159	AXON FLEET 3 - SERVICES - ALPR API INTEGRATION	1

Warranties

Bundle	Item	Description	QTY	Estimated Start Date	Estimated End Date
Fleet 3 Advanced	80379	AXON SIGNAL - EXT WARRANTY - SIGNAL UNIT	13	09/01/2025	09/30/2029
Fleet 3 Advanced	80495	AXON FLEET 3 - EXT WARRANTY - 2 CAMERA KIT	13	09/01/2025	09/30/2029

Shipping Locations

Location Number	Street	City	State	Zip	Country
	37707 Newark Blvd	Newark	CA	94560-3727	USA

Payment Details

Sep 2024

Invoice Plan	Item	Description	Qty	Subtotal	Tax	Total
Year 1	100159	AXON FLEET 3 - SERVICES - ALPR API INTEGRATION	1	$1,000.00	$0.00	$1,000.00
Year 1	100807	AXON FLEET 3 - HUB RADAR CABLE KIT - STALKER DSR DUAL SL	3	$90.00	$9.68	$99.68
Year 1	71210	AXON FLEET - DOOR TRIGGER HARDWARE - US	26	$0.00	$0.00	$0.00
Year 1	Fleet3A	Fleet 3 Advanced	13	$48,271.60	$605.22	$48,876.82
Year 1	R1900Kit	CRADLEPOINT R1900 SINGLE MODEM KIT	13	$14,573.00	$1,559.61	$16,132.61
Invoice Upon Fulfillment	R1900Kit	CRADLEPOINT R1900 SINGLE MODEM KIT	13	$0.00	$0.00	$0.00
Total				**$63,934.60**	**$2,174.51**	**$66,109.11**

Sep 2025

Invoice Plan	Item	Description	Qty	Subtotal	Tax	Total
Year 2	100159	AXON FLEET 3 - SERVICES - ALPR API INTEGRATION	1	$1,000.00	$0.00	$1,000.00
Year 2	100807	AXON FLEET 3 - HUB RADAR CABLE KIT - STALKER DSR DUAL SL	3	$90.00	$9.68	$99.68
Year 2	71210	AXON FLEET - DOOR TRIGGER HARDWARE - US	26	$0.00	$0.00	$0.00
Year 2	Fleet3A	Fleet 3 Advanced	13	$48,271.60	$605.22	$48,876.82
Year 2	R1900Kit	CRADLEPOINT R1900 SINGLE MODEM KIT	13	$14,573.00	$1,559.61	$16,132.61
Total				**$63,934.60**	**$2,174.51**	**$66,109.11**

Sep 2026

Invoice Plan	Item	Description	Qty	Subtotal	Tax	Total
Year 3	100159	AXON FLEET 3 - SERVICES - ALPR API INTEGRATION	1	$1,000.00	$0.00	$1,000.00
Year 3	100807	AXON FLEET 3 - HUB RADAR CABLE KIT - STALKER DSR DUAL SL	3	$90.00	$9.67	$99.67
Year 3	71210	AXON FLEET - DOOR TRIGGER HARDWARE - US	26	$0.00	$0.00	$0.00
Year 3	Fleet3A	Fleet 3 Advanced	13	$48,271.60	$605.23	$48,876.83
Year 3	R1900Kit	CRADLEPOINT R1900 SINGLE MODEM KIT	13	$14,573.00	$1,559.61	$16,132.61
Total				**$63,934.60**	**$2,174.51**	**$66,109.11**

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

Tax is estimated based on rates applicable at date of quote and subject to change at time of invoicing. If a tax exemption certificate should be applied, please submit prior to invoicing.

Standard Terms and Conditions

Axon Enterprise Inc. Sales Terms and Conditions

Axon Master Services and Purchasing Agreement:

This Quote is limited to and conditional upon your acceptance of the provisions set forth herein and in the previously agreed-to Master Services and Purchasing Agreement included in Q531965-45400.95KP, as well as the attached Statement of Work (SOW) for Axon Fleet and/or Axon Interview Room purchase, if applicable. In the event you and Axon have entered into a prior agreement to govern all future purchases, that agreement shall govern to the extent it includes the products and services being purchased and does not conflict with the Axon Customer Experience Improvement Program Appendix as described below.

ACEIP:

The Axon Customer Experience Improvement Program Appendix, which includes the sharing of de-identified segments of Agency Content with Axon to develop new products and improve your product experience (posted at www.axon.com/legal/sales-terms-and-conditions), is incorporated herein by reference. By signing below, you agree to the terms of the Axon Customer Experience Improvement Program.

Acceptance of Terms:

Any purchase order issued in response to this Quote is subject solely to the above referenced terms and conditions. By signing below, you represent that you are lawfully able to enter into contracts. If you are signing on behalf of an entity (including but not limited to the company, municipality, or government agency for whom you work), you represent to Axon that you have legal authority to bind that entity. If you do not have this authority, please do not sign this Quote.

DocuSigned by:
David Benson
07578782C2304C4...

8/28/2024

Signature

Date Signed

8/13/2024

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

FLEET STATEMENT OF WORK BETWEEN AXON ENTERPRISE AND AGENCY

Introduction

This Statement of Work ("SOW") has been made and entered into by and between Axon Enterprise, Inc. ("AXON"), and Newark Police Department - CA the ("AGENCY") for the purchase of the Axon Fleet in-car video solution ("FLEET") and its supporting information, services and training. (AXON Technical Project Manager/The AXON installer)

Purpose and Intent

AGENCY states, and AXON understands and agrees, that Agency's purpose and intent for entering into this SOW is for the AGENCY to obtain from AXON deliverables, which used solely in conjunction with AGENCY's existing systems and equipment, which AGENCY specifically agrees to purchase or provide pursuant to the terms of this SOW.

This SOW contains the entire agreement between the parties. There are no promises, agreements, conditions, inducements, warranties or understandings, written or oral, expressed or implied, between the parties, other than as set forth or referenced in the SOW.

Acceptance

Upon completion of the services outlined in this SOW, AGENCY will be provided a professional services acceptance form ("Acceptance Form"). AGENCY will sign the Acceptance Form acknowledging that services have been completed in substantial conformance with this SOW and the Agreement. If AGENCY reasonably believes AXON did not complete the professional services in conformance with this SOW, AGENCY must notify AXON in writing of the specific reasons within seven (7) calendar days from delivery of the Acceptance Form. AXON will remedy the issues to conform with this SOW and re-present the Acceptance Form for signature. If AXON does not receive the signed Acceptance Form or written notification of the reasons for rejection within 7 calendar days of the delivery of the Acceptance Form, AGENCY will be deemed to have accepted the services in accordance to this SOW.

Force Majeure

Neither party hereto shall be liable for delays or failure to perform with respect to this SOW due to causes beyond the party's reasonable control and not avoidable by diligence.

Schedule Change

Each party shall notify the other as soon as possible regarding any changes to agreed upon dates and times of Axon Fleet in-car Solution installation-to be performed pursuant of this Statement of Work.

Axon Fleet Deliverables

Typically, within (30) days of receiving this fully executed SOW, an AXON Technical Project Manager will deliver to AGENCY's primary point of contact via electronic media, controlled documentation, guides, instructions and videos followed by available dates for the initial project review and customer readiness validation. Unless otherwise agreed upon by AXON, AGENCY may print and reproduce said documents for use by its employees only.

Security Clearance and Access

Upon AGENCY's request, AXON will provide the AGENCY a list of AXON employees, agents, installers or representatives which require access to the AGENCY's facilities in order to perform Work pursuant of this Statement of Work. AXON will ensure that each employee, agent or representative has been informed or and consented to a criminal background investigation by AGENCY for the purposes of being allowed access to AGENCY's facilities. AGENCY is responsible for providing AXON with all required instructions and documentation accompanying the security background check's requirements.

Training

AXON will provide training applicable to Axon Evidence, Cradlepoint NetCloud Manager and Axon Fleet application in a train-the-trainer style method unless otherwise agreed upon between the AGENCY and AXON.

Local Computer

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

AGNECY is responsible for providing a mobile data computer (MDC) with the same software, hardware, and configuration that AGENCY personnel will use with the AXON system being installed. AGENCY is responsible for making certain that any and all security settings (port openings, firewall settings, antivirus software, virtual private network, routing, etc.) are made prior to the installation, configuration and testing of the aforementioned deliverables.

Network

AGENCY is responsible for making certain that any and all network(s) route traffic to appropriate endpoints and AXON is not liable for network breach, data interception, or loss of data due to misconfigured firewall settings or virus infection, except to the extent that such virus or infection is caused, in whole or in part, by defects in the deliverables.

Cradlepoint Router

When applicable, AGENCY must provide AXON Installers with temporary administrative access to Cradlepoint's NetCloud Manager to the extent necessary to perform Work pursuant of this Statement of Work.

Evidence.com

AGENCY must provide AXON Installers with temporary administrative access to Axon Evidence.com to the extent necessary to perform Work pursuant of this SOW.

Wireless Upload System

If purchased by the AGENCY, on such dates and times mutually agreed upon by the parties, AXON will install and configure into AGENCY's existing network a wireless network infrastructure as identified in the AGENCY's binding quote based on conditions of the sale.

VEHICLE INSTALLATION

Preparedness

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

On such dates and times mutually agreed upon by the parties, the AGENCY will deliver all vehicles to an AXON Installer less weapons and items of evidence. Vehicle(s) will be deemed 'out of service' to the extent necessary to perform Work pursuant of this SOW.

Existing Mobile Video Camera System Removal

On such dates and times mutually agreed upon by the parties, the AGENCY will deliver all vehicles to an AXON Installer which will remove from said vehicles all components of the existing mobile video camera system unless otherwise agreed upon by the AGENCY.

Major components will be salvaged by the AXON Installer for auction by the AGENCY. Wires and cables are ~~not~~ considered expendable and will not be salvaged. Salvaged components will be placed in a designated area by the AGENCY within close proximity of the vehicle in an accessible work space.

Prior to removing the existing mobile video camera systems, it is both the responsibility of the AGENCY and the AXON Installer to test the vehicle's systems' operation to identify and operate, documenting any existing component or system failures and in detail, identify which components of the existing mobile video camera system will be removed by the AXON Installer.

In-Car Hardware/Software Delivery and Installation

On such dates and times mutually agreed upon by the parties, the AGENCY will deliver all vehicles to an AXON Installer, who will install and configure in each vehicle in accordance with the specifications detailed in the system's installation manual and its relevant addendum(s). Applicable in-car hardware will be installed and configured as defined and validated by the AGENCY during the pre-deployment discovery process.

If a specified vehicle is unavailable on the date and time agreed upon by the parties, AGENCY will provide a similar vehicle for the installation process. Delays due to a vehicle, or substitute vehicle, not being available at agreed upon dates and times may results in additional fees to the AGENCY. If the AXON Installer determines that a vehicle is not properly prepared for installation ("Not Fleet Ready"), such as a battery not being properly charged or properly up-fit for in-service, field operations, the issue shall be reported immediately to the AGENCY for resolution and a date and time for the future installation shall be agreed upon by the parties.

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

Upon completion of installation and configuration, AXON will systematically test all installed and configured in-car hardware and software to ensure that ALL functions of the hardware and software are fully operational and that any deficiencies are corrected unless otherwise agreed upon by the AGENCY, installation, configuration, test and the correct of any deficiencies will be completed in each vehicle accepted for installation.

Prior to installing the Axon Fleet camera systems, it is both the responsibility of the AGENCY and the AXON Installer to test the vehicle's existing systems' operation to identify, document any existing component or vehicle systems' failures. Prior to any vehicle up-fitting the AXON Installer will introduce the system's components, basic functions, integrations and systems overview along with reference to AXON approved, AGENCY manuals, guides, portals and videos. It is both the responsibility of the AGENCY and the AXON Installer to agree on placement of each components, the antenna(s), integration recording trigger sources and customer preferred power, ground and ignition sources prior to permanent or temporary installation of an Axon Fleet camera solution in each vehicle type. Agreed placement will be documented by the AXON Installer.

AXON welcomes up to 5 persons per system operation training session per day, and unless otherwise agreed upon by the AGENCY, the first vehicle will be used for an installation training demonstration. The second vehicle will be used for an assisted installation training demonstration. The installation training session is customary to any AXON Fleet installation service regardless of who performs the continued Axon Fleet system installations.

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

RESOLUTION NO. 11568

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK AUTHORIZING THE CITY TO ACCEPT THE STATE OF CALIFORNIA BOARD OF STATE AND COMMUNITY CORRECTIONS ORGANIZED RETAIL THEFT PREVENTION GRANT AWARD AND AMENDING THE 2022-2024 BIENNIAL BUDGET

WHEREAS, the City of Newark has been selected to receive the State of California Board of State and Community Corrections (BSCC) Organized Retail Theft Prevention grant to support local law enforcement agencies in the preventing and responding to organized retail theft, motor vehicle or motor vehicle accessory theft, or cargo theft; and

WHEREAS, the State Budget Act of 2022 (Senate Bill 154, Chapter 43, Statutes of 2022) established the Organized Retail Theft (ORT) Prevention Grant Program, providing funding of $242,250,000 to California city police departments, sheriff departments, and probation departments to support local law enforcement agencies in preventing and responding to organized retail theft, motor vehicle or motor vehicle accessory theft, or cargo theft. Permissible uses of the grant include, but are not limited to, purchase of technology or other equipment to help deter strategies for preventing or responding to crime; and

WHEREAS, the City Council, pursuant to Resolution No. 11527, previously authorized the City Manager to submit a grant proposal and execute a grant agreement with the BSCC for an ORT grant; and

WHEREAS, funding in the amount of $986,444 has been allocated to the Newark Police Department for the Newark Vehicle and Accessory Theft Prevention Program that will leverage technology and community partnerships to provide comprehensive, evidence based public safety services to prevent motor vehicle and vehicle accessory theft; and

WHEREAS, no match is required for this funding; and

WHEREAS, the City of Newark will provide the BSCC with a financial audit that covers the service delivery period of the grant (October 1, 2023 – December 31, 2026). The audit report will be due no later than June 1, 2027.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Newark authorizes the City to accept the ORT Prevention grant through the BSCC and authorizes the City Manager to take all actions necessary to effectuate the intent of this resolution.

Docusign Envelope ID: 3A54F7A1-C03A-4C64-AC9A-5D4EEEB2B5E2

BE IT FURTHER RESOLVED that the City Council of the City of Newark approves an amendment to the 2022-2024 Biennial Budget and Capital Improvement Program as follows:

FR: 234.30.031.310.4792.BSCC.ORT	BSCC Grant Award	$986,444
TO: 234.30.031.310.5120.BSCC.ORT	Police Service Aid Personnel Costs	$79,131
TO: 234.30.031.310.6120.BSCC.ORT	Special Department Supplies	$11,800
TO: 234.30.031.310.6220.BSCC.ORT	Consultant/Professional Services	$438,200
TO: 234.30.031.310.6440.BSCC.ORT	Travel/Lodging/Meals	$8,000
TO: 234.30.031.310.6450.BSCC.ORT	Training & Education	$1,000
TO: 234.30.031.310.8052.BSCC.ORT	Vehicles	$210,000
TO: 234.30.031.310.8053.BSCC.ORT	Special Police Equipment	$150,000
TO: 234.30.031.310.8053.BSCC.ORT	Internal Services	$88,313

I HEREBY CERTIFY the foregoing resolution was introduced at a regular meeting of the City Council of the City of Newark held on October 14, 2023, by Council Member Bucci who moved its adoption and passage, which motion was carried after being duly seconded, and passed by the following vote:

AYES: Council Members Bucci, Freitas, Jorgens, Vice Mayor Collazo, and Mayor Hannon

NOES: None

ABSENT: None

SECONDED: Vice Mayor Collazo

APPROVED:

MICHAEL K. HANNON
Mayor

ATTEST:

SHEILA HARRINGTON
City Clerk

APPROVED AS TO FORM:

KRISTOPHER J. KOKOTAYLO
City Attorney

City of Newark Memorandum

DATE: August 22, 2024

TO: David Benoun, City Manager

VIA: Jonathan Arguello, Chief of Police

CC: Krysten Lee, Finance Director

FROM: Brian Simon, Police Lieutenant

SUBJECT: Acceptance of Crossroads Software and E-Cite Agreement

EXECUTIVE SUMMARY

The Newark Police Department (NPD) was selected to receive a Traffic Records Improvement Project (TRIP) grant from the California Office of Traffic Safety (OTS). The goal of the TRIP grant is to increase the efficiency of officer and records staff through the purchase of electronic crash reporting and citation system software, which integrates with the department's records management systems and the Alameda County Court System. NPD is looking to replace the current electronic citation vendor, Turbo Data, with Crossroads Software Inc. This purchase will increase efficiency by decreasing the amount of time officers spend handwriting citations and records personnel data entering that information into the records management system. Crossroads Software, Inc, has been evaluated by staff as the single source vendor to provide program software and support for the proprietary Crossroads collision report writer and electronic citation software. The TRIP grant has a value of $80,000.

BACKGROUND

The Newark Police Department (NPD) is continually exploring opportunities to modernize the department's traffic reporting and citation process. Switching from Turbo Data software to Crossroads' electronic crash reporting and citation software will improve operational efficiency, accuracy, and data management.

In 2022, the Department, in collaboration with the Office of Traffic Safety (OTS), initiated a pilot electronic citation program with Tubo Data Systems and acquired our first electronic citation devices. While these devices met an immediate need within the Traffic Unit, a subsequent review identified

Crossroads Software Inc. as a more suitable vendor. Crossroads' software better aligns with the department's requirements for citation reporting and improving on current collision report preparation by providing an end user experience that seamlessly interfaces with the State of California's statewide traffic records system forms and data fields.

Feedback from patrol staff indicated a strong interest for electronic citations for patrol and highlighted the difficulties of our current collision reporting software, which has proven cumbersome for officers. The Crossroads electronic citation solution integrates with department-issued smart phones via an iOS app allowing us to easily and economically expand the program to patrol and requires only the additional purchase of portable citation printers. Additionally, this contract includes user-friendly collision investigation software that minimizes reporting errors and integrates seamlessly with our Records Management System (RIMS) and the Statewide Integrated Traffic Records System (SWTRS). This advancement enhances our traffic management capabilities and improves overall efficiency.

DISCUSSION/ANALYSIS

Crossroads has been identified as a single source vendor capable of providing both the electronic collision reporting and citation programs. Their proprietary software offers a unique platform that provides the end user an interface emulating the California Highway Patrol collision report form commonly referred to as a CHP 555. Their product streamlines the reporting process for officers, minimizes errors through a user-friendly design, and seamlessly interacts with our records management software RIMS and the Statewide Integrated Traffic Reporting System (SWITRS). Furthermore, Crossroads Software Inc. offers electronic citation software, which is compatible with our existing smartphone hardware through an iOS application. Their electronic citation software is also compatible with RIMS as well as the Alameda County Court system. This unique combination of features, expertise, and regional customization makes Crossroads Citation Software the only vendor capable of delivering a solution that fully meets these specialized needs, thereby justifying it as a single-source purchase.

The key benefits of this software include:

Electronic Crash Reporting: Officers will be able to complete collision reports more swiftly and accurately, reducing the need for manual data entry.

Electronic Citations: Automated citation units and smartphone capability will enable officers to issue citations more efficiently, reducing paperwork and processing time.

Integration with RIMS: The software will automate the transfer of citation and collision data into our records management system, streamlining data handling and reporting.

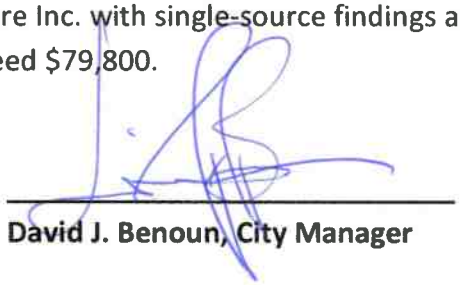
FISCAL IMPACT

If approved, The City would be required to sign a contract with Crossroads Software, Inc and make the initial purchase of the software for $79,800. This cost will be covered by grant funding from the Office of Traffic Safely. There is an annual maintenance fee for the software at an annual cost of $6,000 with the first year included. This annual cost will be absorbed with the expiration of the original Turbo Data (electronic citation) system contract, which currently costs approximately $8,400. Turbo Data also charges and additional $2.00 per citation they process. By switching to Crossroads from Turbo Data we will eliminate the per citation charge and the City will have a yearly savings of approximately $2,400.

RECOMMENDATION

Staff recommends that the City Manager approve a purchase agreement with Crossroads Software, Inc. using California Office of Traffic Safety TRIP grant funds in the amount not to exceed $79,800 for the purchase of Crossroads collision and electronic citation software services.

Pursuant to Newark Resolution No. 11577, adopted November 9, 2023, authorizing the City Manager or his designee to act upon certain administrative matters on behalf of the City during the City Council summer recess of August 2024, I, David J. Benoun, hereby approve an agreement with Crossroads Software Inc. with single-source findings and issue a purchase order for said services in an amount not to exceed $79,800.



David J. Benoun, City Manager

By

8-27-24

Date

SOFTWARE AS A SERVICE AGREEMENT

Crossroads Software Inc.

C24076

This Software as a Service Agreement (hereinafter "Agreement") is made and entered into by and between the CITY OF NEWARK, a municipal corporation (hereinafter "City"), and Crossroads Software, Inc (hereinafter "Consultant"). City and Consultant may be collectively referred to herein as the "parties."

RECITALS

A. City requested a proposal from Consultant to perform the services generally including: providing desktop and mobile collision report writing software with Sunridge (RIMS) and SWITRS Systems data transmission interface. Also including a iOS citation system site license coupled with desktop citation management application, court transmission software, and Sunridge (RIMS) interface.

B. In response to the City's request, Consultant submitted a proposal, and, after negotiations, Consultant agreed to perform the services more particularly described on Exhibit "A," in return for the compensation described in this Agreement and Exhibit "B."

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS AND CONDITIONS IDENTIFIED HEREIN, THE PARTIES HEREBY AGREE AS FOLLOWS:

1. DEFINITIONS.

"Documentation" means technical manuals, training manuals, user guides, and workbooks, as updated and amended from time to time, provided by Consultant to assist Customer with the use of Software.

"City Content" means any information or data related to City, whether supplied by City or a constituent of the City, that is input into the Cloud-Hosted Service by City or a constituent of the City, in connection with the use of the Cloud-Hosted Service.

"Cloud-Hosted Service" means the solution is designed from the ground up for cloud and is a multi-tenant cloud environment. In addition, Consultant owns, provides and oversees infrastructure, software and administrative tasks and makes its service available to City over the Internet using a standard web browser. The Cloud-Hosted Service includes the software and Consultant's network capacity as well as the equipment used by Consultant to support operations including storage, hardware, servers and networking components. The infrastructure in the cloud-hosted environment is properly secured through multiple physical, procedural, and technical safeguards to segregate and protect City's data.

"Software" means all or any portion of the global version of the binary computer software programs and updates and enhancements thereto, (including corresponding source code, unless specifically excluded herein) and Documentation delivered by Consultant to Customer. Software includes the third-party software delivered by Consultant as specified in the Schedule, and modifications made to the Software. Software does not include source code to third party software. Unless specifically stated otherwise, all Software is delivered to Customer only if and when generally commercially available.

2. **SCOPE OF SERVICES.** Consultant shall perform the services described in Exhibit "A," attached hereto and incorporated herein by reference, in accordance with the terms and conditions contained in this Agreement.

3. **TIME FOR PERFORMANCE.** Time is of the essence in the performance of services under this Agreement and the timing requirements set forth herein shall be strictly adhered to unless otherwise modified in writing in accordance with this Agreement. Consultant shall commence performance, and shall complete all required services no later than the dates set forth in Exhibit "A." Any services for which times for performance are not specified in this Agreement shall be commenced and completed by Consultant in a reasonably prompt and timely manner based upon the circumstances and direction communicated to the Consultant. Consultant shall submit all requests for extensions of time to the City in writing no later than ten days after the start of the condition which purportedly caused the delay, and not later than the date on which performance is due.

4. **CLOUD-HOSTED SERVICE.**

4(A). Right to Use the, Software and Documentation. In consideration of all obligations of City hereunder, including, without limitation, the payment by City of any applicable fees, Consultant hereby grants to City, during the term of this Agreement, a non-exclusive, non-transferable (except as otherwise provided for herein), right and license to access and use the Software Applications, and to make a reasonable number of copies of and use the Documentation in connection with such use of the Software Applications.

4(B). Use Restrictions. City shall not: (i) access and/or use the Software in order to design, create or build a service or product that is competitive with the Software, or which uses ideas, features or functions that are similar to the Software; (ii) license, sublicense, sell, resell, transfer, assign, distribute or otherwise commercially exploit or make available to any third party the Software, except as expressly permitted herein; modify or make derivative works based upon the Software or any part thereof, or directly or indirectly disassemble, decompile, or otherwise reverse engineer the Software or any portion thereof.

4(C). Proprietary Rights. The Software, including all intellectual property rights therein and thereto, and any modification thereof, are and shall remain the exclusive property of Consultant and its licensors. City shall not take any action that jeopardizes the proprietary rights of Consultant or its licensors or acquire any right in the Software except the limited rights expressly granted in this Agreement.

4(D). Internet and Telecommunication Connections. City shall be responsible for obtaining any and all Internet and/or telecommunication connections used by City to access the Software Applications. Consultant shall have no responsibility or liability for any interruption or delay in accessing or using the Software Application arising out of such Internet or telecommunications connections.

4(E). City Content.

i. City shall provide City Content for inclusion in the Software. City is responsible for the

quality of the City Content provided. Consultant is responsible for the quality of the display or use of the City Content provided for inclusion in the City database.

ii. Consultant acknowledges that all data created by City will remain the sole property of the City. Consultant agrees that it shall not at any time sell, assign, transfer, or otherwise make available to or allow use by Consultant, Consultant's agent, or a third party of City Content.

iii. City shall exclusively own the City Content collected by Consultant in connection with the Software Applications; provided, however, that City hereby grants to Consultant a non-exclusive limited right and license, without the right to grant or authorize sublicenses, during the term of this Agreement to use and reproduce City Content, solely for the purpose of facilitating the performance of Consultant's obligations under this Agreement, and the right to use data aggregated from the City Content (which data does not identify the city, or any individual or entity) during and after the term of the Agreement.

iv. Consultant acknowledges that City is entitled to copy, export, or otherwise duplicate any available City Content at any time.

v. Consultant shall, at City's request, make available City Content within five business days. The database instance must be in a condition and format that allows easy transfer to a similar system.

vi. In the event this Agreement expires or is terminated, Consultant shall provide City with all City Content within thirty calendar days of such termination or expiration without charge. City Content shall be in dedicated data files suitable for import into commercially available database software (e.g., Microsoft SQL). The dedicated data files will be comprised of City Content contained in the Software Applications. The structure of the relational database will be specific to City Content and will not be representative of the proprietary Consultant's database.

5. PAYMENT.

5(A). Billing. In order to request payment, Consultant shall submit invoices to the City identifying the services performed in the billing period, milestones achieved, and the charges therefor (including an identification of personnel who performed the services, hours worked, hourly rates, and reimbursable expenses), based upon the Consultant's billing rates (set forth on Exhibit "B," attached hereto and incorporated herein by reference). The City shall make monthly payments to Consultant for services which are performed in accordance with this Agreement, to the satisfaction of the City.

5(B). "Not to Exceed" Compensation. The compensation payable to Consultant for the services identified in Exhibit "A" shall not exceed $79,800 Consultant shall not perform any services beyond the services identified in Exhibit "A" without prior written authorization from the City's Authorized Representative. If the City's Authorized Representative provides authorization for additional services, the total compensation to the Consultant under this Agreement shall not exceed $79,800

5(C). Consultant's Failure to Perform. In the event that Consultant performs services which do not comply with the requirements of this Agreement, Consultant shall, upon receipt of written notice from the City, re-perform the services (without additional compensation to the

Consultant). If Consultant's failure to perform in accordance with this Agreement causes damages to the City, Consultant shall reimburse the City for the damages incurred (which may be charged as an offset to Consultant's payment).

6. AUTHORIZED REPRESENTATIVES.

6(A). Consultant's Authorized Representative. Consultant understands that, in entering into this Agreement, the City has relied upon Consultant's ability to perform in accordance with its representations regarding the qualifications of the Consultant (including the qualifications of its Authorized Representative, its personnel, and its subconsultants, if any) identified in Exhibit "C," attached hereto and incorporated herein by reference. Therefore, Consultant shall not replace its Authorized Representative, or any of the personnel or subconsultants identified in Exhibit "C," without the prior written consent of the City. All services under this Agreement shall be performed by, or under the direct supervision of, Consultant's Authorized Representative, as identified in Exhibit "C."

6(B). City's Authorized Representative. For the performance of services under this Agreement, the Consultant shall take direction from the City's Authorized Representative: Chief Jonathan Arguello, unless otherwise designated in writing by the City's Authorized Representative or the City Manager.

7. INFORMATION AND DOCUMENTATION.

7(A). Information from City. City has made an effort to provide Consultant with all information necessary for Consultant's performance of services under this Agreement. If Consultant believes additional information is required, Consultant shall promptly notify the City, and the City will provide to Consultant all relevant non-privileged information in City's possession.

7(B). Consultant's Accounting Records. Consultant shall maintain all accounting records related to this Agreement in accordance with generally accepted accounting principles and state law requirements, and in no event for less than four years. Consultant's accounting records shall include, at a minimum, all documents which support Consultant's costs and expenses related to this Agreement, including personnel, subconsultant invoices and payments, and reimbursable expenses. Consultant's accounting records shall be made available to City within a reasonable time after City's request, during normal business hours.

7(C). Ownership of Work Product. All original documents prepared by Consultant (including its employees and sub-consultants) for this Agreement ("work product"), whether complete or in progress, are the property of the City and shall be given to the City at the completion of Consultant's services, or upon demand by the City.

7(C). Intellectual Property Rights Ownership. The Software (including upgrades and custom software), source code, and Documentation are and will remain the exclusive property of Consultant. City has no right, title, or interest to or in the Software (including Upgrades and Custom Software), source code, or Documentation, except as expressly granted in this Agreement. City Content that is converted by Consultant and data that City develops using the Software (collectively, "*City Content*") are and will remain the exclusive property of City.

Consultant has no right, title, or interest to or in City Content. All materials, ideas, concepts, know-how or techniques developed or performed by Consultant during the course of performance of this Agreement will be and are the exclusive property of Consultant.

8. **RELATIONSHIP BETWEEN THE PARTIES.** Consultant is, and at all times shall remain, an independent contractor solely responsible for all acts of its employees, agents, or subconsultants, including any negligent acts or omissions. Consultant is not City's agent, and shall have no authority to act on behalf of the City, or to bind the City to any obligation whatsoever, unless the City provides prior written authorization to Consultant. Consultant is not an officer or employee of City, and Consultant shall not be entitled to any benefit, right, or compensation other than that provided in this Agreement.

9. **CONFLICTS OF INTEREST PROHIBITED.** Consultant (including its employees, agents, and subconsultants) shall not maintain or acquire any direct or indirect interest that conflicts with the performance of this Agreement.

10. **NONDISCRIMINATION.** Consultant shall comply with all applicable federal, state, and local laws regarding nondiscriminatory employment practices, whether or not said laws are expressly stated in this Agreement. Consultant shall not discriminate against any employee or applicant because of race, color, religious creed, national origin, physical disability, mental disability, medical condition, marital status, sexual orientation, or gender.

11. **COMPLIANCE WITH LAW AND STANDARD OF CARE.** Consultant shall comply with all applicable legal requirements including all federal, state, and local laws (including ordinances and resolutions), whether or not said laws are expressly stated in this Agreement. Consultant shall perform services under this Agreement using a standard of care equal to, or greater than, the degree of skill and diligence ordinarily used by reputable professionals, with a level of experience and training similar to Consultant, performing under circumstances similar to those required by this Agreement.

12. **BUSINESS LICENSE.** The Consultant shall apply for and pay the business license tax in accordance with Newark Municipal Code Title 5, Chapter 5.04.

13. **INSURANCE.** Consultant shall, throughout the duration of this Agreement, maintain insurance to cover Consultant (including its agents, representatives, sub-consultants, and employees) in connection with the performance of services under this Agreement of the types and in the coverage amounts set forth in Exhibit D entitled "Insurance Requirements". This Agreement identifies the minimum insurance levels with which Consultant shall comply; however, the minimum insurance levels shall not relieve Consultant of any other performance responsibilities under this Agreement (including the indemnity requirements), and Consultant may carry, at its own expense, any additional insurance it deems necessary or prudent. Concurrently with the execution of this Agreement by the Consultant, and prior to the commencement of any services, the Consultant shall furnish written proof of insurance (certificates and endorsements), in a form acceptable to the City. Consultant shall provide substitute written proof of insurance no later than thirty days prior to the expiration date of any insurance policy required by this Agreement.

14. **CONFIDENTIAL INFORMATION.**

14(A). The term "Confidential Information" shall mean any and all information which is disclosed by either party ("Owner") to the other ("Recipient") verbally, electronically, visually, or in a written or other tangible form which is either identified or should be reasonably understood to be confidential or proprietary. Confidential Information includes, but is not limited to, trade secrets, computer programs, software, documentation, formulas, data, inventions, techniques, marketing plans, strategies, forecasts, customer lists, employee information, financial information, confidential information concerning Owner's business, as Owner has conducted it or as it may conduct itself in the future, confidential information concerning any of Owner's past, current, or possible future products or manufacturing or operational methods, including information about Owner's research, development, engineering, purchasing, manufacturing, accounting, marketing, selling or leasing, and any software (including third party software) provided by Owner. Owner's Confidential Information shall be treated as strictly confidential by Recipient and shall not be disclosed by Recipient except to those third parties with a need to know and that are operating under a confidentiality agreement with non-disclosure provisions no less restrictive than those set forth herein. This Agreement imposes no obligation upon the parties with respect to Confidential Information which either party can establish by legally sufficient evidence: (a) was in the possession of, or was rightfully known by the Recipient without an obligation to maintain its confidentiality prior to receipt from Owner; (b) is or becomes generally known to the public without violation of this Agreement; (c) is obtained by Recipient in good faith from a third party having the right to disclose it without an obligation on confidentiality; (d) is independently developed by Recipient without the participation of individuals who have had access to the Confidential Information or (e) is required to be disclosed by court order or applicable law, provided prior notice is given to the Owner. The Recipient shall not obtain, by virtue of this Agreement, any rights title or interest in any Confidential Information of the Owner. Within fifteen days after termination of this Agreement, each party shall certify in writing to Owner that all copies of Owner's Confidential Information in any form, including partial copies, have been destroyed or returned to Owner.

Consultant acknowledges that the City is a governmental agency and may be required to release certain information under requests made according to provisions of the California Public Records Act (Cal. Gov. Code Sections 6250, et seq.).

14(B). Recipient shall protect the deliverables resulting from Services with at least the same degree of care and confidentiality, but not less than a reasonable standard of care, which Recipient utilizes for Recipient's Confidential Information.

14(C). The terms of this Section 14 shall survive termination of this Agreement.

15. **SECURITY OBLIGATION OF CONSULTANT.** Consultant must comply with all security obligations contained in this Agreement and attached exhibits. The City reserves the right to request any additional audits (self and/or independent), and supportive evidence that demonstrates Consultant's compliance with the security specifications listed in this Agreement, in addition to the security obligations in this Agreement and attached exhibits. Consultant shall:

15(A). Comply with all applicable legal requirements including all federal, state, and local laws, whether or not said laws are expressly stated in this Agreement.

15(B). Implement and document appropriate technical, physical, and administrative safeguards

to protect the confidentiality, integrity, and availability of the data and systems receive, maintain, or transmits for or on behalf of the City.

15(C). Apply security patches, perform regular vulnerability assessments and use encryption for all electronic transmission of sensitive and/or protected data.

15(D). Report to the City any use or disclosure of sensitive and/or protected data that is not permitted under this Agreement as soon as reasonably practicable upon discovery but not later than five calendar days from discovery, and mitigate, to the extent practicable and in cooperation with the City, any harmful effects known to it in connection with a use or disclosure made in violation of this Agreement.

15(E). Report to the City of any security incident and/or breach upon discovery within three hours of knowledge of incident and/or breach. A security incident and/or breach shall include, but is not limited to, unwanted disruption or denial of service, unauthorized use of a system for processing or City data, or changes to system hardware, firmware, or software without Consultant's consent. Reports shall include successful security incidents.

15(F). Ensure that any subcontractors, vendors, and agents to whom it provides City data or who created, received, use, disclose, maintain, transmit, or have access to the City data agree to the same restrictions, conditions, and requirements that apply to Consultant under this Agreement, including but not limited to implementing reasonable and appropriate safeguards to protect City data and systems. Consultant shall obtain satisfactory written assurance of this from the subcontractor and make this assurance available to the City upon request.

15(G). Ensure that disclosure of City data, including, but not limited to a designated record set, be approved in advance by the City and then disclosed only to individuals expressly authorized to review such information under applicable Federal and State laws. If Consultant discloses or attempts to disclose City data without the requisite prior approval, the City may take any available remedy to prevent or mitigate any further disclosure. Consultant shall provide written notice to the City of any use or disclosure of City data not provided for under this Agreement of which Consultant becomes aware within five calendar days of its discovery.

15(H). Maintain a business continuity, disaster recovery, and incident response plans to support the continuous availability of the solution being offered to the City under the Agreement. The plans shall be maintained and updated by Consultant throughout the term of this Agreement and shall be available for review by City and audit officials on request.

15(I). Data and systems managed by Consultant on behalf of the City shall never leave the continental United States. If any Consultant or subcontractor(s) work in the United States is moved to another country, outside the continental United States without the consent of the City, such action may be deemed a breach of this Agreement.

16. **REPORTING DAMAGES.** If any damage (including death, personal injury or property damage) occurs in connection with the performance of this Agreement, Consultant shall immediately notify the City Risk Manager's office by telephone at 510-578-4267, and Consultant shall promptly submit to the City's Risk Manager and the City's Authorized Representative, a written report (in a form acceptable to the City) with the following information: (a) name and address of the injured or deceased person(s), (b) name and address of witnesses, (c) name and

address of Consultant's insurance company, and (d) a detailed description of the damage and whether any City property was involved.

17. INDEMNIFICATION.

17(A). Consultant shall indemnify, hold harmless, and defend the City (including its elected officials, officers, agents and employees) from and against any and all claims (including all litigation, demands, damages, liabilities, costs, and expenses, and including court costs and attorney's fees) resulting or arising Consultant's performance, or failure to perform, under this Agreement, or any negligent act or omission of Consultant, any Subconsultant, or any employee or person under the control of Consultant, except for Claims arising out of the City's sole negligence or willful misconduct.

17(B). Copyright and Patent Indemnification. Claims which trigger Consultant's responsibility under Section 17 shall include any claims that the software resulting from the provision of Services pursuant to the attached Exhibit A Scope of Services infringe any patent, copyright, or accidental or intentional violation of a trade secret or other intellectual property of a third party not included in this Agreement. Consultant shall, in its reasonable judgment and at its option and expense: (i) obtain for the City the right to continue using the Software; or (ii) replace or modify the Software so that it becomes non-infringing while giving equivalent performance. Consultant shall not have any liability for a claim alleging that any Software infringes a patent or copyright if the alleged infringement was developed based on information furnished by the City or if the alleged infringement is the result of a modification made by the City.

18. LIMITED WARRANTY.

18(A). Consultant warrants that it has title to the Software and/or the authority to grant licenses to use the Software.

18(B). Consultant warrants that the Software will perform substantially in accordance with the Documentation for a period of one year from the date of initial installation and that the Software media is free from material defects. Consultant does not warrant that the Software is error-free.

18(C). Consultant's sole obligation with respect to its limited warranty is limited to repair or replacement of the defective Software, provided City notifies Consultant of the deficiency within the one year period and provided Licensee has installed all Software updates provided pursuant to Consultant's Support Services.

18(D). Consultant warrants that to the best of its knowledge, information, and belief, the Software does not contain any known viruses, back-doors or time bombs, (or similar malicious code), or undocumented security codes that could prevent Licensee' s perpetual use of the Software.

18(E). CONSULTANT DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL EITHER PARTY BE RESPONSIBLE FOR ANY CONSEQUENTIAL OR SIMILAR

DAMAGES ARISING FROM OR RELATED TO THIS AGREEMENT.

19. **TERM OF THE AGREEMENT.** The term of this Agreement shall commence on the date last signed by the parties, below, and shall continue until completion of all services in accordance with the timing requirements set forth in Exhibit "A" and paragraph 2 of this Agreement. This Agreement may be terminated by the City without cause upon fifteen days written notice to Consultant. If the City exercises its right to terminate this Agreement in accordance with this paragraph, the City shall pay Consultant for all services satisfactorily performed in accordance with this Agreement, through and including the date of termination, but not to exceed the payments according to the rates specified in Exhibit "B" or the maximum amount authorized under paragraph 5 of this Agreement.

20. **DEFAULT.** If either party ("demanding party") has a good faith belief that the other party ("defaulting party") is not complying with the terms of this Agreement, the demanding party shall give written notice of the default (with reasonable specificity) to the defaulting party, and demand the default to be cured within ten days of the notice. If: (a) the defaulting party fails to cure the default within ten days of the notice, or (b) if more than ten days are reasonably required to cure the default and the defaulting party fails to give adequate written assurance of due performance within ten days of the notice, then (c) the demanding party may terminate this Agreement upon written notice to the defaulting party.

21. **NOTICES.** All notices required or contemplated by this Agreement shall be in writing and shall be delivered to the respective party as set forth in this section. Communications shall be deemed to be effective upon the first to occur of: (a) actual receipt by a party's Authorized Representative, or (b) actual receipt at the address designated below, or (c) three working days following deposit in the United States Mail of registered or certified mail sent to the address designated below. The Authorized Representative of either party may modify their respective contact information identified in this section by providing notice to the other party.

To: City	**To: Consultant**
Attn: Jonathan Arguello, Chief Newark Police Department 37077 Newark Blvd. Newark, Ca 94560 510.578.4375 Jonathan.arguello@newark.org	Attn: Jeff Cullen Crossroads Software, Inc. 407 W. Imperial Hwy, Suite H #378 Brea, CA 92821 (714) 990-6433 JCullen@CrossroadsSoftware.com

22. **HEADINGS.** The heading titles for each paragraph of this Agreement are included only as a guide to the contents and are not to be considered as controlling, enlarging, or restricting the interpretation of the Agreement.

23. **SEVERABILITY.** If any term of this Agreement (including any phrase, provision, covenant, or condition) is held by a court of competent jurisdiction to be invalid or unenforceable, the Agreement shall be construed as not containing that term, and the remainder of this Agreement shall remain in full force and effect; provided, however, this paragraph shall not be applied to the extent that it would result in a frustration of the parties' intent under this Agreement.

24. **GOVERNING LAW, JURISDICTION, AND VENUE.** The interpretation, validity, and enforcement of this Agreement shall be governed by and interpreted in accordance with the laws of the State of California. Any suit, claim, or legal proceeding of any kind related to this Agreement shall be filed and heard in a court of competent jurisdiction in the County of Alameda.

25. **ASSIGNMENT AND DELEGATION.** This Agreement, and any portion thereof, shall not be assigned or transferred, nor shall any of the Consultant's duties be delegated, without the written consent of the City. Any attempt to assign or delegate this Agreement without the written consent of the City shall be void and of no force or effect. A consent by the City to one assignment shall not be deemed to be a consent to any subsequent assignment.

26. **MODIFICATIONS.** This Agreement may not be modified orally or in any manner other than by an agreement in writing signed by both parties.

27. **WAIVERS.** Waiver of a breach or default under this Agreement shall not constitute a continuing waiver or a waiver of a subsequent breach of the same or any other provision of this Agreement.

28. **CONFLICTS.** If any conflicts arise between the terms and conditions of this Agreement and the terms and conditions of the attached exhibits or any documents expressly incorporated, the terms and conditions of this Agreement shall control.

29. **ENTIRE AGREEMENT.** This Agreement, including all documents incorporated herein by reference, comprises the entire integrated understanding between the parties concerning the services described herein. This Agreement supersedes all prior negotiations, agreements, and understandings regarding this matter, whether written or oral. The documents incorporated by reference into this Agreement are complementary; what is called for in one is binding as if called for in all.

30. **COUNTERPARTS.** This Agreement may be signed in counterparts, each of which shall be deemed to be an original. The Parties agree that the digital signatures of the parties included in this Agreement are intended to authenticate this writing and to have the same force and effect as manual signatures. Any digital signature shall have the same legal validity and enforceability as a manually executed signature or use of a paper-based record keeping system to the fullest extent permitted by applicable law.

31. **SIGNATURES.** The individuals executing this Agreement represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this Agreement on behalf of the respective legal entities of the Consultant and the City. This Agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

IN WITNESS WHEREOF, the City and Consultant do hereby agree to the full performance of the terms set forth herein.

CITY OF NEWARK, a municipal corporation

By: _____
Title:
Date: 8-21-24

CONSULTANT

By: Jeff Cullen
Title: CEO
Date: August 29 2024

ATTEST:

Sheila Harrington

By: Sheila Harrington
Title: City Clerk
Date: 8/29/2024

APPROVED AS TO FORM:

By: Kristopher Kokotaylo
Title: City Attorney

EXHIBIT A

SCOPE OF SERVICES

This Scope of Services, Exhibit "A," is hereby incorporated by reference into the Agreement, under Agreement Paragraph 2.

Crossroads Software, Inc.

for an

e-Citation System, Report Writing & CHP Upload System

for the

City of Newark

Table of Contents

Page Number

1.1 Project Overview 14

1.2 Project Deliverables 14

1.3 Software License Provisions 15

1.3.1 Crossroads Software, Inc. 15

1.3.2 Term of the License 15

1.4 Project Management and Implementation Services 15

1.4.1 Responsibilities of the City 16

1.4.2 Responsibilities of Crossroads Software, Inc. 16

1.4.3 Change Orders 16

1.4.4 Resolution of Disputes 17

1.4.5 System Acceptance 17

1.5 Warranty, Maintenance, and System Support 18

1.5.1 Software Warranty and Maintenance Plan 18

1.6 Training 18

1.6.1 e-Citations & Syncing – End User Training 18

1.6.4 System Maintenance and Administration Training 18

Sole /Single Source Justification

DATE: 08/12/2024	DEPT HEAD or DESIGNEE: Brian Simon
DEPARTMENT: Police	NAME OF VENDOR: Crossroads Software Inc
DESCRIPTION OF ITEM: Single Source Letter for Crossroads Software, Inc. for Crossroads Software, to include their collision report writer, CHP Upload system and E-Citation System.	
ESTIMATED PURCHASE AMOUNT: $79,800	
AVAILABLE BUDGET: YES ☑ NO ☐	
BUDGET ORGANIZATION (G/L): 233.30.031.310.8053.OTS.TRIP.TR24018	

Single Source: ☑

A Single Source is one of the multiple sources that are capable of producing the desired item(s). It is the one source that is selected without competition for compelling and justifiable reasons.

Sole Source: ☐

A Sole Source is the *only* source available that is capable of producing the desired item(s) because of exclusive control of patent rights, copyrights, proprietary processes, etc., or similar circumstances.

JUSTIFICATION:

WRITTEN JUSTIFICATION MUST BE PROVIDED ON PAGE 2 FOR THE SELECTED EXEMPTION.	
☐	**Only known supplier.** (List of the suppliers which were contacted and the specific reasons why each was not a viable source).
☐	**Only known qualified supplier or item.** (List the qualifications that each source or item meets. If another supplier offers a similar item, provide the item identification, supplier information, and comparable pricing).
☐	**Supplier proprietary item.** (The selected supplier is the only manufacturer of this item. List the reasons why no substitute item can be used and if no similar item is available).
☐	**Government or Customer Directed.** (Provide a copy of the contract page which directs this source or a customer letter, memo, or e-mail specifically directing this source).
☑	**Other.**

JUSTIFICATION: What criteria were used in the market research to substantiate no competition, including evaluation of other goods/services? Provide a narrative of the extent of your market research to include suppliers contacted or an explanation of why market research was not conducted, technical reasoning, and/or evidence of the claim. Use additional sheets if necessary.

Crossroads Citation Software qualifies as a single-source purchase because it is the exclusive provider of a comprehensive solution for managing traffic-related data, specifically tailored to the needs of California agencies. Their proprietary software offers a unique platform that provides the end user an interface emulating the California Highway Patrol collision report form commonly referred to as a CHP 555. Their product streamlines the reporting process for officers, minimizes errors through a user-friendly design, and seamlessly interacts with our records management software RIMS and the Statewide Integrated Traffic Reporting System (SWITRS). The software uniquely integrates features such as electronic crash reporting, citation management, and data analysis, all in one platform. It includes customizable data entry forms, street name verification, and the ability to generate GIS maps and collision diagrams, offering capabilities that no other vendor provides in a single system. Furthermore, Crossroads Software's specialization and extensive experience with California agencies ensure their software meets the specific regulatory and operational requirements of the region, including integration with the Alameda County Court System. This unique combination of features, expertise, and regional customization makes Crossroads Citation Software the only vendor capable of delivering a solution that fully meets these specialized needs, thereby justifying it as a single-source purchase.

Notes (Finance Only)

RESO 11564

Attached:
Single source letter from Crossroads Software Inc.
Memo to City Manager.

I CERTIFY THAT THE STATEMENTS CHECKED, AND THE INFORMATION PROVIDED ABOVE, ARE COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE. UNDERSTAND THAT THE PROCESSING OF THIS SOLE/SINGLE SOURCE JUSTIFICATION PRECLUDES THE USE OF FULL AND OPEN COMPETITION.

DEPT HEAD or DESIGNEE:	PURCHASING OFFICER or DESIGNEE:
SIGN:	SIGN:
PRINTED NAME: Jonathan Arguello	PRINTED NAME: Krysten Lee
DATE: 8/29/24	DATE: 8/28/24

Crossroads Software

210 W. Birch Street, Suite 207, Brea, CA 92821 (714) 990-6433

Lt. Brian Simon
Newark Police Department

August 12, 2024

Dear Lt. Simon,

The products offered by Crossroads Software, including our Collision Report Writer, CHP Upload System and e-Citation System are available exclusively from Crossroads Software. Crossroads Software does not distribute our software through other vendors so that we may maintain control over the quality of installation, training and support that we provide with our software systems.

Crossroads has specialized in systems for California agencies. Over 300 Police Departments and over 400 Public Agency Traffic Engineering Departments in California use the Crossroads Collision and Citation Database Systems.

If you have any questions or need additional information, please don't hesitate to call me at (714) 990-6433.

Sincerely,

Jeff Cullen
Director of Software Development

STAFF REPORT

Item D. 6.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Roya Gonzalez, Senior Management Analyst
SUBJECT	Adopt a resolution authorizing the City Manager to execute a Contractual Services Agreement with Art Builds Community for on-call public art consulting services in the amount not to exceed $135,000 and amend the 2024-2026 Biennial Budget and Capital Improvement Plan to appropriate $135,000 from the Art in Public Places Fund

SUMMARY AND RECOMMENDATION

The implementation of the City's Public Art Master Plan requires the planning and execution of several projects and administrative tasks during the first year. To provide public art expertise and advice to staff, an on-call public art consultant is needed. Staff recommends that the City Council, by resolution, authorize the City Manager to enter into a Contractual Services Agreement with Art Builds Community in an amount not to exceed $135,000 for on-call public art consulting services.

BACKGROUND

The Public Art Master Plan May 2024 Update was approved by City Council on June 13, 2024. The Plan outlines a strategic framework for the development, implementation, and management of a robust public art program in Newark. The first year's implementation plan includes several projects and administrative tasks, including:

- Continuing the inclusion of public art in the Central Overpass Project
- Continuing to coordinate public art in the Old Town Streetscape Project
- Implementing the Utility Box Art program
- Developing a rotating art exhibit in the lobby of City Hall
- Establishing the Public Art Committee
- Creating a Public Art Ordinance and revising the Art in Public Places Fee
- Finalizing recommended public art policies

To achieve the ambitious goals of the Plan and complete the tasks listed for year one, it is recommended to have dedicated public art staff, with technical assistance from consulting services as needed.

The 2024-2026 Biennial Budget and Capital Improvement Plan, approved on June 27,

2024, includes the addition of a new Recreation Supervisor position. This role will be responsible for the implementation of the Public Art Master Plan, among other duties. To successfully complete these tasks, on-call public art consulting service is needed.

DISCUSSION/ANALYSIS

Art Builds Community is a women-led firm specializing in public art planning, consulting, policy, curation, and community engagement. They have extensive experience working with several public entities, including the cities of Richmond and Livermore and the County of Santa Clara.

During the development of the Public Art Master Plan, two existing CIP projects were identified - the Central Overpass Project and Old Town Streetscape Project - as ideal for the inclusion of public art. To successfully incorporate public art into these projects, staff identified a need for professional public art consulting and entered into an agreement with Art Builds Community to provide those services.

Due to the successful work completed under that agreement and the ongoing need for public art expertise, staff recommends authorizing a Contractual Services Agreement with Art Builds Community in an amount not to exceed $135,000 to provide on-call consulting services during FY 2024-2025. This will provide City staff access to public art expertise and resources to implement the tasks identified as priorities in the first year of the Public Art Master Plan May 2024 Update. The scope of work would include, but not be limited to:

- Assisting the City in identifying potential members for the Public Art Committee
- Assist staff on developing the request for qualifications and managing the implementation of the Utility Box Art program
- Assist staff on the incorporation of public art in the Central Overpass project
- Assist staff on the incorporation of public art in the Old Town Streetscape project

FISCAL IMPACT

Staff requests authorization to amend the 2024-2026 Biennial Budget and Capital Improvement Plan to allocate $135,000 from the fund balance of the Art in Public Places Fund (Fund 626) for this agreement.

Additionally, this authorization includes the ability to carry over any unused appropriation into the next fiscal year.

REVIEW AND APPROVAL

Prepared by - Roya Gonzalez, Senior Management Analyst
Reviewed by - Lenka Hovorka, Assistant City Manager
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK AUTHORIZING THE CITY MANAGER TO EXECUTE A CONTRACTUAL SERVICES AGREEMENT WITH ART BUILDS COMMUNITY, LLC. FOR PUBLIC ART CONSULTING SERVICES AND AUTHORIZING AN AMENDMENT OF THE 2024-2026 BIENNIAL BUDGET AND CAPITAL IMPROVEMENT PLAN TO APPROPRIATE ART IN PUBLIC PLACES FUNDS TO FUND THIS AGREEMENT

WHEREAS, on June 13, 2024 City Council approved the Public Art Master Plan May 2024 Update; and

WHEREAS, the Public Art Master Plan May 2024 Update includes a year one implementation plan with several projects and administrative tasks; and

WHEREAS, the City will require public art consulting service to augment staff resources and provide public art expertise to successfully implement those tasks; and

WHEREAS, based on staff's evaluation, Art Builds Community, LLC is a qualified firm that can provide those services; and

WHEREAS, Art Builds Community's costs to provide public art consulting services are not to exceed $135,000.

NOW THEREFORE, BE IT RESOLVED that the City Council of the City of Newark herby authorizes the City Manager to execute the Contractual Services Agreement in a form approved by the City Attorney, with Art Builds Community, LLC. in an amount not to exceed $135,000 for public art consulting services.

BE IT FURTHER RESOLVED that the City Council of the City of Newark hereby authorizes an amendment to the 2024-2026 Biennial Budget and Capital Improvement Plan by appropriating $135,000 as follows:

FROM:

Description	Account	Amount
Art in Public Places Fund Balance	626.3000	$135,000

TO:

Description	Account	Amount
Art in Public Places Contractual Services	626.20.020.200.6221	$135,000

BE IT FURTHER RESOLVED that the City Council of the City of Newark hereby further authorizes the carryover of any unused appropriation from this allocation into the following fiscal year.

STAFF REPORT
Item F. 1.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Richard Martinez, Emergency Coordinator
SUBJECT	Adopt a resolution approving the 2024 Tri-City Local Hazard Mitigation Plan Update

SUMMARY AND RECOMMENDATION

The Federal Emergency Management Agency (FEMA) requires communities to have a current and approved local hazard mitigation plan. The City's 2017 Local Hazard Mitigation Plan was recently updated through a multi-jurisdictional collaborative, community engagement process. Staff recommends that the City Council adopt a resolution approving the City of Newark 2024 Tri-City Local Hazard Mitigation Plan Update and City of Newark Annex B.

BACKGROUND

In 1988 Congress enacted the Stafford Act, which amended the Federal Disaster Relief Act of 1974. The Stafford Act established the need for Disaster Preparedness and Mitigation Assistance and established a fund to assist states in preparing for pre-disaster mitigation plans. The Act establishes and details preparation of a community's Local Hazard Mitigation Plan (LHMP) and authorized the President to promulgate regulations through the Federal Emergency Management Agency (FEMA) that require communities to have a current and approved plan to be eligible for Pre-Disaster Mitigation (PDM) project grant funding.

The Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) requires local governments to develop and adopt pre-disaster mitigation plans in order to minimize property damage and the risk to public health and safety that might otherwise result from the effects of a natural or human-made disaster. A Federal Emergency Management Agency (FEMA) approved plan also allows the City to be eligible for FEMA Pre-Disaster Mitigation and Hazard Mitigation Grant programs. Such plans identify the hazards a community or region faces, assesses their vulnerability to the hazards, and identifies specific actions that can be taken to reduce these risks.

In 2006, the State of California passed Assembly Bill 2140 that allows cities to adopt FEMA approved LHMPs into the Safety Element of the General Plan. AB2140 requires

jurisdictions to adopt the LHMP into the Safety Element of the General Plan in order to be fully eligible for disaster relief funding under the California Disaster Assistance Act. In 2015, California passed Senate Bill (SB) 379, which requires assessment of vulnerabilities and risks associated with climate change to be incorporated into the LHMP.

The Federal Emergency Management Agency Disaster Mitigation Act of 2000 as amended in the Stafford Act as part of the Federal Regulations, Stafford Act Title 44, Chapter 1, Part 201 also requires LHMPs to be updated every five years. The City of Newark last adopted a Local Hazard Mitigation Plan (LHMP) in 2017, identifying mitigation measures to reduce the risks posed by potential hazards and to strengthen community resilience. The LHMP is also incorporated by reference into the Safety Element of the General Plan and forms the basis of several of the General Plan policies, ensuring a coordinated approach to public safety and qualifying the City for additional funding opportunities (consistent with California Government Code Section 65302.6).

To update the 2017 LHMP, the City sought funding FEMA provides through the California Office of Emergency Services (Cal OES) to award funding to cities and counties to develop a LHMP. In 2022, the City of Fremont was awarded $250,000 to prepare a multi-jurisdictional LHMP that included five partners - the City of Newark, City of Fremont, City of Union City, Alameda County Water District (ACWD) and Union Sanitary District (USD). The partnership was formed to pool resources and to create a uniform hazard mitigation strategy that can be consistently applied to the defined planning area and used to ensure eligibility for specified grant funding success.

On February 14, 2023, the City Council approved a Memorandum of Understanding (MOU) via Resolution No. 11,471 between the City of Newark, City of Union City, City of Fremont, Alameda County Water District, and Union Sanitary District for the development of a Tri-City Local Hazard Mitigation Plan (Plan). These partners then embarked on a planning process to prepare for and lessen the impacts of specified natural hazards through the development of the Plan, including engaging steering and planning committees, stakeholders and the community to develop the plan. This effort represents the fourth comprehensive update to the initial hazard mitigation plan. The initial plan was approved by the Federal Emergency Management Agency (FEMA) in November 2005 and developed in partnership with the Association of Bay Area Governments (ABAG). The second update was another regional effort lead by ABAG in 2010. The third (and current) update was a 2016-2021 plan adopted in 2017 that included the cities of Newark and Union City, Alameda County Water District, Union Sanitary District, and Newark Unified School District. The planning area for the hazard mitigation plan then was defined as the Union City/Newark Operational Area.

In the latest revision, the 2024 Tri-City LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within the boundaries of the cities of Newark, Union City, and Fremont, as well as the service areas of the special districts of Alameda County Water District and the Union Sanitary District. This Plan was developed with the assistance of Foster Morrison Consulting, Ltd. (Foster Morrison) with the planning area now defined as the Tri-City Operational Area. FEMA

and the California Office of Emergency Services reviewed the Plan and determined it is eligible for their approval, pending approval by the governing boards of each jurisdiction.

DISCUSSION/ANALYSIS

Mitigation is defined in this context as any sustained action taken to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation planning is the systematic process of learning about the hazards that can affect the community, setting clear goals, identifying appropriate actions and following through with an effective mitigation strategy. Mitigation encourages long-term reduction of hazard vulnerability and can reduce the enormous cost of disasters to property owners and all levels of government. Mitigation can also protect critical community facilities, reduce exposure to liability, and minimize post-disaster community disruptions.

The 2024 Tri-City LHMP Update (Plan) consists of seven chapters in the Base Plan, followed by Annexes for each jurisdiction and special district, as well as accompanying Appendices. Annex B is the City of Newark's jurisdictional annex. Each jurisdiction and special district's annex include the following sections: Introduction, Planning Process, Community Profile, Risk Assessment, Capability Assessment, and Mitigation Strategy. Additionally, the Plan is aligned with the goals, objectives and priorities of the State's multi-hazard mitigation plan.

A Planning Committee comprised of representatives from all jurisdictions and special districts, in association with contractor Foster Morrison, worked together to develop the Plan. All participating partners have been responsible for assisting in the development of the hazard and vulnerability assessments and the mitigation action strategies for their respective jurisdictions and special districts. The Plan presents the accumulated information in a unified framework to ensure a comprehensive and coordinated plan covering the entire Tri-City Operational Area. Each planning partner has been responsible for the review and approval of their individual sections of the Plan.

Aside from the Planning Committee, a Steering Committee comprised of representative stakeholders from the City of Newark, City of Union City, and City of Fremont, non-local government and public representatives was established to guide Plan development. Residents were asked to contribute by sharing local knowledge of vulnerabilities to natural hazards based on past occurrences. Public involvement was also solicited through a comprehensive public outreach campaign that included three rounds of public meetings, web-based information, a questionnaire, and multiple social media updates.

With the exception of dam failure, this plan does not provide a full risk assessment of human-caused hazards. For Newark, the following hazards were considered a priority for purposes of mitigation action planning in the Plan:

- Climate Change (incorporated as a summary assessment of current and anticipated impacts for each identified hazard of concern)
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage

- Earthquake
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Landslides
- Levee Failure
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Severe Weather: High Winds and Tornadoes
- Tsunami
- Wildfire

To mitigate these hazards, 17 specific actions were identified and are outlined in Table B-74 of the attachment titled "Tri-City LHMP Update Annex B City of Newark". Nine of the 17 mitigation actions were newly added and the remaining eight were carried over from the former LHMP adopted in 2017. Background information and details on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. These mitigation actions were developed based on the mitigation strategy comprised of seven goals developed by the Planning team to reduce risks and vulnerabilities to identified natural hazards within the Tri-City Planning area.

Upon adoption of the Plan and the City of Newark's Annex, Newark will be eligible to apply for specified grants. The adoption of the plan ensures continued eligibility for funding under FEMA's Hazard Mitigation Assistance (HMA) programs. The grant funds are made available to states and local governments and can be used to implement the long-term hazard mitigation measures specified within the City's Annex of the Plan before and after a major disaster declaration. The Plan is considered a living document such that, as awareness of additional hazards develops and new strategies and projects are conceived to offset or prevent losses due to natural disasters, it will be evaluated and revised on a continual basis in the five-year time frame. The next required written update of the Plan must be completed by mid-2029.

FISCAL IMPACT

There is no fiscal impact associated with this action.

REVIEW AND APPROVAL

Prepared by - Richard Martinez, Emergency Services Coordinator
Reviewed by - Lenka Hovorka, Assistant City Manager
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

Resolution - Tri-City LHMP Update

Tri-City LHMP Update Report
Tri-City LHMP Update Annex B City of Newark
Tri-City LHMP Update Appendix A Planning Process
Tri-City LHMP Update Appendix B References
Tri-City LHMP Update Appendix C Mitigation Strategy
Tri-City LHMP Update Appendix D Adoption Resolution
Tri-City LHMP Update Appendix E Threatened and Endangered Species
Tri-City LHMP Update Appendix F Critical Facilities
Tri-City LHMP Update Appendix G Survey Results
Tri-City LHMP Update Appendix H Hazus Reports
Presentation

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK ADOPTING THE 2024 TRI-CITY LOCAL HAZARD MITIGATION PLAN UPDATE

WHEREAS, the City of Newark recognizes the threat that natural hazards pose to people and property within City of Newark; and

WHEREAS, the City of Newark has prepared a multi-hazard mitigation plan, hereby known as the 2024 Tri-City Local Hazard Mitigation Plan (LHMP) Update, in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS, the 2024 Tri-City LHMP Update, identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in City of Newark from the impacts of future hazards and disasters; and

WHEREAS, adoption by the City of Newark demonstrates its commitment to hazard mitigation and achieving the goals outlined in the 2024 Tri-City LHMP Update; and

WHEREAS, the City of Newark seeking Federal Emergency Management Agency (FEMA) approval of hazard mitigation plan desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the 2024 Tri-City LHMP Update by reference into the Safety Element of the General Plan in accordance with the requirements of AB 2140.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Newark hereby:

1. Adopts in its entirety, the 2024 Tri-City Local Hazard Mitigation Plan (LHMP) Update, including Annex B, the City of Newark jurisdictional annex, as well as accompanying Appendices;
2. Will use the adopted and approved portions of the LHMP to guide pre- and post-disaster mitigation of the hazards identified;
3. Will coordinate the strategies identified in the LHMP with other planning programs and mechanisms under its jurisdictional authority;
4. Will continue its support of the Planning Committee and continue to participate in the partnership for plan implementation and maintenance as described by the LHMP; and
5. Will help to promote and support the mitigation successes of all LHMP Planning Partners.

BE IT FURTHER RESOLVED that the City of Newark adopts the 2024 Tri-City Local Hazard Mitigation Plan (LHMP) Update by reference into the Safety Element of the General Plan in accordance with the requirements of AB 2140.

BE IT FURTHER RESOLVED that the City Council of the City of Newark will submit this resolution to the California Office of Emergency Services and FEMA Region IX officials to enable the plan's final approval in accordance with the requirements of the Disaster Mitigation Act of 2000 and to establish conformance with the requirement of AB 2140.

2024 Tri-City Local Hazard Mitigation Plan Update

March 2024









FOSTER MORRISON CONSULTING

Executive Summary

The cities of Fremont, Newark, and Union City, together with the Alameda County Water District (ACWD) and the Union Sanitary District (USD), comprise the five participating jurisdictions to the 2024 Tri-City Local Hazard Mitigation Plan (LHMP or Plan) Update. These organizations jointly agreed to develop a unified LHMP Update. This 2024 Tri-City LHMP combines and updates the separate 2016 City of Fremont LHMP, the 2017 Union City/Newark LHMP (which included the City of Newark, Union City, Alameda County Water District, and Union Sanitary District), and the 2022 Alameda County Water District LHMP Update.

The 2024 Tri-City LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within the boundaries of the cities of Fremont, Newark, and Union City, as well as the service areas of the special districts of Alameda County Water District and the Union Sanitary District. (hereinafter referred to as the Tri-City Planning Area or Planning Area). The following jurisdictions participated in the planning process and are seeking FEMA approval of the LHMP Update:

- City of Fremont
- City of Newark
- City of Union City
- Alameda County Water District
- Union Sanitary District

The purpose of this 2024 Tri-City LHMP Update and hazard mitigation planning is to reduce or eliminate long-term risk to people and property, critical facilities and infrastructure, natural and historic and cultural resources, and other community assets from future hazard events and natural disasters. This LHMP Update (which updates the 2016, 2017, and 2022 LHMPs into one LHMP) demonstrates the participating jurisdictions' commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. This LHMP Update was also developed in order for the five participating jurisdictions to be eligible for certain federal disaster assistance, specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC) program, and the Flood Mitigation Assistance (FMA) program.

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because additional expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Many natural disasters are predictable, and much of the damage caused by these events can be alleviated or even eliminated through natural hazard mitigation.

2024 LHMP Update Plan Development Process

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined,

prioritized, and implemented. This LHMP Update documents the 2024 hazard mitigation planning process and identifies relevant hazards, community risk and vulnerabilities, and mitigation strategies the participating jurisdictions will use to decrease vulnerability and increase resiliency and sustainability in the Tri-City Planning Area.

This LHMP Update was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390), the implementing regulations set forth by the Interim Final Rule published in the Federal Register on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007, and current FEMA guidance. Tri-City jurisdictions followed a planning process prescribed by FEMA as detailed in Table ES-1.

Table ES-1 Local Hazard Mitigation Planning Process

DMA Process	Modified CRS Process
1) Organize Resources	
201.6(c)(1)	1) Organize the Planning Effort
201.6(b)(1)	2) Involve the Public
201.6(b)(2) and (3)	3) Coordinate with Other Departments and Agencies
2) Assess Risks	
201.6(c)(2)(i)	4) Identify the Hazards
201.6(c)(2)(ii)	5) Assess the Risks
3) Develop the Mitigation Plan	
201.6(c)(3)(i)	6) Set Goals
201.6(c)(3)(ii)	7) Review Possible Activities
201.6(c)(3)(iii)	8) Draft an Action Plan
4) Implement the Plan and Monitor Progress	
201.6(c)(5)	9) Adopt the Plan
201.6(c)(4)	10) Implement, Evaluate, and Revise the Plan

The planning process began with the organizational phase to establish the Planning Committee, comprised of key Tri-City jurisdictional representatives, and other local and regional stakeholders; to involve the public; and to coordinate with other departments and agencies. A detailed risk assessment was then conducted followed by the development of a focused mitigation strategy for the Tri-City Planning Area and specific to each participating jurisdiction. Once approved by Cal OES and FEMA, this 2024 LHMP Update will be adopted and implemented by the five participating jurisdictions over the next five years.

Risk Assessment

A natural hazard risk assessment was conducted that identified and profiled hazards that pose a risk to the Tri-City Planning Area and to each participating jurisdiction, assessed the vulnerability of the Tri-City Planning Area and jurisdictions to these hazards, and examined the existing jurisdictional capabilities to mitigate identified hazards.

The Tri-City Planning Area is vulnerable to numerous hazards that are identified, profiled, and analyzed in this 2024 LHMP Update. Wildfires, floods, earthquakes, drought, dam failure, and other severe weather events are among the hazards that can have a significant impact on the Planning Area. Table ES-2 details the hazards identified for this 2024 LHMP Update.

Table ES-2 Tri-City Planning Area Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly Likely	Critical	High	–
Coastal Flooding and Sea Level Rise	Limited	Highly Likely	Limited	Med-High	High
Dam Failure	Sig – Ext.	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Extensive	Likely	Limited	Medium	High
Earthquake	Extensive	Occasional/ Highly Likely	Catastrophic	High	Low
Flood: 1%/0.2% annual chance	Significant	Occasional	Critical	High	High
Flood: Localized/Stormwater Flooding	Extensive	Highly Likely	Limited	Medium	Medium
Landslide	Limited	Likely	Limited	Medium	Medium
Levee Failure	Limited	Unlikely	Limited	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Highly Likely	Limited	Low-Med	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rain and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Negligible	Low-Med	Medium
Subsidence	Limited	Likely	Negligible	Low	Medium
Tsunami	Limited	Unlikely	Limited	Low-Med	Low
Wildfire	Limited	Highly Likely	Critical	Medium	Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Mitigation Strategy

Based on the results of the risk assessment, a mitigation action strategy was developed to reduce the Tri-City Planning Area's risk and vulnerability to identified natural hazards. The resulting mitigation strategy is comprised of goals and objectives, and a mitigation action plan which includes a series of mitigation actions, projects, and implementation measures. The 2024 LHMP Update Goals and Objectives are detailed below followed by a summary table of the 2024 mitigation actions and projects.

GOAL 1: Reduce risk and vulnerability of the Tri-City Planning Area to natural hazards (including climate change considerations) and prevent injuries, loss of life, and damage to property, economy, and the environment.

Objectives

- Minimize damage to homes, businesses, and public facilities.
- Promote public health and safety.
- Make every effort to reduce the impacts of hazards and disasters to potable and rechargeable water systems, as well as to wastewater systems.
- Promote a disaster resilient and healthy community that adapts to changing climate conditions and mitigates the effects of hazard impacts.
- Plan for and implement whole community risk reduction and resiliency strategies.
- Identify and integrate mitigation strategies into capital improvement programs.
- Reduce risk and vulnerability through the equitable and accessible planning and implementation of hazard mitigation actions and priorities.

GOAL 2: Provide protection and minimize impacts to critical facilities, infrastructure, and community lifelines. Create redundancy and reliability to significantly reduce risk of interruption or failure, minimize loss and the impacts of a disaster, and facilitate recovery.

Objectives:

- Identify and implement infrastructure improvements and risk reduction measures to ensure reliability and readiness before, during, and after a disaster.
- Identify and secure emergency equipment and resources vital to effective disaster mitigation, response, and recovery efforts.
- Develop contingency plans to reduce critical facility and infrastructure failures.

GOAL 3: Promote public education, awareness, and understanding of natural hazards and the risk and vulnerability they present to quality of life, property, environment, and the economy.

Objectives:

- Utilize a wide range of outreach and educational tools to engage and educate the whole community, including actions to take before, during, and after a hazard event to build a disaster resistant community.
- Foster a culture of resilience by energizing and educating the community.
- Encourage individual responsibility and self-sufficiency to minimize impacts to natural hazards.

- Establish and outreach evacuation routes and options for sheltering in place for all hazards including potentially large-scale disasters associated with earthquake and dam failure.

Goal 4: Build capacity and capabilities to increase disaster resilience for all hazards with a focus on the whole community.

Objectives:

- Develop and enhance public alert and warning capabilities and effectively communicate to the public.
- Build and support local capacity and reduce barriers to enable the community to prepare for, respond to, and recover from natural disasters.
- Establish and enhance interagency and public-private collaboration and relationships, data sharing, use of shared resources, and mitigation partnerships to reduce hazard related losses, and accelerate recovery, while being respectful of limited tax resources.
- Establish a financial plan specific to hazard mitigation, preparedness, response, and recovery efforts.
- Increase use of new technologies and high-quality data.
- Identify and enhance resources necessary to support implementation of capital projects and improvements that effectively mitigate hazards and impacts to the community.
- Develop and provide temporary response and recovery capabilities as needed to support communications, food and shelter, and other resources.
- Promote sharing of emergency plans and procedures with all regional partners, including critical partners such as the Red Cross.

Goal 5: Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards.

Objectives:

- Preserve and protect natural resources.
- Integrate and maximize the integration of natural and beneficial functions of environmental resources into mitigation actions and projects where feasible.
- Mitigate undesirable disaster outcomes for the environment, watersheds, and quality of life.

Goal 6: Integrate mitigation principles and strategies into laws, regulations, policies, and guidance to promote cross -functional planning and regulatory initiatives and to support equitable outcomes to benefit the whole community.

Objectives:

- Increase disaster resilience among historically underserved populations, individuals with a disability or access and functional needs, and communities disproportionately impacted by disasters and climate change.

Goal 7: Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake outcomes.

Objectives:

- Make life safety a priority.

- Make every effort to reduce impacts of earthquake to potable and rechargeable water systems and to wastewater systems.
- Conduct comprehensive, interagency earthquake planning to include mitigation strategies, education and outreach, and detailed procedures for response and recovery.
- Mitigate secondary hazards associated with earthquake events including fire ignition and spread and prioritize measures for minimizing impacts to critical facilities, infrastructure, and community lifelines.

Based on the risk assessment review and goal setting process, the HMPC identified mitigation actions (Table ES-3), which provide direction for reducing future hazard-related losses within the Tri-City Planning Area and specific to each participating jurisdiction.

Table ES-3 Tri-City Planning Area Mitigation Actions

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Fremont Actions					
Multi-Hazard Actions					
Action 1. In the Safety Element of the General Plan, update reference to the Local Hazard Mitigation Plan.	New Action	X	X		Public Information, Prevention, Property Protection
Action 2. Promote multi-hazard home mitigation strategies through public education and outreach.	2016 Action (modified)	X	X	X	Public Information, Prevention, Property Protection
Action 3. In the *Fremont Municipal Code*, continuously adopt, or exceed, California Building Code standards.	2016 Action (modified)	X	X		Prevention, Property Protection
Action 4. Maintain and expand auxiliary power capabilities at identified Critical Facilities.	2016 Action (modified)				Emergency Services, Structural Projects
Action 5. Enhance GIS mapping of natural hazard risks, with Critical Facilities and Lifeline overlays.	2016 Action (modified)				Prevention, Emergency Services
Action 6. Enhance GIS mapping of real-time threat and hazard conditions, with Emergency Services overlays.	2016 Action (modified)				Emergency Services, Public Information
Action 7. Improve failover data and voice communications capabilities in support of emergency response and continuity of operations.	2016 Action (modified)				Emergency Services
Action 8. Study the feasibility of constructing a new emergency operations center facility.	New Action				Emergency Services
Action 9. Enhance Public Alert and Warning capabilities.	New Action				Public Information, Emergency Services
Action 10. Improve the resilience and safety of electrical and natural gas utilities.	New Action	X	X		Prevention, Structural Projects
Climate Change Actions					
Action 11. Implement *Climate Ready Fremont*.	2016 Action	X	X		Prevention, Natural Resource Protection
Action 12. Implement the *Urban Forest Management Plan*.	New Action	X	X		Prevention, Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 13. Prioritize growth in transit-oriented development areas, as identified in the General Plan, and along designated corridors intersecting those areas. Preserve open space in shoreline and hill areas.	New Action	X	X		Property Protection, Natural Resource Protection
Coastal Flooding and Sea Level Rise; Dam Failure; Flood: 1%/0.2%, Localized Flooding; Levee Failure; Severe Weather: Heavy Rain and Storms, Wind Actions					
Action 14. Maintain or improve the City of Fremont's National Flood Insurance Program, Community Rating System classification.	2016 Action	X	X	X	Prevention, Property Protection, Natural Resource Protection, Emergency Services, Public Information
Action 15. CRS Activities 310-370: Maintain and expand Public Information regarding flood risk, conducting regular public outreach.	New Action	X	X	X	Prevention, Public Information, Property Protection
Action 16. CRS Activities 410-450: Maintain and update floodplain Mapping and Regulations	New Action	X	X	X	Prevention, Public Information, Natural Resource Protection
Action 17. Conduct flood damage reduction projects, including but not limited to regular drainange system maintenance and projects to identify, assess, and mitigate flood damage and impacts.	2016 Action (modified)	X	X	X	Prevention, Natural Resource Protection, Structural Projects
Action 18. CRS Activities 610-630: Maintain and improve flood Warning and Response capabilities.	New Action	X	X	X	Public Information, Emergency Services, Structural Projects
Action 19. Prevent and protect against embankment failure and flood-induced debris flows along waterways located within City-owned properties.	New Action	X	X	X	Prevention, Property Protection
Action 20. Become a recognized National Weather Service StormReady® community.	New Action	X	X	X	Public Information, Emergency Services
Action 21. Coordinate with owners of Extremely High Hazard and High Hazard dams which may inundate areas of Fremont by reviewing Emergency Action Plans, providing updated emergency contacts, and participating in periodic exercises.	New Action	X	X	X	Public Information, Emergency Services
Earthquake Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 22. Assess the status of all buildings subject to the "Earthquake Hazard Reduction and Retrofit" provisions of the *Fremont Municipal Code*. Conduct enforcement of any subject buildings which do not comply.	2016 Action (modified)	X			Prevention, Property Protection
Action 23. Develop seismically resilient water supply solutions to support post-earthquake firefighting operations.	2016 Action (modified)	X	X		Property Protection, Structural Projects, Emergency Services
Action 24. Evaluate seismic risk to Lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling.	New Action	X	X		Structural Projects
Action 25. Ensure development complies with the Alquist-Priolo Earthquake Fault Zone Act, and otherwise avoid development of public facilities or intensive residential, commercial, or industrial development in the immediate vicinity of the Hayward Fault.	New Action		X		Property Protection
Action 26. Implement earthquake early warning technologies to protect emergency services and the public.	New Action	X	X		Public Information Emergency Services Property Protection
Landslide Actions					
Action 27. Land protection from landslides through geotechnical monitoring	2016 Action (modified)	X	X		Prevention. Property Protection, Natural Resource Protection
Action 28. Prevent and protect against landslide and mudslides through slope stabilization, retaining walls, and other improvements.	New Action	X	X		Prevention. Property Protection, Natural Resource Protection
Tsunami Actions					
Action 29. Post Tsunami Zone and Tsunami Evacuation Route signage in designated Tsunami Hazard Areas.	New Action	X	X	X	Public Information
Action 30. Become a recognized National Weather Service TsunamiReady® community.	New Action	X	X	X	Public Information, Emergency Services
Wildfire Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 31. Conduct vegetation management on public and private property to reduce wildfire risk.	2016 Action (modified)	X	X		Prevention, Property Protection, Natural Resource Protection
Action 32. Support neighborhood-based applications to become recognized Firewise USA® Communities, in accordance with National Fire Prevention Association standards.	New Action	X	X		Prevention, Property Protection, Natural Resource Protection
Action 33. In areas prone to wildfire, prevent and protect against heat-induced failure of roadways and utilities by using heat-resistant construction materials.	New Action	X	X		Prevention, Structural Projects
Action 34. Improve air filtration systems at select public facilities (i. e., those otherwise fit to function as Air Quality Relief Centers) to effectively mitigate the effects of wildfire smoke.	New Action				Emergency Services
City of Newark Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	New Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	New Action	X	X		Public Information
Action 3. Continuously adopt the most current building standards and include appendices to mitigate hazards such as but not limited to Floods, Wildfires, and Earthquake.	New Action	X	X	X	Prevention
Action 4. Hardening and Retrofit of Existing Facilities	New Action	X	X		Prevention Emergency Services Property Protection
Action 5. Critical Facilities Back-Up Power	2017 Action	X	X		Prevention Emergency Services Property Protection
Action 6. Update and enhance the GIS data systems and mapping for water-related climate hazards / Mapping Water-Related Climate Hazards	New Action	X	X		Prevention
Climate Change Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 7. Sea Level Rise Resiliency Plan	2017 Action	X	X	X	Prevention
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 8. Maintain good standing under NFIP and create public outreach program and awareness	New Action	X	X	X	Prevention Public Information
Action 9. Partner with Alameda County Flood Control and Water Conservation District (ACFCD) to identify mitigation option for various projects	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 10. Alameda County Flood Control and Water Conservation Water District (ACFCD) Line H and Line I Improvements	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 11. Install storm drainage improvements at Lindsay Tract	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 12. Develop a Storm Drain Master Plan	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 13. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners	New action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Earthquake and Tsunami Actions					
Action 14. Complete railroad overcrossing at Central Avenue	2017 Action	X	X		Structural Projects
Action 15. Establish Tsunami zone & evacuation route signage in City's designated areas and education program	New action	X	X		Prevention Property Protection Natural Resource Protection
Wildfire and Severe Weather Extreme Heat Actions					
Action 16. Replace Eucalyptus Groves with non-hazardous tree species	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 17. Urban Forest Master Plan development	2017 Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Union City Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	2017 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	2017 Action	X	X	X	Public Information
Action 3. Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.	2017 Action	X	X		Emergency Services
Action 4. Incident Commanders Established And ICS Trained	2017 Action	X	X		Emergency Services
Action 5. Acquire Two Emergency Mobile Command Centers	2017 Action	X	X		Emergency Services
Action 6. Acquire four radio charging stations for spare radios	2017 Action	X	X		Emergency Services
Action 7. Consider Participation in Incentive-Based Programs such as the Community Rating System, Tree City and Storm Ready.	2017 Action	X	X	X	Prevention
Action 8. Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated alternate EOC site.	2017 Action	X	X		Emergency Services
Action 9. Acquire Emergency Generators for the City's Critical Facilities, Specifically Fire Station #31, Senior Center, and Corporation Yard	2017 Action	X	X		Property Protection Property Protection
Action 10. Conduct a Feasibility Study to Identify Temporary Morgue Facilities	2017 Action	X	X		Emergency Services
Action 11. Develop a Disaster Debris Management Plan	2017 Action	X	X	X	Prevention Emergency Services
Action 12. Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources.	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 13. Conduct a Feasibility Study to Review Necessary Improvement Required to Make Critical Facilities for Recovering Families After Crisis	New Action	X	X		Prevention Emergency Services

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 14. Establish a Broadband-WiFi network in the Station District	2017 Action	X	X		Prevention Emergency Services
Action 15. Establish a Broadband-WiFi Network Backbone Infrastructure along Major Throughfares Throughout the City.	2017 Action	X	X		Prevention Emergency Services
Climate Change Actions					
Action 16. Climate Action Plan Update	New Action	X	X	X	Prevention Property Protection Natural Resource Protection
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 17. Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	2017 Action	X	X	X	Prevention
Action 18. Implement Stormwater Master Plans	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 19. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners	New Action	X	X		Prevention Property Protection Natural Resource Protection
Drought Actions					
Action 20. Develop and Maintain a Landscape Design Manual to Provide General Guidance and Education to the Public on Water efficiency in Landscaping and to serve as a Resource for Water Efficient Landscape design and Installation Including lists of Recommended Site Appropriate Native and Drought-Tolerant Plant Species.	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Earthquake and Tsunami Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 21. Work with ACWD to Design and Install Seismically Resilient Backbone Pipeline through Liquefaction Soils in Union City.	2017 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 22. Conduct a Feasibility Study to Review the Highway Overpass Bridge of Alvarado-Niles Rd. over I-880, for any Seismic Upgrades.	2017 Action	X	X		Structural Projects
Action 23. Coordinate with the City of Hayward to Conduct a Feasibility Study to Review any Seismic Upgrades for the I-880 Overpass over Whipple Road	2017 Action	X	X		Structural Projects
Action 24. Construct Grade Separations on the Niles Subdivisions and the Oakland Subdivision in the Decoto Neighborhood and on the Coast Subdivision on Union City Blvd, Smith Street, Dyer Street, and Alvarado Blvd.	2017 Action	X	X		Structural Projects
Wildfire and Severe Weather Extreme Heat Actions					
Action 25. Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous or dead trees.	2017 Action	X	X		Prevention Natural Resource Protection
Action 26. Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources	2017 Action	X	X		Prevention Natural Resource Protection
ACWD Actions					
Multi-Hazard Actions					
Action 1. Develop and maintain an asset management program that tracks natural hazard events.	2022 Action	X	X	X	Prevention
Action 2. Reevaluate standby generator needs and purchase and install as needed	2022 Action	X	X		Prevention Emergency Services Property Protection
Action 3. Retrofit and/or update District tanks and reservoirs to improve seismic resilience.	2022 Action	X	X		Property Protection Structural Projects
Action 4. Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.	2022 Action	X	X		Prevention Emergency Services Property Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 5. Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.	2022 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 6. As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.	2022 Action	X	X		Prevention Property Protection Emergency Services
Action 7. Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.	2022 Action	X	X		Prevention Property Protection Emergency Services
Action 8. Continue to participate in local emergency response trainings and exercises.	2022 Action	X	X		Emergency Services
Action 9. Continue to integrate the capital improvement program with the LHMP.	2022 Action	X	X		Prevention Property Protection Structural Projects Emergency Services Natural Resource Protection
Drought and Water Shortage					
Action 10. Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.	2022 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 11. Install a second Deep Aquifer water well at the Mowry Wellfield.	2022 Action	X	X		Prevention Emergency Services Property Protection Natural Resource Protection
Action 12. Blend Facility for PFAS.	2022 Action	X	X		Prevention Structural Projects
Action 13. Complete a redesign of blending facility to allow low production and neat chemical feed.	2022 Action				Prevention Structural Projects
Action 14. Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.	2022 Action				Structural Projects Property Protection Natural Resource Protection
Earthquake Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 15. Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 16. Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 17. Enhance Booster Pumping to the Upper Zones (for example PR-1 or Seven Hills)	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
USD Actions					
Multi-Hazard Actions					
Action 1. Public Education Outreach	2017 Action	X	X		Property Protection Emergency Services
Action 2. Enhanced Treatment and Site Upgrade (ETSU)- Phase 1A Campus Building and Aeration Basin Modifications; Phase 1B Secondary Clarifiers & Effluent Facilities; Phase 1C Plant Equalization Storage	2017 Action	X	X		Property Protection Structural Projects
Climate Change Actions					
Action 3. Irvington Pump Station Solar & Battery Project	New Action	X	X		Property Protection Emergency Services
Action 4. Battery Storage & 3rd Cogen	New Action	X	X		Public Information
Sea Level Rise, Earthquake Actions					
Action 5. Field Ops Building Seismic Upgrade	2017 Action	X	X		Property Protection Structural Projects
Drought/Water Shortage Actions					
Action 6. Digester #8	New Action	X	X		Property Protection Structural Projects
Earthquake Actions					
Action 7. Seismic Retrofit of Concrete Structures	2017 Action	X	X		Property Protection Structural Projects
Action 8. Newark Pump Station Emergency Outfall	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 9. Seismic upgrade of Primary Clarifier 1-4	2017 Action	X	X		Property Protection Structural Projects

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Sea Level Rise, Subsidence Actions					
Action 10. Forcemain Alameda Creek Crossing Ground Stabilization	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection

Table of Contents

Chapters

1 INTRODUCTION 1-1

1.1 Purpose 1-1
1.2 Background and Scope 1-1
1.3 Tri-City Profile 1-2
1.3.1 History 1-3
1.3.2 Geography and Climate 1-3
1.4 Plan Organization 1-4

Chapter 2 What's New 2-1

2.1 What's New in the Plan Update 2-1
2.2 Summary of Significant Changes to Current Conditions, Planning Area Vulnerability, and Hazard Mitigation Priorities 2-2
2.3 2016/2017/2022 LHMP Mitigation Strategy Successes and Status 2-9
2.3.1. Success Stories 2-10
2.3.2. 2016/2017/2022 Mitigation Strategy Update 2-13

3 PLANNING PROCESS 3-1

3.1 Local Government Participation 3-1
3.2 The 10-Step Planning Process 3-3
3.2.1 Phase 1: Organize Resources 3-5
3.2.2 Phase 2: Assess Risks 3-26
3.2.3 Phase 3: Develop the Mitigation Plan 3-27
3.2.4 Phase 4: Implement the Plan and Monitor Progress 3-27

4 RISK ASSESSMENT 4-1

4.1 Hazard Identification: Natural Hazards 4-2
4.1.1. Methodology and Results 4-2
4.1.2. Disaster Declaration History 4-7
4.2 Tri-City Planning Area Assets Inventory and Growth and Development Trends 4-11
4.2.1. Assets Inventory 4-12
4.2.2. Growth and Development Trends 4-33
4.3 Hazard Profiles and Vulnerability Assessment 4-34
4.3.1. Severe Weather: General 4-43
4.3.2. Severe Weather: Extreme Cold and Freeze 4-45
4.3.3. Severe Weather: Extreme Heat 4-52
4.3.4. Severe Weather: Heavy Rains and Storms 4-62
4.3.5. Severe Weather: High Winds and Tornadoes 4-77
4.3.6. Climate Change 4-86

4.3.7. Coastal Flooding and Sea Level Rise 4-95
4.3.8. Dam Failure 4-113
4.3.9. Drought and Water Shortage 4-135
4.3.10. Earthquake 4-151
4.3.11. Flood: (1% and 0.2% Annual Chance) 4-260
4.3.12. Flood: Localized/Stormwater 4-280
4.3.13. Landslide 4-285
4.3.14. Levee Failure 4-296
4.3.15. Subsidence 4-307
4.3.16. Tsunami 4-312
4.3.17. Wildfire 4-320
4.3.18. Natural Hazards Summary 4-339
4.4 Capability Assessment 4-341

5 MITIGATION STRATEGY 5-1

5.1 Mitigation Strategy: Overview 5-1
5.1.1 Continued Compliance with NFIP 5-2
5.1.2 Integration of Mitigation with Post Disaster Recovery and Mitigation Strategy Funding Opportunities 5-2
5.2 Goals and Objectives 5-4
5.3 Identification and Analysis of Mitigation Actions 5-8
5.31 Prioritization Process 5-9
5.4 Mitigation Action Plan 5-11

6 PLAN ADOPTION 6-1

7 PLAN IMPLEMENTATION AND MAINTENANCE 7-1

7.1 Implementation 7-1
7.1.1 Role of Hazard Mitigation Planning Committee in Implementation and Maintenance 7-2
7.2 Maintenance 7-3
7.2.1 Maintenance Schedule 7-3
7.2.2 Maintenance Evaluation Process 7-3
7.2.3 Incorporation into Existing Planning Mechanisms 7-5
7.2.4 Continued Public Involvement 7-6

Appendices

Appendix A: Planning Process

Appendix B: References

Appendix C: Mitigation Strategy

Appendix D: Adoption Resolution

Appendix E: Threatened and Endangered Species

Appendix F: Critical Facilities

Appendix G: Survey Results

Appendix H: Hazus Scenarios

Abbreviations and Acronyms

Acronym	Definition
AB	Assembly Bill
ACE	Altamont Commuter Express
ACWD	Alameda County Water District
AEBM	Advanced Engineering Building Module
AEL	Annualized Earthquake Loss
AF	Acre-feet
ALERT	Automated Local Evaluation in Real Time
APG	California Adaptation Planning Guide
AQI	Air Quality Index
ASTDR	Agency for Toxic Substances and Disease Registry's
BAM	Best Available Map
BART	Bay Area Rapid Transit
BCA	Benefit Cost Analysis
BCEGS	Building Code Effectiveness Grading Schedule
BFE	Base Flood Elevation
BLM	Bureau of Land Management
BRIC	Building Resilient Infrastructure and Communities
CA-DWR	California Department of Water Resources
CAISO	California Independent System Operator
Cal EPA	Environmental Protection Agency
Cal OES	California Office of Emergency Services
CAP	Climate Adaptation Plan
CAS	Climate Adaptation Strategy
CAV	Community Assistance Visit
CBC	California Building Code
CCHPR	Climate Change and Health Profile Report
CCSM	Community Climate System Model
CDAA	California Disaster Assistance Act
CDBG	Community Development Block Grant
CDC	Center for Disease Control
CDFW	California Department of Fish and Wildlife
CDMS	Comprehensive Data Management System
CEMP	Comprehensive Emergency Management Program
CEQA	California Environmental Quality Act
CERT	Community Emergency Response Team
CFR	Code of Federal Regulations
CGS	California Geologic Survey

Acronym	Definition
CGS	California Geological Survey
CIP	Capital Improvements Plan
CLOMR	Conditional Letter of Map Revision
CNPS	California Native Plant Society
CNRA	California Natural Resource Agency
COG	Continuity of Government
COO	Continuity of Operations
CPUC	California Public Utilities Commission
CRIL	Community Resources for Independent Living
CRS	(National Flood Insurance Program's) Community Rating System
CRV	Contents Replacement Value
CVP	Central Valley Project
CWPP	Community Wildfire Protection Plan
DAC	Disadvantaged Community
DFIRM	Digital Flood Insurance Rate Map
DMA	Disaster Mitigation Act of 2000
DOF	Department of Finance
DSOD	Division of Safety of Dams
EBDA	East Bay Dischargers Authority
EF	Enhanced Fujita
EOC	Emergency Operations Center
EPSS	Enhanced Powerline Safety Settings
ESPM	University of California, Berkeley's Department of Environmental Science, Policy, and Management
ETSU	Enhanced Treatment and Site Upgrade
F	Fujita
FEMA	Federal Emergency Management Agency
FF	Finish Floor
FHSZ	Fire Hazard Severity Zone
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FMA	Flood Mitigation Assistance Program
FPA	Floodplain Administrator
FRA	Federal Responsibility Area
FRAP	Fire and Resource Assessment Program
FWS	US Fish and Wildlife Service
GFDL	Geophysical Fluid Dynamics Laboratory
GHG	Greenhouse Gases
GIS	Geographic Information Systems

Acronym	Definition
GPH	Gallons per Hour
GRASP	Geospatial Research, Analysis & Services Program
HHPD	High Hazard Potential Dam
HI	Heat Index
HMGP	Hazard Mitigation Grant Program
HMPC	Hazard Mitigation Planning Committee
ICS	Incident Command System
IPCC	Intergovernmental Panel on Climate Change
IRWM	Integrated Regional Water Management
LAG	Lowest Adjacent Grade
LHMP	Local Hazard Mitigation Plan
LOMA	Letter of Map Amendment
LOMC	Letters of Map Change
LOMR	Letter of Map Revision
LRA	Local Responsibility Area
MHI	Median Household Income
MMI	Modified Mercalli Intensity Scale
MSL	Mean Sea Level
MW	Megawatt
NASA	National Aerospace and Science Agency
NAVD	North American Vertical Datum
NCDC	National Climactic Data Center
NDMC	National Drought Mitigation Center
NEHRP	National Earthquake Hazards Reduction Program
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NIDIS	National Integrated Drought Information System
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NWS	National Weather Service
OHP	Office of Historic Preservation
PDM	Pre-Disaster Mitigation Program
PIT	Point-in-time Homeless Count
PM	Particulate Matter
PNAS	Proceedings of the National Academy of Sciences
PSPS	Public Safety Power Shutoff
RCP	Representative Concentration Pathway
RD3	Rubber Dam 3

Acronym	Definition
RHNA	Regional Housing Need Allocation
SAC-SJ	Sacramento-San Joaquin Valley
SB	Senate Bill
SBA	Small Business Administration
SEMS	Standard Emergency Management System
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Act
SHBC	State Historical Building Code
SRA	State Responsibility Area
SSMP	Sanitary Sewer Master Plan
SVI	Social Vulnerability Index
SWP	State Water Project
UAV	Unmanned Aerial Vehicle
UBC	Uniform Building Code
UC Transit	Union City Transit
UCERF	Uniform California Earthquake Rupture Forecast
UFMP	Urban Forest Management Plan
UHF	Ultra High Frequency
UNFCCC	United Nations Framework Convention on Climate Change
UPRR	Union Pacific Railroad
URM	Unreinforced Masonry
USACE	US Army Corp of Engineers
USD	Union Sanitary District
USDA	United States Department of Agriculture
USGS	United States Geologic Survey
UWMP	Urban Water Management Plan
VHFHSZ	Very High Fire Hazard Severity Zone
WCD	Water Control District
WRCC	Western Regional Climate Center
WSOC	Wildfire Safety Operations Center
WUI	Wildland Urban Interface
WWTP	Wastewater Treatment Plant

Chapter 1 Introduction

1.1 Purpose

The cities of Fremont, Newark, and Union City, together with the Alameda County Water District (ACWD) and the Union Sanitary District (USD), comprise the five participating jurisdictions to the 2024 Tri-City Local Hazard Mitigation Plan (LHMP or Plan) Update. These organizations jointly agreed to develop a unified LHMP Update. This 2024 Tri-City LHMP combines and updates the separate 2016 City of Fremont LHMP, the 2017 Union City/Newark LHMP (which included the City of Newark, Union City, Alameda County Water District, and Union Sanitary District), and the 2022 Alameda County Water District LHMP Update.

The purpose of this 2024 Tri-City LHMP Update is to guide hazard mitigation planning to better protect the people and property of the Tri-City area from the effects of natural disasters and hazard events., while simultaneously improving interlocal cooperation This LHMP Update (which updates the 2016, 2017, and 2022 LHMPs into one LHMP) demonstrates the Tri-City area's commitment to reducing risks from hazards and serves as a tool to help decision makers direct mitigation activities and resources. This LHMP Update was also developed so that the five participating jurisdictions can maintain eligibility for certain federal disaster assistance, specifically, the Federal Emergency Management Agency's (FEMA) Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC) program, and the Flood Mitigation Assistance (FMA) program.

1.2 Background and Scope

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters, because most expenses to insurance companies and nongovernmental organizations are not reimbursed by tax dollars. Although the timing of natural disasters is unpredictable, their occurrence is largely predictable over time, and much of the damage caused by these events can be significantly reduced.

Hazard mitigation is defined by FEMA as "any sustained action taken to reduce or eliminate long-term risk to human life and property from a hazard event." The results of a three-year, congressionally mandated independent study to assess future savings from mitigation activities provide evidence that, overall, mitigation activities are highly cost-effective investments. On average, each dollar spent on mitigation saves society an average of $6 in avoided future losses in addition to saving lives and preventing injuries (National Institute of Building Science Multi-Hazard Mitigation Council 2019 Interim Report).

Hazard mitigation planning is the process through which hazards that threaten communities are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined, prioritized, and implemented. This LHMP Update documents the Tri-City area's hazard mitigation planning process and identifies relevant hazards, vulnerabilities, and mitigation strategies the Tri-City jurisdictions will use to decrease vulnerability and increase resiliency and sustainability.

The 2024 Tri-City LHMP Update is a multi-jurisdictional plan that geographically covers the entire area within the boundaries of the cities of Fremont, Newark, and Union City, as well as the service areas of the special districts of Alameda County Water District and the Union Sanitary District. (hereinafter referred to as the Tri-City Planning Area or Planning Area). The following jurisdictions participated in the planning process and are seeking FEMA approval of the LHMP Update:

- City of Fremont
- City of Newark
- City of Union City
- Alameda County Water District
- Union Sanitary District

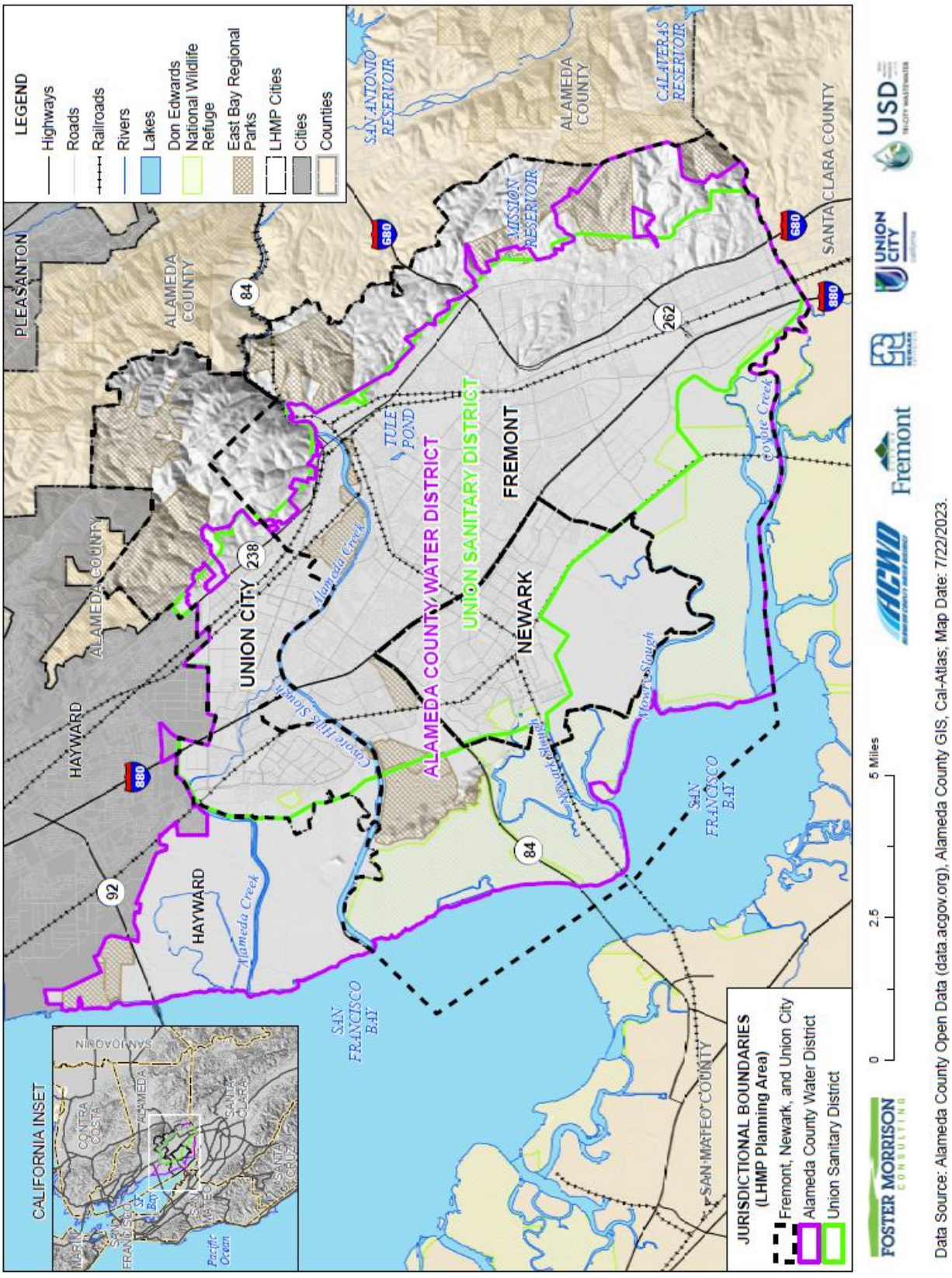
This LHMP Update was prepared pursuant to the requirements of the Disaster Mitigation Act of 2000 (Public Law 106-390) and the implementing regulations set forth by the Interim Final Rule published in the Federal Register on February 26, 2002, (44 CFR §201.6) and finalized on October 31, 2007. (Hereafter, these requirements and regulations will be referred to collectively as the Disaster Mitigation Act (DMA) or DMA 2000.) This planning effort also follows FEMA's most current effective LHMP Preparation and Review Guidance, LHMP Policy Guide FP 206-21-0002 effective April 19, 2023, and the FEMA National Flood Insurance Program (NFIP) Community Rating System (CRS) 2017 Coordinator's Manual, with 2021 Addendum. While DMA 2000 emphasized the need for mitigation plans and more coordinated mitigation planning and implementation efforts, the regulations establish the requirements that local hazard mitigation plans must meet in order for a local jurisdiction to be eligible for certain federal disaster assistance and hazard mitigation funding under the Robert T. Stafford Disaster Relief and Emergency Act (Public Law 93-288). Because the Tri-City Planning Area is subject to many kinds of hazards, access to these programs is vital.

Information in this LHMP Update will be used to help guide and coordinate mitigation activities and decisions for local land use policy in the future. Proactive mitigation planning will help reduce the cost of disaster response and recovery to communities and their residents by protecting public health and safety and critical community facilities; reducing liability exposure; and minimizing overall community impacts and disruptions. In the past, the Tri-City Planning Area has been affected by numerous hazards on multiple occasions. The participating jurisdictions are thus committed to reducing future impacts from hazard events and maintaining eligibility for mitigation-related federal funding.

1.3 Tri-City Profile

The Tri-City Planning Area is located on the San Francisco Bay. The California Department of Finance estimated the 2023 population to be 229,467 in Fremont, 47,459 in Newark, and 66,754 in Union City. Figure 1-1 shows the Tri-City Planning Area.

Figure 1-1 Tri-City Planning Area



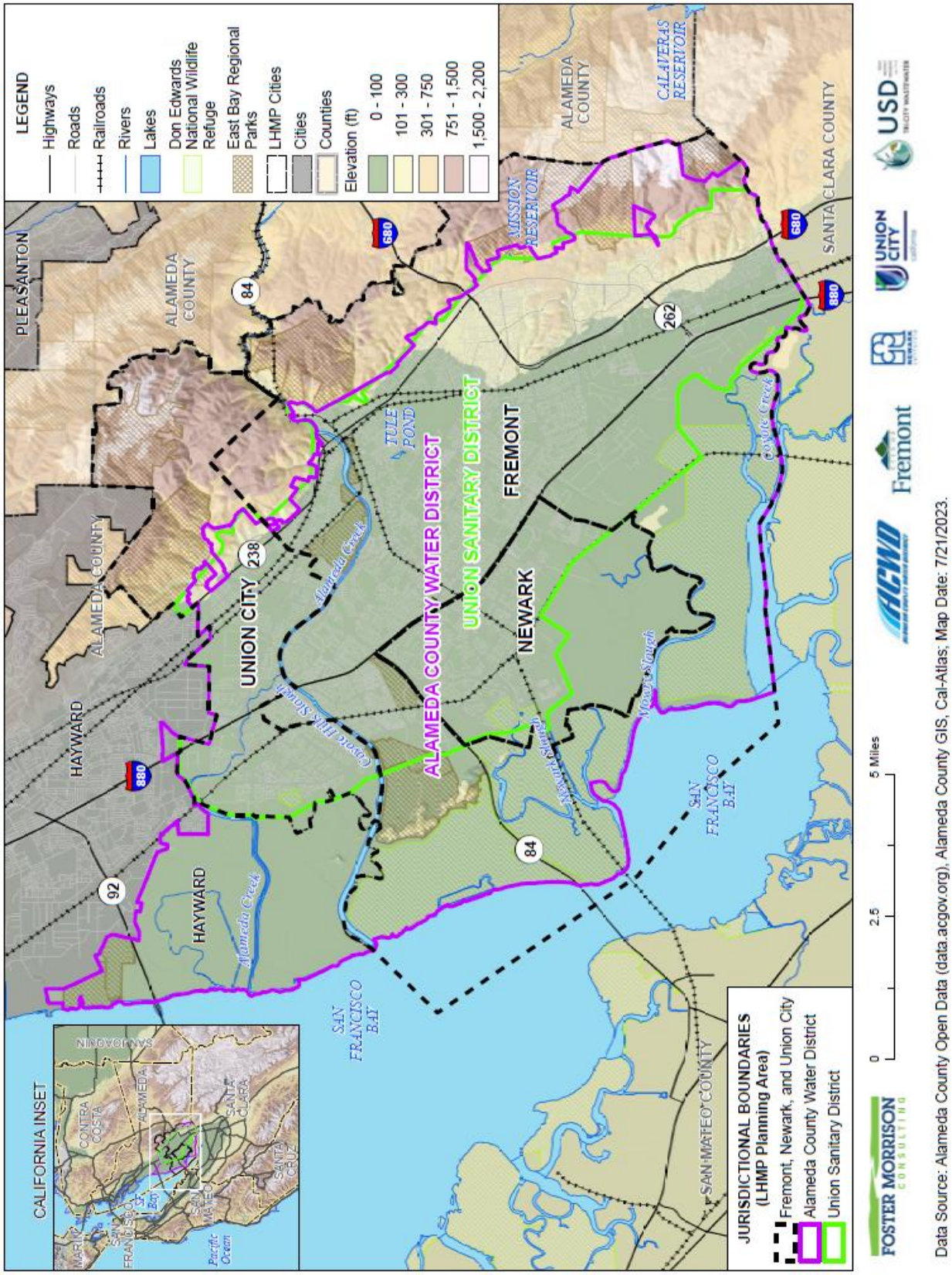
1.3.1. History

A history of each jurisdiction is included in their respective LHMP Update annexes.

1.3.2. Geography and Climate

The Tri-City area is located in the East Bay, which is the eastern region of the San Francisco Bay Area and in Alameda and Contra Costa Counties. The Tri-City area is served by I-880, I-680, and State Highways 84, 238 and 262. Topography of the Tri-City Planning Area is variable ranging from 0 feet above mean sea level (msl) along the Bay shore, and up to 2,700 feet above msl in the eastern portions, illustrated in Figure 1-2.

Figure 1-2 Tri-City Planning Area – Elevations



According to the National Weather Service, the climate in the Tri-City Planning Area is a Mediterranean climate, characterized by warm, dry summers and mild, wet winters. Average temperatures in the Tri-City area range from the low 50s in the winter to the mid-60s in the summer months. Record high temperature for the area was 109°F on September 14, 1971. Record low was 26°F on December 12, 1972. Days below freezing are rare in the Tri-City area, with an annual average of 0.3 days below 32°F. Rainfall is the chief form of precipitation, with most rainfall occurring between October and April. Average rainfall is approximately up 23 to 25 inches. The highest recorded annual rainfall for the Tri-City area was in 1998, when 41 inches fell; while the lowest reported annual rainfall occurred in 1976 when 9.9 inches fell. Record 24-hour precipitation was 4.74 inches on January 4, 1982.

1.4 Plan Organization

The 2024 Tri-City LHMP Update is organized as follows:

- Chapters
  - ✓ Chapter 1: Introduction
  - ✓ Chapter 2: Community Profile
  - ✓ Chapter 3: Planning Process
  - ✓ Chapter 4: Risk Assessment
  - ✓ Chapter 5: Mitigation Strategy
  - ✓ Chapter 6: Plan Adoption
  - ✓ Chapter 7: Plan Implementation and Maintenance

- Annexes
  - ✓ Annex A: City of Fremont
  - ✓ Annex B: City of Newark
  - ✓ Annex C: City of Union City
  - ✓ Annex D: Alameda County Water District
  - ✓ Annex E: Union Sanitary District

- Appendices
  - ✓ Appendix A: Planning Process
  - ✓ Appendix B: References
  - ✓ Appendix C: Mitigation Strategy
  - ✓ Appendix D: Adoption Resolution
  - ✓ Appendix E: Threatened and Endangered Species
  - ✓ Appendix F: Critical Facilities
  - ✓ Appendix G: Survey Results
  - ✓ Appendix H: Hazus Reports

Chapter 2 What's New

44 CFR §201.6(d)(3) and §201.7(d)(3): A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.

The previous 2016/2017/2022 Local Hazard Mitigation Plans (LHMP), that are being updated as part of this 2024 Tri-City LHMP Update, contained descriptions of planning processes, the risk assessments of identified hazards, and mitigation strategies for reducing the risk and vulnerability from these hazards. Since approval of the 2016/2017/2022 LHMPs by FEMA, progress has been made on implementation of the 2016/2017/2022 mitigation strategies, as applicable to the respective participating jurisdictions. As part of this LHMP Update, a thorough review and update of the 2016/2017/2022 LHMPs was conducted to ensure that this 2024 Tri-City LHMP Update reflects current conditions and priorities in order to realign the updated mitigation strategy for the forthcoming five-year planning period. This section of this LHMP Update includes the following:

- **What's New in the LHMP Update**. Section 2.1 provides an overview of the approach to updating the previous LHMPs and identifies new analyses, data and information included in this LHMP Update to reflect current community conditions. This includes a summary of new hazard and risk assessment data as it relates to the Tri-City Planning Area and participating jurisdictions as well as information on current and future development trends affecting hazard vulnerability and related issues. The actual updated data, discussions, and associated analyses are contained in their respected sections within this LHMP Update.
- **Summary of Significant Changes to Current Conditions, Planning Area Vulnerability, and Hazard Mitigation Program Priorities**. Section 2.2 provides a summary of significant changes in current conditions, changes in hazard vulnerability, and any resulting modifications to the Tri-City hazard mitigation program priorities.
- **2016/2017/2022 Mitigation Strategy Status and Successes**. Section 2.3.2 provides a description of the status of mitigation actions from the 2016/2017/2022 LHMPs and also indicates whether a project is no longer relevant or is recommended for inclusion in the updated mitigation strategy. This section also highlights key mitigation success stories since the 2016/2017/2022 LHMPs.

This What's New section provides documentation of Tri-City Planning Area's progress or changes in risk and vulnerability to hazards and overall hazard mitigation programs. Completion of this LHMP Update further provides documentation of the five participating jurisdictions to this Tri-City Planning Area's continued commitment and engagement in the hazard mitigation planning process.

2.1 What's New in the Plan Update

Preparing the 2024 LHMP Update involved a comprehensive review and update of each section of the 2016/2017/2022 LHMPs and includes an assessment of the success of the participating jurisdictions in evaluating, monitoring, and implementing the mitigation strategy outlined in the 2016/2017/2022 LHMPs.

Only the information and data still valid from the 2016/2017/2022 LHMPs were carried forward as applicable into this LHMP Update.

Also to be noted, Chapter 7 Implementation and Maintenance of this LHMP Update identifies key requirements for updating future plans:

- Consider changes in vulnerability due to action implementation of mitigation actions;
- Document success stories where mitigation actions have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to inventories; and
- Incorporate new recommended mitigation actions or changes in the prioritization of mitigation actions.

These requirements and others as detailed throughout this Plan were addressed during this LHMP Update process.

As part of its comprehensive review and update of each section of the LHMP Update, the participating jurisdictions recognized that updated data, if available, would enhance the analysis presented in the risk assessment and utilized in the development of the updated mitigation strategy. Highlights of new data used for this LHMP Update are identified below and also sourced in context within Chapter 4, Risk Assessment and the jurisdictional annexes. Sources of specific data used are also provided throughout this LHMP Update and included in Appendix D References. This new data and associated analysis contributed to the development of the updated risk assessment and mitigation strategy presented in Chapter 4 and Chapter 5 of this LHMP Update, as well as within the jurisdictional annexes to this Plan.

Highlights of new information and analyses contained in this LHMP Update includes the following:

- Multiple previous plans were merged into a single planning process: the 2016 City of Fremont LHMP, the 2017 City of Newark, Union City, Alameda County Water District, and Union Sanitary District LHMP, and the 2022 Alameda County Water District Plan Update. This effectively meant an entire rewrite of each participating jurisdiction's plan and annex.
- Hazards were harmonized, and levee failure and subsidence were added as hazards.
- Disaster declarations were updated, including federal, state, and USDA disaster declarations. NCDC Storm Events and past historic hazard occurrences since the previous plans were added for each jurisdiction.
- A Local Concerns section was added to each jurisdiction's vulnerability assessment to capture local issues and to support the resulting mitigation strategy.
- Incorporation and analysis of the updated California Department of Finance population data was utilized for this LHMP Update.
- Environmental justice concerns were addressed in portions of this Plan Update. This was done for each jurisdiction in the Tri-City Planning Area.
- A detailed discussion of socially vulnerable and underserved populations were added to the Base Plan and to each jurisdictional annex.

- A new critical facility definition was created and new critical facility data was gathered for all jurisdictions. This allowed for additional analysis of critical facilities for each mapped hazard in the Tri-City Planning Area.
- Community lifelines were added to all hazard discussions.
- Development since the last plan was analyzed in detail for each jurisdiction.
- Future development was gathered from each jurisdiction and analyzed using the most recent hazard data. This was included in each participating jurisdiction's annex.
- A new section on Power Shortage/Failure was added. Public Safety Power Shutoff events were also added.
- Cal-Adapt and other state and local climate change data was added to the climate change section, as well as to other hazards that are exacerbated by climate change.
- Coastal flooding and sea level rise were studied in much greater detail. These areas were mapped using the most recent hazard data. An analysis was performed on values at risk (including populations, structures, critical facilities, and future development).
- New dam data provided by Cal OES and CA DSOD was used for the dam inventory and analysis. This data included an updated hazard classification for identified dams and updated inundation mapping. Values at risk to dam inundation was analyzed. Critical facilities at risk to dams were tabulated. In addition, EAP data from each dam was added (as applicable) to each jurisdiction's annex.
- Level 2,3 Hazus runs were performed on four separate earthquake shake scenarios for the Tri-City Planning Area (and for each participating jurisdiction) on 4 different primary fault scenarios.
- Advanced Engineering Building Module reports were run for each updated critical facility. This shows likely damages to these buildings from each of the four Hazus earthquake scenarios that were run.
- Fire following earthquake was added to the earthquake hazard and also included in the enhanced Hazus analysis for this LHMP Update.
- Liquefaction and earthquake-induced landslide discussions were added to the earthquake hazard profile and vulnerability analysis. An analysis was performed on values at risk (including populations, structures, critical facilities, and future development).
- Deep seated landslide data was added to the landslide hazard profile and vulnerability analysis. An analysis was performed on values at risk (including populations, structures, critical facilities, and future development).
- Levee failure was viewed as a hazard separate from flooding in this LHMP Update. An analysis was performed on values at risk (including populations, structures, critical facilities, and future development) in the DFIRM X Protected by Flood zones.
- Economic assets and community activities of value discussions were added to the vulnerability assessment of all hazards.
- To better meet the revised FEMA plan review tool, a more extensive analysis of the extents to identified hazards was conducted and included in this LHMP Update.
- A greater study of all jurisdiction's mitigation capabilities was added.
- All previous mitigation actions were updated, and many new actions were added to this LHMP Update.
- Detailed hazard analysis on both assets at risk and assets in District Service Territories was performed for USD and ACWD.

2.2 Summary of Significant Changes to Current Conditions, Planning Area Vulnerability, and Hazard Mitigation Priorities

This section provides a summary by hazard of significant changes in current conditions, Tri-City Planning Area vulnerability, and resulting modifications to the Tri-City participating jurisdictions' mitigation program priorities since the 2016/2017/2022 LHMPs:

20224 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Climate Change			X

- Since the 2016/2017/2022 LHMPs, the effects of climate change are becoming more apparent in the Tri-City Planning Area and all of California.
- NWS data indicates temperatures are increasing resulting in more extreme heat days. 2021, 2022, and 2023 temperatures were some of the hottest on record.
- Weather extremes, including precipitation have been increasing and becoming much more variable – the Tri-City Planning Area is seeing increased precipitation and intensity as well as abnormally dry conditions.
- Examples of weather extremes include the numerous atmospheric river events, the Tropical Storm Hilary event of 2023, and funnel cloud/tornado conditions occurring in areas that historically have not experienced these types of events. These types of events are becoming more the norm because of climate change.
- Data also suggests that changing climate conditions influence the severity of multiple hazards, such as heat, flooding, coastal flooding and sea level rise, wildfire, drought, and others identified in the Tri-City Planning Area.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Coastal Flooding and Sea Level Rise			X

- With recent increases in precipitation and intensity resulting in 6 disaster declarations (3 in 2017 and 3 in 2022/2023) for heavy rains and storms since the 2016/2017/2022 LHMPs, the Tri-City Planning Area has been increasingly vulnerable to these types of events.
- Coastal flooding continues to be an issue during large storm events; the NWS has been issuing more coastal flood advisories in recent years; more recent local and regional studies provide evidence that sea level rise is occurring in the Tri-City Planning Area.
- While identified impacts have not been fully measurable given the open space/marsh nature of coastal areas (and lack of development), the inherent value of these ecological resources and future of these areas are a regional concern.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Dam Failure		X	

- The number and locations of dams have not changed since the last Plans. Likewise, populations in the Tri-City Planning Area have remained fairly level since the 2016/2017/2022 LHMPs; but with the population increases being redistributed to occupy the new development areas. However, given the number of dams and the extensive inundation areas, the Tri-City vulnerability to dam failure has not significantly changed due to changes in land use patterns and populations.
- New development in the Tri-City Planning Area adds to the built environment that falls within the dam inundation areas increasing the vulnerability to this hazard.
- The increase in the number of high-tech industries in the Tri-City Planning Area increases the potential economic impacts associated with a dam failure event.
- Risk of dam failure increases over the years due to aging dam infrastructure. However, dams are always undergoing inspections, with maintenance and improvement projects implemented as needed. For example, the Anderson Reservoir in Santa Clara County (with an inundation in the Tri-City Planning Area) is currently undergoing a seismic retrofit project that will improve reliability and safety, and will return the reservoir to its original storage capacity.
- Dams are more regulated than ever. More dams are subject to developing Emergency Action Plans (EAPs) and inundation mapping as well as performing inspections, maintenance, and required dam improvements. This assists with assessing current dam conditions and preparing for future events.
- ACWD has completed EAPs on all owned dams. ACWD continues to inspect, maintain, and improve these dams. The District has many ongoing dam improvement/upgrade projects that they implement through their Capital Improvement Program that effectively manage risk for these District owned dams.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Drought and Water Shortage	X		

- Drought conditions since the 2016/2017/2022 LHMPs, including water supply issues, have had a limited impact on the Tri-City Planning Area and California. Since 2017, drought conditions have seen some reprieve with recent years of heavy rains and atmospheric river events. As well, water supply resources (ACWD) remain robust. As a result, the drought and water shortage hazard is less of a priority for this 2024 LHMP Update, resulting in a decrease in current vulnerability to the Tri-City Planning Area.
- Recent drought conditions stress trees and vegetation making them more susceptible to insect infestation, disease, and other issues.
- Drought conditions, while intermittent, still contribute to an increase in dry fuels (and tree mortality), and general increase in wildfire conditions.
- Noxious weeds are more drought tolerant – better able to compete for water over local vegetation.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Earthquake			X

- The Tri-City Planning Area is in a relatively high seismically active area. Data shows that the longer the area goes without a strong earthquake, the greater the possibility of a large damaging earthquake in the future.
- Also, should a devastating earthquake occur, with the overall increase in values associated with the built environment and the cost to recover and rebuild would be astronomical.
- A primary factor that could change the earthquake vulnerability is additional development within the Tri-City Planning Area. However, adherence to current California building codes should ensure sound development of new structures better able to withstand a large earthquake. Underground utilities, critical facilities and other key facilities and infrastructure remain a concern.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Flood: 1%/0.2% events		X	

- The risk and vulnerability of 1% and 0.2% flood events remain somewhat constant, changing from year to year based on weather, location, new development, and improvements to the flood control systems.
- With the heavy rains and storms (and atmospheric rivers) of 2017, 2019, and 2023, severe weather events contributed to flooding in and around the Tri-City Planning Area.
- Effective local land use planning and requirements for development in identified floodplains have minimized additional exposure to this hazard in the Tri-City Planning Area.
- Implementation of additional improvements to the flood control systems protecting Tri-City lands and assets will help reduce this hazard in the future.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Flood: Localized Stormwater Flooding			X

- Climate change issues may result in more localized flooding as the climate warms and more frequent, wetter, and greater intensity storms create more runoff.
- 2017, 2022, 2023 heavy rains and storms (and flooding), including significant, greater intensity rains, resulted in more localized flooding with damages throughout the Tri-City Planning Area.
- Outdated and aging drainage infrastructure also contributes to a greater vulnerability to localized, stormwater flooding. This is especially true in areas with limited and undersized drainage systems.
- Recent cyclical drought conditions in some areas have hardened soils and predisposed areas to worse flooding.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Landslide, Mudslide, & Debris Flow			X

- Similar to heavy rain and storms, the overall vulnerability of the Tri-City Planning Area changes from year to year depending on the season. The heavy rains and storms events (6 Federal Disasters) since the last LHMPs had been significant, causing erosion, landslides and mudslides, and related impacts to the Tri-City Planning Area (in both development and more remote areas).
- Past landslide events in the Tri-City Planning Area have demonstrated the potential and magnitude for future landslide events, including historic slides in Niles Canyon and Mission Peak areas.
- Climate change brings renewed concern moving forward for heavy and more intense rains, storms and associated issues to the Tri-City Planning Area, which include a greater potential for landslides and mudslides.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Levee Failure		X	

- With more Tri-City Planning Area development in and around levees, the vulnerability to levee failure may increase.
- Recent storms since the 2016/2017/2022 LHMPs have overwhelmed leveed areas, such as along Agua Fria Creek in the Rancho Higuera Historical Park in Fremont, causing an increase in silt and debris and the ability of creeks and channels to convey water causing localized impacts.
- Ongoing and planned levee improvements (including any future levee certifications) will reduce the vulnerability of the Tri-City Planning Area to this hazard.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Cold and Freeze		X	

- This hazard was added to the 2024 LHMP Update. It was noted that the vulnerable populations are at greatest risk to this hazard in the Tri-City Planning Area. Low income residents may not be able to afford heat. Seniors, the very young, and unhoused are not as resilient to this hazard.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Extreme Heat			X

- According to the NWS, there has been an increase in severe heat days in recent years. 2021, 2022, and 2023 were some of the hottest years on record.
- Climate change issues will continue to increase heat related impacts and vulnerabilities. Air quality issues increase with more extreme heat days.
- Vulnerable populations are at the greatest risk to this hazard. Low income residents may not be able to afford air conditioning. Seniors, the very young, medically vulnerable, and unhoused are not as resilient to this hazard.
- The heat, combined with drought (tree die back) conditions, has increased the potential for wildfires and contributes to fire weather conditions triggering a PSPS.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: Heavy Rains and Storms (Hail, Lightning)			X

- Similar to other weather hazards, the overall vulnerability of the Tri-City Planning Area changes from year to year depending on the season. The heavy rains and storm events, 6 disaster declarations since the last plans, have been significant, causing flooding and other adverse impacts to the Tri-City Planning Area.
- Climate change brings renewed concern moving forward for heavy and more intense rains, storms, and associated issues to the Tri-City Planning Area.
- Atmospheric River events are increasing in the Tri-City Planning Area compounding flood issues and impacts. The intensity of these storms cause significant silting of creeks and channels, limiting the ability for these waterways to convey water causing backups and flooding.
- Lightning has caused fires that have led to smoke, air quality, and visibility issues since the previous Plans (e.g., the SCU Lightning Complex Fire, 2020).

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Severe Weather: High Winds and Tornadoes		X	

- Similar to other weather hazards, the overall vulnerability of the Tri-City Planning Area changes from year to year depending on the season. While high winds are a documented concern, tornadoes while occurring infrequently in the Planning Area, are of low intensity and have not shown to cause significant damages in the past.
- High winds, including the Diablo Winds, exacerbate the spread and intensity of wildfires.
- High winds in recent years have contributed to PSPS events occurring in the Tri-City Planning Area. The overall reliability of the electrical grid is also a concern during high wind events
- Tree fall issues increase during periods of high winds. This creates a treefall hazard and increases wildfire fuels. Eucalyptus trees in the area have shown to be particularly vulnerable to high wind events.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Subsidence		X	

- While subsidence is an issue in the Tri-City Planning Area primarily to underground infrastructure, the groundwater recharge program conducted in the Tri-City Planning Area has been successful which may limit future subsidence issues related to groundwater pumping and drawdown.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Tsunami		X	

- This hazard has not changed since 2016/2017/2022 LHMPs.

2024 LHMP Update Hazards	Decrease in Vulnerability	No Change in Vulnerability	Increase in Vulnerability
Wildfire			X

- Compounded by recent drought conditions and climate change influences such as an increase in high temperatures, the wildfire hazard has substantially increased since the 2016/2017/2022 LHMPs and is no longer just a seasonal issue. The wildfire season, including the potential for a catastrophic wildfire, is now a year around concern.
- Climate change continues to affect the nature and intensity of wildfires.
- The vulnerability of the Tri-City Planning Area to a devastating wildfire has increased as exacerbated by the recent drought, increases in tree mortality, and overall increase in wildfire conditions and fire weather. However, this occurs intermittently with periods of heavy rains and storms, which temporarily lower the risk and vulnerability of wildfire, until drought and fire weather conditions return.
- Wind has been a major contributor to the potential for a catastrophic wildfire (e.g., 1991 Tunnel Fire). When high winds are combined with extreme heat and low humidity, these fire weather conditions can trigger a PSPS which leaves the community at risk in other ways.
- With large wildfires occurring throughout California, the Tri-City Planning Area has seen a significant increase in air quality impacts from smoke resulting in more recorded bad air days.
- The wildfire issue and impacts in California is also compounded by the number of insurance companies that are not renewing policies or are pulling out of California altogether.

2.3 2016/2017/2022 LHMP Mitigation Strategy Successes and Status

The participating jurisdictions successfully implemented numerous mitigation actions identified in the 2016/2017/2022 LHMP mitigation strategies, thus working diligently towards meeting their 2016/2017/2022 goals and objectives, as follows:

2016 City of Fremont LHMP Goals

The goal of the LHMP is to maintain and enhance a disaster-resistant City by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters.

2017 Union City/Newark (and USD) Multi-Jurisdiction Hazard Mitigation Plan Goals

- Protect the public's health and safety and minimize the damage to essential services, structures, property, and infrastructure as a result of hazards.
- Promote hazard mitigation as an integrated public policy and as a standard business practice.
- Encourage the development and implementation of long-term, cost effective, and environmentally sound mitigation projects.
- Build and support local capacity to enable the public to prepare, respond, and recover from the impact of natural hazards.
- Provide increased safety through the provision of adequate infrastructure, public education, and outreach programs.
- Incorporate elements of hazard mitigation into cross functional planning and regulatory initiatives.
- Retrofit, purchase, or relocate structures in high hazard areas, especially those known to be repetitively damaged.

2022 Alameda Conty Water District Goals

- Protect the public's health and safety and minimize damage to essential services, structures, property, and infrastructure as a result of hazards.
- Promote hazard mitigation as an integrated public policy and as a standard business practice.
- Encourage the development and implementation of long-term, cost effective, and environmentally sound mitigation projects.
- Build and support local capacity to enable the public to prepare, respond, and recover from the impact of natural hazards.
- Provide increased safety through the provision of adequate infrastructure, public education, and outreach programs.
- Incorporate elements of ACWD specific hazard mitigation into regional planning and regulatory initiatives.
- Continuously monitor the functions of ACWD infrastructure in high hazard areas, especially those known to be in areas of potential damage from identified events.

2.3.1. Success Stories

Since the 2016/2017/2022 LHMPs, progress has been made on the implementation of the mitigation strategies contained within those previous plans. Beyond the mitigation strategy implementation from these previous LHMPs, the participating jurisdictions also continue to implement additional hazard mitigation measures not contained within those previous plans. This section highlights key mitigation success stories for each participating jurisdiction since the 2016/2017/2022 LHMPs.

City of Fremont

Vegetation Management and Wildfire Fuel Reduction in VHFHZs

The 2016 City of Fremont LHMP included a strategy of utilizing "vegetation management to reduce risks in existing development". Activities pursuant to this strategy included promoting "awareness of vegetation management standards for fire fuel reduction" and maintaining "fire abatement standards, especially in the hillside and Wildland-Urban Interface (WUI) areas."

Since this time, the City maintained highly successful vegetation management and wildfire fuel reduction programs. As evidence of the success of these programs, more than 95% of vegetation fires in Fremont were contained to one acre or less.

VHFHZ

Under local ordinance, certain areas in Fremont – primarily in the Hill Area east of Mission Boulevard – are designated as Very High Fire Hazard Severity Zones (VFHSZ). This designation applies stringent requirements for the hardening of buildings against wildfire, as well as requiring defensible space and other fuel reduction measures, in accordance with practices recognized by the California Department of Forestry and Fire Protection (CAL FIRE).

Private Property

In advance of Fire Season, the Fire Department's Fire Prevention Division provides notice to residents in VFHSZs regarding defensible space and fuel reduction requirements and conducts inspections and any necessary follow-up enforcement. The department maintains a high level of compliance, thanks to the diligence and overwhelming cooperation of property owners.

Public Property

The City's Community Services Department is responsible for vegetation management and fuel reduction on City-maintained property. The department's Park Maintenance Division, which maintains parks and City-owned urban landscapes, completes annual vegetation management and fuel reduction work prior to each Fire Season. Work includes discing and mowing using tractors, hand work near property lines, selective tree pruning, and removal of dead or unhealthy trees. 57 zones are subject to this annual fuel reduction work.

The City uses prescribed grazing to reduce wildfire risk on public property in WUI areas. This includes seasonal goat grazing at Sabercat Historical Park, which is instituted on a seasonal basis by the Community Services Department's Environmental Services Division. In addition, the Public Works Department leases approximately 2,500 acres of undeveloped City-owned properties in the Hill Area to ranchers who use the land for cattle and horse grazing.

Figure 2-1 Prescribed grazing near Sabercat Creek Trail, using goats



S0ource: City of Fremont (courtesy of Juan Barajas)

City of Newark

The City of Newark's Public Works department partnered with a local non-profit organization, Urban Forest Friends, to help develop a tree planting program in the City. Reaching out to residents, the City has conducted 3 planting events at the Newark Community Center Park, Ash Street Park, and Byington Park. The City plans to continue this action item in 2024 with its community partners and residents.

Figure 2-2 City of Newark Tree Planting Event



Source: City of Newark

City of Union City

The City of Union City highlights two past action success stories:

- **Unmanned Aerial Vehicle.** In 2017 Union City Police Department (UCPD) identified the need to develop an unmanned aerial vehicle (UAV) capability for hazard mitigation surveys and for use during post-disaster damage assessment. UCPD has completed the purchase of this UAV and implemented policies and procedures for use of this equipment during post-disaster events.
- **City Employee Incident Command System Training.** The City of Union City also identified foundational training of all employees on ICS-100, 700 and for supervisors and above they were also assigned ICS-200 & 800. As of the end of 2023, all City Disaster Service Workers had been assigned these trainings and the City has over 98% completion rate for this training.

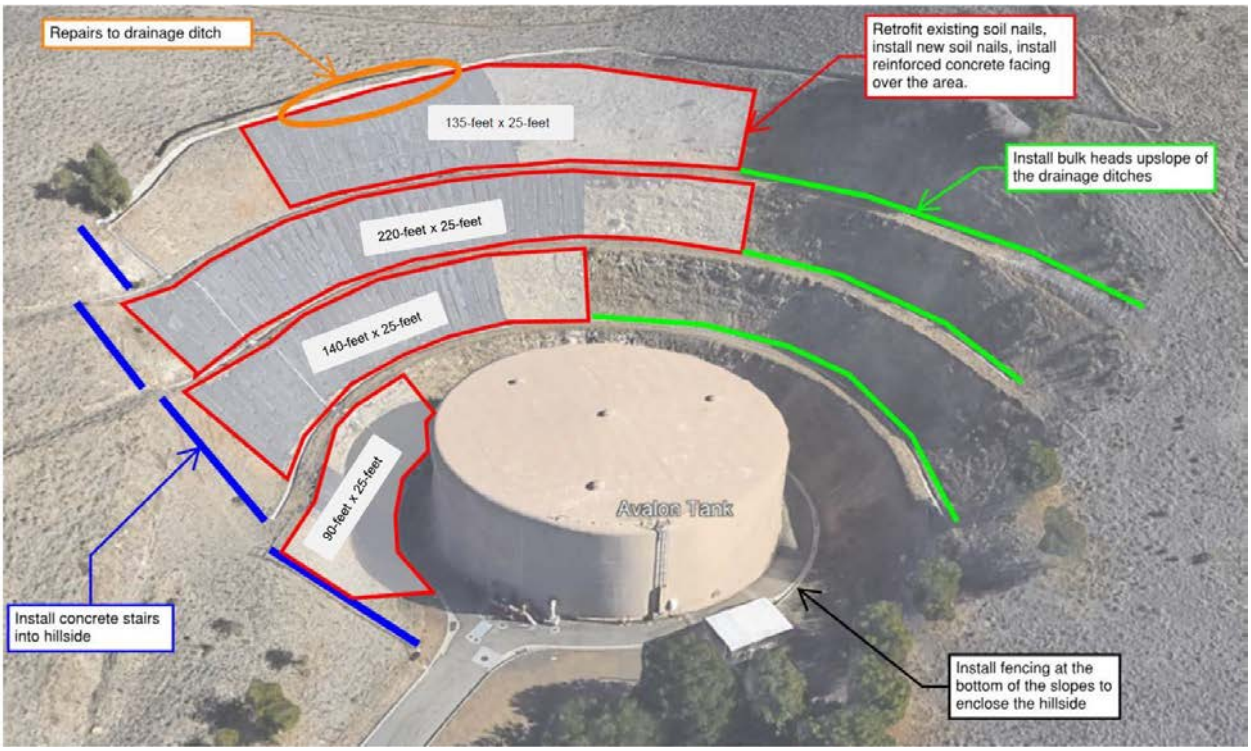
Alameda County Water District

The City of Union City highlights two past action success stories:

- **Vallacitos Maintenance Project.** Built in 1965, the Vallecitos Channel had seen erosion of channel banks, damage to an access road, and sediment deposition and vegetation growth. This increased flood risk and reduced the channel capacity to 15 cfs from 40 cfs. Completed in the fall of 2021, the channel was brought back to capacity. Rock slope protection was added, sediment was excavated, vegetation management was completed, and roads regraded.
- **Avalon Tank Protection.** Avalon Tank site was construction by Avalon Heights developers in the 1990s. During initial construction, soil nails were installed to stabilize the colluvial soils on terraced cut slopes. Since construction, the exposed hillside has experienced surficial erosion during the rainy seasons. ACWD has been implementing temporary protection measures (tarps), and routinely cleaning up the hillside. After a major storm event in 2015, a major FEMA funded clean up was required.

ACWD retained Kleinfelder to perform an alternative analysis to address the ongoing erosion issue. Recommended alternative: Soil Nail Wall with a Shotcrete Facing. In 2020, ACWD Retained Cal Engineering & Geology to complete the design. Multiple repairs were completed.

Table 2-1 Avalon Tank Protection



Source: ACWD

Union Sanitary District

The Union Sanitary District highlights their Standby Power Generation Upgrade Project:

Standby Power Generation System Upgrade Project. In pursuit of enhancing the overall resilience of the Union Sanitary District Wastewater Treatment Plant and fortifying its capacity to withstand potential hazards, an important success mitigation action has been undertaken. This initiative revolves around the substantial improvement of the plant's stand-by power system, a critical component in ensuring continuous operations during emergencies and unforeseen disruptions to the electric grid.

The focal point of this project is the replacement of three power generators within the wastewater treatment facility. These generators have been selected and will soon to be installed to serve as a robust alternative power generation source, thereby mitigating the adverse impacts of potential electric grid failures. The planning and execution of this project are geared towards creating a resilient infrastructure that can seamlessly navigate through challenges, ensuring the uninterrupted functionality of the wastewater treatment plant even in the face of disaster and other major emergencies.

The incorporation of these new power generators not only supports preparedness efforts but also establishes a proactive stance in safeguarding against power-related vulnerabilities. It provides a reliable contingency

plan and aligns with our commitment to environmental sustainability, as these generators are designed to operate efficiently and with reduced environmental impact.

Inclusion of this success mitigation action in the revised local hazard mitigation plan is a testament to Union Sanitary District's dedication to community welfare and environmental stewardship. This strategic enhancement is a step forward in the ongoing efforts to create a robust and adaptable wastewater treatment facility that can continue to serve the community effectively, even in the most challenging circumstances.

Figure 2-3 Standby Generator



Source: USD

2.3.2. 2016/2017/2022 Mitigation Strategy Update

The 2016/2017/2022 LHMPs contained separate mitigation strategies for their respective jurisdictions. These have been combined below. Collectively, the 2016/2017/2022 LHMPs contained 140 separate mitigation actions for the jurisdictions. Of these, 10 are complete, 2 have portions that are complete and portions that are ongoing, 113 are ongoing, and 15 have not been started. 77 actions have been identified for inclusion in this LHMP Update and have been carried forward in Chapter 5. Table 2-2 provides a status summary of the mitigation action projects from the 2016/2017/2022 LHMPs. Following the table is a description of the status of each project.

Table 2-2 2016/2017/2022 LHMPs: Mitigation Action Status Summary

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
2016 City of Fremont Mitigation Actions				
Perform appropriate seismic and fire safety analysis based on current and future use for all City-owned facilities and structures.		X		Y
Strengthen, rehabilitate or replace City facilities and structures, based on the seismic and fire safety analysis, as funding is available.		X		Y
Conduct ongoing training for first responders and City personnel to ensure they have the necessary training and equipment to deal with a hazard (including natural and man-made disasters).		X		N
Reduce seismic and fire risk in existing development through building and fire code updates and enforcement.		X		N
Explore local legislation to regulate the storage of hazardous materials to be protected from flood zones, rising sea levels and tsunami inundation areas.			X	N
Coordinate disaster preparation and mitigation practices with private sector, public institutions and other public bodies.			X	N
Protect vulnerable water facilities to ensure an adequate water supply during emergencies and disaster recovery.		X		Y
Protect vulnerable electric systems and facilities and build resiliency so disruption to the system is minimized during and following disasters. Ensure adequate redundancy and fuel is available to maintain critical facilities.		X		Y
Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster.		X		Y
Protect vulnerable wastewater facilities to ensure wastewater is treated during emergencies and disaster recovery.		X		N
Perform hazard vulnerability analysis for solid waste management facilities utilized by the City.			X	N
Integrate Climate Action Plan goals and actions with the Local Hazard Mitigation Plan goals and actions, if determined feasible.		X		Y
Integrate climate change research and adaptation planning into City operations and services.		X		Y
Rehabilitate the City's storm water system to reduce local flooding of nearby streets, utilities and buildings, caused by storm drainage during storms, high tides, sea level rise, seismic events and power outages.			X	Y
Streamline the permitting process to rebuild residential and commercial structures following disasters.			X	N
Provide outreach activities related to hazard mitigation and disaster preparedness.		X		Y
Reduce hazard vulnerabilities for non-City-owned buildings throughout Fremont.			X	Y
Utilize vegetation management to reduce risks in existing development		X		Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
The City's Soft-Story Residential Building Program, Existing Tilt-Up Concrete and Reinforced Masonry Buildings Programs were to be completed by 2008. All known buildings have been retrofitted and removed from the list of buildings out of compliance. If additional buildings are found to be out of compliance, the City will continue to implement the programs.		X		Y
Continue the City's participation in the National Flood Insurance Program.		X		Y
Establish cooling centers and encourage landscaping improvements to reduce Fremont resident's vulnerability to extreme heat events, severe storms, and associated hazards.	X	X		N
Collaborate with ACWD, local, state, regional and federal partners to increase the security of Fremont's water supply from climate change impacts.		X		N
Mitigate the impacts of sea level rise in Fremont, by making shoreline and Bay lands facilities more resilient to earthquake, storm and high water elevation hazards in order to maintain functionality and protect inland facilities. Define any associated tsunami hazards and mitigation.		X		Y
2017 Union City Mitigation Actions				
Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.		X		Y
Continue to support the Planning Area-wide actions identified in this plan.	X			N
Actively participate in the plan maintenance strategy identified in this plan.	X			N
Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.			X	Y
Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.		X		Y
Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment		X		Y
Seek City Council approval and funding for a full-time Emergency Manager job classification.	X			N
Update the citywide Continuity of Operations/Continuity of Government (COO/COG) Plan from the Comprehensive Emergency Management Plan (CEMP), and implement required COO/COG actions.		X		N
Based on EOC staffing capabilities assessment, ensure that mandated training is provided to all employees in SEMS, FEMA ICS-100, ICS-200, IS-700, and IS-800; and ensure that employee training records are securely maintained.		X		Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Based on EOC staffing capabilities assessment, ensure that mandated training is provided to employees who require advanced knowledge and application of the ICS, such as primary and alternate EOC Section Chiefs and senior field personnel, to include at least ICS-300, ICS-400, and the FEMA Professional Development Series; and ensure that employee training records are securely maintained.		X		Y
Based on EOC staffing capabilities assessment, ensure that all Police Department staff who may be assigned the role of incident commander at an emergency/disaster scene have received Incident Commander training; and ensure that employee training records are securely maintained.		X		N
Monitor local availability of upcoming training opportunities for city staff regarding incident staffing, disaster response, and recovery.		X		N
Conduct EOC tabletop exercise(s) to evaluate capabilities and train employees in their assigned EOC role(s).		X		N
Develop and exercise a Disaster Debris Management Plan.			X	Y
Enhance public education and awareness of natural and manmade hazards in the community and public understanding of disaster preparedness, including foreign language translations.		X		Y
Ensure all property address signage meets current Building and Fire Code standards.		X		N
Develop improved capabilities to incorporate GIS technology by all departments into services provided to the public and for use during emergency/disaster incidents.		X		N
Conduct a test of emergency communications and information systems interoperability, to establish baseline capabilities for employee call-back, communications between the EOC and incident command, and communications with the Operational Area and Mutual Aid resources.		X		N
Implement Fire Department field inspection system using portable computers for engine company inspections and Fire Prevention inspections, to integrate inspections, re-inspections, invoicing, permits, CUPA and business license data.		X		N
Review, revise, and update the Comprehensive Emergency Management Plan (CEMP) – ACFD contract requirement	X			N
Conduct a gap analysis of the Union City Emergency/Disaster preparedness and response program, to include a comprehensive review of employee training requirements and needs, plans and procedures, EOC equipment and staffing capabilities, and related analyses.		X		N
Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated Alternate EOC site.		X		Y
Train appropriate staff in FEMA's Hazards-US GIS extension and Benefit/Cost Analysis Tool for use in potential grant applications and post-disaster property assessments.		X		N
Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous dead or dying trees.		X		Y
Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources.		X		Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Develop and maintain a landscape design manual to provide general guidance and education to the public on water efficiency in landscaping and to serve as a resource for water efficient landscape design and installation, including lists of recommended site appropriate native and drought-tolerant plant species.		X		Y
Integrate climate change and natural hazards planning in to current city plan revisions and future planning initiatives.		X		Y
Work with ACWD to design and install seismically resilient backbone pipeline through liquefiable soils in Union City		X		Y
Acquire emergency generators for the City's critical facilities, specifically Fire Station 31, the Senior Center, and Corporation Yard.		X		Y
Conduct a comprehensive structural seismic analysis of the City's facilities.		X		N
Establish a Broadband-WiFi10g network in the Station District.		X		Y
Establish a Broadband-WiFi10g network backbone infrastructure along major thoroughfares throughout the City.		X		Y
Conduct a Feasibly Study to review necessary improvements required to make Mark Green Sports Center a base camp for recovering families after crisis		X		N
Conduct a Feasibility Study to identify temporary morgue facilities.		X		Y
Conduct a Feasibility Study to review the highway overpass bridge of Alvarado Niles Road over I-880 , for any seismic upgrades		X		Y
Coordinate with the city of Hayward to conduct a Feasibility Study to review any seismic upgrades for the I-880 overpass over Whipple Road		X		Y
Construct grade separations on the Niles Subdivision and the Oakland Subdivision in the Decoto neighborhood, and on the Coast Subdivision on Union City Boulevard, Smith Street, Dyer Street, and Alvarado Boulevard.		X		Y
Acquire two Mobile Emergency Operations Centers		X		Y
Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.		X		Y
Acquire four radio charging stations for spare radios.		X		Y
Acquire two Mobile Ultra High Frequency (UHF) Base Units to communicate with deployed field radios.		X		N
Acquire 100 portable beds/cots for use to support sheltering/mass care operations during a disaster.		X		N
Acquire four satellite phones.	X	X		N
Acquire two rescue boats		X		N
Establish redundant, offsite copies of crucial information and all City data to be able to maintain basic network functions.		X		N
Establish a fully redundant data center with no outage if the main building fails.		X		N
Acquire offsite battery backups to carry energy load until generators start.		X		N

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Develop unmanned aerial vehicle (UAV) capability for hazard mitigation surveys and post-disaster damage assessments; and develop policies, procedures and staff training guidelines for UAV use.		X		N
Develop multi-cultural training presentations and handouts in multiple languages, to expand participation in the Community Emergency Response Team (CERT) program.		X		N
Establish a central paging system for all City locations to be expanded for SMS/cell phone alerts during major disasters.		X		N
Establish a high speed link from all City facilities back to City Hall		X		N
Establish a second location in the City to provide internet/email/external connections, as a backup to the existing City Hall systems that perform this function.		X		N
Establish a portable unit or fixed location for use as a community preparedness training site, volunteer coordination point, and disaster first responder work station center with access to the City's computer network, to supplement the Emergency Operations Center.		X		N
Expansion of central lock system to all off sites and all doors.		X		N
2017 City of Newark Actions				
Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.		X		Y
Continue to support the Planning Area-wide actions identified in this plan.		X		N
Actively participate in the plan maintenance strategy identified in this plan.		X		N
Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.			X	Y
Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.		X		Y
Integrate the HMP into other plans, programs, or resources that dictate land use or redevelopment.		X		N
Adopt the 2016 California Building Code.	X			Y
Update the city zoning code, including considerations for hazard mitigation.		X		Y
Include elements of the HMP to inform future updates to the Newark Climate Action Plan.			X	N
Complete Railroad overcrossing at Central Avenue to prevent isolation during seismic event.			X	N
Replace Eucalyptus groves with non-hazardous tree species.		X		Y
Conduct storm drainage improvements along Lindsay Tract Street			X	Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Retrofit police administration building to essential services/critical facility standards.	X			N
Retrofit Administration Building and Library to current seismic standards.	X			N
Relocate current Emergency Operations Center (EOC) and update critical EOC equipment.				N
Develop a comprehensive post disaster recovery plan.			X	N
Develop a comprehensive Continuity of Operations (COOP) Plan for Administration and templates for individual department COOP development.		X		N
Retrofit and update the Fire Station Training Facility (Station 27).			X	Y
Develop a jurisdiction-wide tree inventory and long-term tree management plan including an outreach initiative encouraging Newark residents to conduct tree maintenance on private property.		X		Y
Developed a phased approach to citywide tree inspection and pruning.	X			N
Develop a comprehensive public outreach campaign that informs residents of pipeline risks in the community and provides safety information on how to identify potential pipeline failure hazards.		X		Y
2022 Alameda County Water District Actions				
Develop and maintain an asset management program that tracks natural hazard events that impact the District and captures damages to District assets, service disruption and other perishable data (e.g., high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the HMP). If feasible, review historic incident reports and jobs for information related to past hazard events.		X		Y
Reevaluate standby generator needs and purchase and install as needed, such as at the desalinization plant and aquifer reclamation production wells.		X		Y
Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.		X		Y
Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.		X		Y
Retrofit and/or update District tanks and reservoirs to improve seismic resilience, including reservoir roof at the following: Alameda, Decoto, Middlefield, and Patterson.		X		Y
Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.		X		Y
Conduct channel betterments on the Vallecitos Channel or install a pipeline adjacent to the channel to increase reliability of flows to facilitate groundwater recharge.	X			N
Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.		X		Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.		X		Y
Consider identifying a sister jurisdiction and develop a protocol for exchanging post event Shakecast information.		X		N
Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.		X		Y
Continue to participate in local emergency response trainings and exercises.		X		Y
Ensure appropriate staff is trained to support District functions when the Emergency Operations Center is activated.		X		N
Continue to integrate the capital improvement program with the HMP.		X		Y
Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.		X		Y
Where appropriate, support retrofitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.		X		N
Actively participate in the plan maintenance protocols outlined in Volume I of the HMP		X		N
Continue implementing a comprehensive demand management program.		X		N
Continue existing vegetation management program to minimize risk of wildfire and landslides.		X		N
Consider a post-disaster recovery plan and coordinate with Tri Cities on their debris management plans.		X		N
Review the City of Fremont's HMP and coordinate with Fremont's Emergency Planner to further develop HMP.	X			N
Installing a second Deep Aquifer water well at the Mowry Wellfield which is not known to be impacted by PFAS and will prove to be beneficial for long term water supply reliability. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. A second well, will make a portion of the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.		X		Y
Construct a system to treat 6 MGD of well water at the blending facility for PFAS and increase the amount of water the facility can provide to our customers while maintaining PFAS levels below the Notification Levels. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. Treatment will make the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.		X		Y
Complete a redesign of blending facility to allow low production and neat chemical feed.		X		Y
Evaluation and preliminary design of an intertie with San Francisco Inter-Bay Pipeline 1, 2 and/or 5.		X		Y

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.		X		Y
2017 Union Sanitary District Mitigation Actions				
Build a new facilities maintenance shop – facility will meet seismic standards and built on a raised foundation to accommodate hazards of sea level rise and flooding		X		Y
Equalization Storage Basin at Alvarado. Basin will temporarily hold waste water if discharge through the East Bay Dischargers Authority (EBDA) system is interrupted. This prevents discharge of treated waste into Alameda Creek.		X		Y
Build Digester No. 7. With decreased liquid flow and increased solids management, increased digester operations are required to properly treat solid waste which will also generate additional bio-gas for co-generation of electricity.		X		N
Rebuild East Aeration Tank Roof – The tank concrete roof has been identified as seismically unstable and has a weakened load capacity. Loss of this structure reduces our treatment capacity by 20%.		X		Y
Seismic upgrade of Primary Clarifier 1-4 - The roof structure over the clarifiers has been identified as seismically unstable. Loss of this structure would reduce our treatment capacity by approximately 85 percent.		X		Y
Upgrade Standby Power Generation System - Replace the current 6 standby diesel generators for the treatment plant with newer more reliable generators that produce fewer emissions.		X		N
Emergency back-up data communications – provide redundant data communications for monitoring and operation of USD wastewater pumping and treatment equipment at the treatment plant and pump stations.		X		N
Integrate the HMP into other plans and programs (e.g. CIP, District-Wide Master Plan)		X		N
Develop and implement a program and process to capture historical and perishable data after any event to support future mitigation efforts.		X		Y
Participate in the HMP maintenance and updating outlined in Volume I of this HMP.		X		N
Improve Public Information and Public Outreach to include Hazard Mitigation Programs. Includes newsletter and educational video.		X		Y
Seismic Retrofit of Concrete Structures - This is an ongoing project of improving concrete structures as we have other repairs or improvements of the structure. Planned actions and estimates are from our documented seismic assessments		X		Y
Newark Pump Station Emergency Outfall – Establish an outfall from the Newark pump station to the SF bay. This will allow discharge of wastewater if the forcemain to the treatment plant is damaged or the treatment plant is damaged and prevent wastewater backup into communities and wetland areas causing a public health concern.			X	N

Mitigation Action	Complete	Ongoing	Not Started	Project in Plan Update
Forcemain Alameda creek crossing ground stabilization – The soil around the forcemain near Alameda creek has been identified as very unstable. This will stabilize the soil and forcemain pipeline to prevent sewage leakage into Alameda creek and the wetland areas		X		Y
Forcemain lining – Forcemain is constructed of segmented concrete pipe. This project will line the pipeline to prevent leakage at joints if the pipeline moves or settles. Much of this pipeline is within protected wetland areas.			X	Y
Admin Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.		X		Y
Control Building Seismic Upgrade - This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.		X		Y
Field Ops Building Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.		X		Y

City of Fremont Mitigation Actions

Perform appropriate seismic and fire safety analysis based on current and future use for all City-owned facilities and structures.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Analysis and identification of structures supporting critical emergency Response functions is addressed in the Plan. This includes identification of Critical Facilities and Lifelines and scenario-based modelling of seismic impacts to facilities.

Prior to 2016, seismic retrofits were completed at all Fremont fire stations and the Fremont police campus. Seismic improvements at the Fremont police campus begun Summer 2010, at a cost of approximately $5.25 million, and included the Police Department's administrative office and police station, and the City's 9-1-1 public safety answering point, which is also police dispatch. Other improvements during this time included the jail and evidence building (built 2002, but currently not in use as jail). Since 2016, work was completed on a new emergency backup power generator providing full power to the police campus, except for the adjacent animal services building. Between 2005 and 2012, all Fremont fire stations were either replaced or seismically renovated. These improvements meet current standards for Essential Service facilities under California law (California Health and Safety Code, Chapter 2, §§ 16000 - 16022), which require that any fire station, police station, emergency communications dispatch center, or emergency operations center built July 1, 1986 or after "be designed and constructed to minimize fire hazards and to resist, insofar as practical, the forces generated by earthquakes, gravity, and winds."

Strengthen, rehabilitate or replace City facilities and structures, based on the seismic and fire safety analysis, as funding is available.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): No projects to strengthen, rehabilitate, or replace existing City of Fremont facilities and structures were completed, for the purposes of either seismic or fire safety.

Conduct ongoing training for first responders and City personnel to ensure they have the necessary training and equipment to deal with a hazard (including natural and man-made disasters).

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Police and Fire Departments conduct regular, ongoing training for uniformed emergency response personnel. The City of Fremont City Council authorized a new Emergency Services Coordinator position in the City's FY 2022-23, increasing the staffing of the Fire Department's Office of Emergency Services to 2.0 employees. The Fire Department anticipates the position will be used to support training of City of Fremont personnel in their capacity as Disaster Service Workers, among other duties.

Reduce seismic and fire risk in existing development through building and fire code updates and enforcement.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The California Building and Fire Codes are updated once every three years and are adopted into the Fremont Municipal Code by Ordinance, except that the City opts to adopt more stringent standards than State law requires in certain cases. In June 2023, the City Council adopted new standards which meet or exceed the 2022 California Building and Fire Codes.

The Fire Department's Prevention Bureau continues its efforts to reduce fire risk through regularly scheduled fire safety and hazardous materials inspections. The Bureau is increasingly responding to and supporting requests from the public neighborhood-based adoption of National Fire Prevention Association (NFPA) Firewise standards. Under the NFPA Firewise program, residents may accrue reduced fire insurance premiums. Attaining the NFPA Firewise designation requires a neighborhood inspection and evaluation of factors such as emergency vehicle access, defensible space, and home exterior construction.

Individual firefighting units of the Fire Department's Operations Bureau conduct periodic field orientations and mapping of hazard prone areas, including evaluating access (e. g. gates, public and private roads, etc.). During its evaluations, units use the department's new Tablet Command software to maintain shared awareness of special hazards and conditions, and to evaluate emergency response route efficiencies.

Explore local legislation to regulate the storage of hazardous materials to be protected from flood zones, rising sea levels and tsunami inundation areas.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Fire Department's Prevention Bureau, Hazardous Materials Division is the Certified Unified Program Agency (CUPA) certified by CalEPA to implement and enforce hazardous waste and hazardous materials regulatory oversight programs concerning Fremont businesses, in accordance with State law. The Hazardous Materials Division conducts regular inspections of facilities which store or handle hazardous materials, as required by law. These facilities are subject to the City's Building and Fire Codes.

In 2023, the Hazardous Materials Division identified a list of the highest risk hazardous materials facilities. This information is used in the Plan's mapping of Vulnerable Facilities and local hazards.

Coordinate disaster preparation and mitigation practices with private sector, public institutions and other public bodies.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and is carried forward in this LHMP Update.

Protect vulnerable water facilities to ensure an adequate water supply during emergencies and disaster recovery.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): ACWD completed seismic upgrades in the Fremont area, including identification and update of critical mains. High priority mains along fault crossings have been retrofitted to facilitate above-ground bypasses in the event the mains rupture following an earthquake, due to ground displacement. The bypass system consists of street level manifolds and valves located on either side of fault, and special hose which is placed above ground, connecting to the manifolds on either side of the fault. These upgrades were completed:

- Near Shinn Street, Mowry Avenue, Peralta Boulevard, and the ACWD's well fields
- At ACWD's Ridley Drive production facility
- Union Street
- Osgood Road, between Blacow Road and Washington Boulevard
- In the area of Durham Road and I-680

Protect vulnerable electric systems and facilities and build resiliency so disruption to the system is minimized during and following disasters. Ensure adequate redundancy and fuel is available to maintain critical facilities.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Installation of a new generator at the Fremont Police Campus was completed in 2023. Currently, the City is in the process of replacing generators at Fire Stations 4 and 10, with anticipated completion in 2024.

Maintenance of emergency generators at fire and police stations, the Maintenance Center, the Development Center, and City Hall is prioritized for funding in the City of Fremont's Capital Improvement Plan.

Most designated emergency shelters (i. e., for sheltering evacuees following natural disasters and other incidents) in the City of Fremont lack alternative sources of electrical power. In 2022 and 2023, the City of Fremont unsuccessfully pursued two separate grant opportunities to fund the purchase and installation of transfer switches at select designated emergency shelter facilities – to facilitate emergency power by means of large portable generators following an incident. Further coordination is needed to plan and program resiliency and redundancy for emergency shelters operated by other agencies

Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): No known action on this.

Protect vulnerable wastewater facilities to ensure wastewater is treated during emergencies and disaster recovery.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing.

Perform hazard vulnerability analysis for solid waste management facilities utilized by the City.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Not performed.

Integrate Climate Action Plan goals and actions with the Local Hazard Mitigation Plan goals and actions, if determined feasible.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City Council adopted the City's new Climate Action Plan, Climate Ready Fremont in October 2023.

Integrate climate change research and adaptation planning into City operations and services.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The City Council adopted the City's new Climate Action Plan, Climate Ready Fremont in October 2023.

Rehabilitate the City's storm water system to reduce local flooding of nearby streets, utilities and buildings, caused by storm drainage during storms, high tides, sea level rise, seismic events and power outages.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): During storm events, Street Maintenance staff are immediately dispatched to designated known "hot spots" for immediate action on storm flood, power outages and other related issues. Staff is also staff divided into 3 sections (north, central and south) to maximize coverage. Calls for flooding and power outages are dispatched through Street Field Supervisors during normal hours and calls after hours come through Police Department Dispatch. These calls are logged and plotted on a storm map until they are completed. Rehabilitation project for known "hot spots" are then programmed and funded through the 5-year Capital Improvement Program. This project has not yet been started due to funding. It is carried forward into this Plan Update.

Streamline the permitting process to rebuild residential and commercial structures following disasters.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been started. It is not being carried forward in this Plan Update.

Provide outreach activities related to hazard mitigation and disaster preparedness.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): In October 2023, the Fremont Fire Department, Office of Emergency Services launched new emergency preparedness online resources on Fremont.gov. In addition to content on how to prepare for various hazards, content includes information regarding natural hazards as well as guidance for home mitigation for earthquake, wildfire, flooding, and other hazards. Mitigation-related content includes:

- Cal OES My Hazards (online natural hazard mapping)
- Seven Steps to Earthquake Safety (which includes home mitigation)
- Earthquake early warning
- Promotion of earthquake insurance, which is administered by the California Earthquake Authority (CEA) and available for purchase by property owners and renters through insurance providers.
- Promotion of the California Residential Mitigation Program's (CRMP) Earthquake Brace + Bolt program. The program provides funding to perform seismic retrofits to the foundation of eligible older homes.
- Wildfire mitigation resources (including defensible space and wildfire prevention information)
- Flood mitigation resources (including NFIP flood mapping and promotion of the city's the sandbag program for residents)

In 2023, the City's Public Works Department distributed flood information by mail to all residents in designated floodplains. The flyer provides information and resources on what to do before, during, and following a flood. In addition to disseminating flood information to residents in the floodplain areas per the Community Rating System, Fremont has enhanced the communication efforts for residents citywide to include storm and flood preparation information through the Fremont Connect Newsletter and various City social media accounts. Communications are now regularly scheduled through the Public Works, OES, and Fremont Communications Team.

Reduce hazard vulnerabilities for non-City-owned buildings throughout Fremont.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): In 2018, the Washington Hospital Healthcare System (WHHS) completed construction on the Morris Hyman Critical Care Pavilion. In June 2022, Alameda County Healthcare Services Agency and WHHS jointly announced that Washington Hospital would become Alameda County's newest Trauma Center, designated as a Level II Adult Trauma Center. The hospital anticipates it will begin receiving adult trauma patients in Summer 2024, with official certification of its status as a trauma center to follow in 2025.

In compliance with the Alfred E. Alquist Hospital Facilities Seismic Safety Act (California Health and Safety Code, Chapter 1, §§ 129675-130070), the 2018 project is intended to allow the Morris Hyman Critical Care Pavilion to continue to operate following a major earthquake. A base isolation structural system allows the building to move three feet horizontally and/or allows for some vertical displacement of the building, while enabling the Hospital to continue to operate both during and after the earthquake. Additional work is planned to upgrade other WHHS facilities. The next phase calls for construction of a

new seismically safe building and infill of the Morris Hyman Critical Care Pavilion shell space, which will be completed prior to the 2030 deadline for seismic improvements under the aforementioned law.

Fremont Unified School District (FUSD) completed construction of Lila Bringhurst Elementary School in 2021. In 2022, the school was added to the Fremont Fire Department, Office of Emergency Services' roster of pre-planned emergency shelters. FUSD recently completed major renovations of each of its five middle schools. Each of these facilities meets California's newest seismic standards for public schools.

In March 1998, a massive landslide occurred on Fremont's Mission Peak. The City of Fremont's Public Works Department conducts continuous monitoring of the landslide area.

Utilize vegetation management to reduce risks in existing development

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Fremont Fire Department's Fire Prevention Bureau maintains a list of approximately 100 parcels in its Very High Fire Hazard Severity Zones (as designated by local ordinance). Mailers are sent in advance of Fire Season, providing residents approximately 30 to 45 days to comply with specified vegetation reduction standards. Following issuance of the mailers, the Fire Prevention Bureau's Fire Prevention Inspectors inspect the properties. As necessary, follow-up mailers with Notice to Abate are issued. Citations may be issued for failure to comply. The Community Development Department's Code Enforcement staff enforce residential nuisances, including violations concerning vegetation reduction (e. g. high, dry grass, etc.). The City maintains a high level of compliance.

The City of Fremont has a proactive weed abatement program for vegetation management of city-owned, undeveloped land that is adjacent to existing development. 57 zones are managed by contractors and city staff. The Weed Abatement program typically begins the first week of May, once the rain has subsided and grasses begin to decline. Procedures include discing or mowing all zones along with any necessary hand work along property lines where tractor access is limited, as a follow up procedure. Additionally, tree pruning and removal of excessive debris from terrain is conducted as well as removal of any dead or declining trees that may increase potential fire risk. The City of Fremon has agreements with various service providers to conduct prescribed grazing in open space areas. This may include the use of cattle, horses, and goats and includes both annual and seasonal contract agreements. Grazers are also responsible for fire breaks around property perimeters adjacent to roads or structures.

The Community Services Department, Park Maintenance Division – which maintains parks and City-owned urban landscapes – is responsible for vegetation management on City property. The Parks Maintenance Division completes annual vegetation reduction prior to each Fire Season.

The City does not have jurisdiction regarding vegetation reduction on State property, such as Interstate and State highway rights-of-way. From time to time, the Fire Department submits vegetation reduction requests to Caltrans.

On Fremont.gov, the Fire Department provides information on wildfire safety and defensible space requirements.

The City's Soft-Story Residential Building Program, Existing Tilt-Up Concrete and Reinforced Masonry Buildings Programs were to be completed by 2008. All known buildings have been retrofitted and removed from the list of buildings out of compliance. If additional buildings are found to be out of compliance, the City will continue to implement the programs.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): By way of background, in 2008, the City of Fremont hired contracted services to complete an inventory of soft-story, tilt-up concrete, and unreinforced masonry buildings. This inventory was prepared based on windshield surveys. Owners were contacted and asked to comply by (1) substantiating the building is not subject to the ordinance, (2) filing a permit to perform a retrofit, or (3) demonstrating compliance.

Priorities were established for enforcement, based on number of units and stories. Property owners were given a number of years to comply, although the process can extend considerably in cases of non-compliance.

Since this time, the Community Development Department's Code Enforcement unit has discovered additional such buildings in the course of its work, which were not identified in the initial windshield surveys).

Beginning in 2024, the Community Development Department plans to conduct an audit of all known buildings subject to the seismic ordinance. Additional follow-up enforcement is anticipated, which will likely require continuous monitoring and enforcement to achieve compliance.

Continue the City's participation in the National Flood Insurance Program.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): NFIP mapping is posted to fremont.gov at: https://www.fremont.gov/government/departments/engineering/flood-information. In 2023, the City participated in a CRS review. The Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management practices that exceed the minimum requirements of the National Flood Insurance Program (NFIP). In CRS communities, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community's efforts that address the three goals of the program: reduce and avoid flood damage to insurable property; strengthen and support the insurance aspects of the National Flood Insurance Program; and foster comprehensive floodplain management. In 2023, Fremont participated in a CRS recertification review of the City's Floodplain Management Program and Fremont was designated a Class 8 community that qualifies for 10% flood insurance premium discounts for residents within the designated floodplain zone.

Establish cooling centers and encourage landscaping improvements to reduce Fremont resident's vulnerability to extreme heat events, severe storms, and associated hazards.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The 2024 Tri-Cities Multi-jurisdictional Local Hazard Mitigation Plan will include discussion and analysis.

The Fremont Fire Department – OES monitors the weather forecast on a weekly basis from approximately May to November (late- meteorological Spring to mid- meteorological Fall) and advises when Cooling Centers will open based on established criteria. (See example Situation Reports, planning matrix with criteria, and https://www.fremont.gov/residents/emergency-preparedness/hot-weather-safety.

There are no local energy ordinances (regarding use or construction). In 2016, the City implemented a solar requirement for new low-rise residential construction, as well as provisions for E/V electric vehicle charging readiness. Solar batteries are not a requirement.

Collaborate with ACWD, local, state, regional and federal partners to increase the security of Fremont's water supply from climate change impacts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): ACWD adopted a water use efficiency master plan in 2021.

Mitigate the impacts of sea level rise in Fremont, by making shoreline and Bay lands facilities more resilient to earthquake, storm and high water elevation hazards in order to maintain functionality and protect inland facilities. Define any associated tsunami hazards and mitigation.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): In 2021, Cal OES released California Department of Conservation – California Geological Survey mapping of tsunami inundation for Alameda County, including Fremont. The City developed new online Emergency Preparedness resources in 2022 and 2023, including an Evacuation page. There is currently no posted signage regarding Tsunami Hazard Zones nor Tsunami Evacuation Routes.

City of Newark Actions

Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and will be included in this Plan Update.

Continue to support the Planning Area-wide actions identified in this plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing, but is not considered a mitigation action for this Plan Update (it is more of a policy).

Actively participate in the plan maintenance strategy identified in this plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing, but is not considered a mitigation action for this Plan Update (it is more of a policy).

Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project hasn't been started yet, due to funding and other issues. It is being considered as a mitigation action for this Plan Update.

Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): As a member of the NFIP, this is always an ongoing project and will be part of this Plan Update.

Integrate the HMP into other plans, programs, or resources that dictate land use or redevelopment.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and was undertaken in

part during this Plan Update. While not a mitigation action going forward, it is something the City will continue to do.

Adopt the 2016 California Building Code.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is complete.

Update the city zoning code, including considerations for hazard mitigation.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and will be included in this Plan Update.

Include elements of the HMP to inform future updates to the Newark Climate Action Plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been started, as the Climate Action Plan has not been updated. When it is updated, the LHMP will inform it.

Complete Railroad overcrossing at Central Avenue to prevent isolation during seismic event.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been started and will not be carried forward in this Plan Update.

Replace Eucalyptus groves with non-hazardous tree species.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and will be included in this Plan Update.

Conduct storm drainage improvements along Lindsay Tract Street

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is not started, but will be included in this Plan Update.

Retrofit police administration building to essential services/critical facility standards.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is complete.

Retrofit Administration Building and Library to current seismic standards.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is complete.

Relocate current Emergency Operations Center (EOC) and update critical EOC equipment.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been started due to lack of funding.

Develop a comprehensive post disaster recovery plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project was not started, and will not be carried forward in this Plan Update.

Develop a comprehensive Continuity of Operations (COOP) Plan for Administration and templates for individual department COOP development.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing, but will not be an action carried forward in this Plan Update.

Retrofit and update the Fire Station Training Facility (Station 27).

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project has not been started due to lack of funding, but will be carried forward in this Plan Update.

Develop a jurisdiction-wide tree inventory and long-term tree management plan including an outreach initiative encouraging Newark residents to conduct tree maintenance on private property.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and will be included in this Plan Update.

Developed a phased approach to citywide tree inspection and pruning.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is completed.

Develop a comprehensive public outreach campaign that informs residents of pipeline risks in the community and provides safety information on how to identify potential pipeline failure hazards.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing and will be included in this Plan Update.

Union City Mitigation Actions

Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This is on-going voluntary CA Brace and Bolt Program - Building Division does not perform this action item.

Continue to support the Planning Area-wide actions identified in this plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This was completed during the life cycle of the 2017 LHMP.

Actively participate in the plan maintenance strategy identified in this plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This was completed during the life cycle of the 2017 LHMP.

Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Did not have staff bandwidth to look into this program.

Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Building Department requires FEMA Elevation Certificate from a Licensed Design Professional.

Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This was completed during the life cycle of the 2017 LHMP.

Seek City Council approval and funding for a full-time Emergency Manager job classification.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Complete.

Update the citywide Continuity of Operations/Continuity of Government (COO/COG) Plan from the Comprehensive Emergency Management Plan (CEMP), and implement required COO/COG actions.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-going did not have the resources or funding to update.

Based on EOC staffing capabilities assessment, ensure that mandated training is provided to all employees in SEMS, FEMA ICS-100, ICS-200, IS-700, and IS-800; and ensure that employee training records are securely maintained.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This project is ongoing. New staff is trained as feasible.

Based on EOC staffing capabilities assessment, ensure that mandated training is provided to employees who require advanced knowledge and application of the ICS, such as primary and alternate EOC Section Chiefs and senior field personnel, to include at least ICS-300, ICS-400, and the FEMA Professional Development Series; and ensure that employee training records are securely maintained.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-Going we did not have these courses available to our staff during recent years.

Based on EOC staffing capabilities assessment, ensure that all Police Department staff who may be assigned the role of incident commander at an emergency/disaster scene have received Incident Commander training; and ensure that employee training records are securely maintained.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-going; Due to new managers, we need training on ICS 300 and 400. This is in progress now.

Monitor local availability of upcoming training opportunities for city staff regarding incident staffing, disaster response, and recovery.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This is ongoing.

Conduct EOC tabletop exercise(s) to evaluate capabilities and train employees in their assigned EOC role(s).

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): These are ongoing.

Develop and exercise a Disaster Debris Management Plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This was not started as the City did not have staffing to work on this action item.

Enhance public education and awareness of natural and manmade hazards in the community and public understanding of disaster preparedness, including foreign language translations.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): on-going; we did not have funding for this item.

Ensure all property address signage meets current Building and Fire Code standards.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Develop improved capabilities to incorporate GIS technology by all departments into services provided to the public and for use during emergency/disaster incidents.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Conduct a test of emergency communications and information systems interoperability, to establish baseline capabilities for employee call-back, communications between the EOC and incident command, and communications with the Operational Area and Mutual Aid resources.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Implement Fire Department field inspection system using portable computers for engine company inspections and Fire Prevention inspections, to integrate inspections, re-inspections, invoicing, permits, CUPA and business license data.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Review, revise, and update the Comprehensive Emergency Management Plan (CEMP) – ACFD contract requirement.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Complete.

Conduct a gap analysis of the Union City Emergency/Disaster preparedness and response program, to include a comprehensive review of employee training requirements and needs, plans and procedures, EOC equipment and staffing capabilities, and related analyses.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Open; we did not have staffing to work on this action item.

Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated Alternate EOC site.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Train appropriate staff in FEMA's Hazards-US GIS extension and Benefit/Cost Analysis Tool for use in potential grant applications and post-disaster property assessments.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous dead or dying trees.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Develop and maintain a landscape design manual to provide general guidance and education to the public on water efficiency in landscaping and to serve as a resource for water efficient landscape design and installation, including lists of recommended site appropriate native and drought-tolerant plant species.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Integrate climate change and natural hazards planning in to current city plan revisions and future planning initiatives.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Work with ACWD to design and install seismically resilient backbone pipeline through liquefiable soils in Union City

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Acquire emergency generators for the City's critical facilities, specifically Fire Station 31, the Senior Center, and Corporation Yard.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Conduct a comprehensive structural seismic analysis of the City's facilities.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a Broadband-WiFi10g network in the Station District.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a Broadband-WiFi10g network backbone infrastructure along major thoroughfares throughout the City.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Conduct a Feasibly Study to review necessary improvements required to make Mark Green Sports Center a base camp for recovering families after crisis

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Conduct a Feasibility Study to identify temporary morgue facilities.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Conduct a Feasibility Study to review the highway overpass bridge of Alvarado Niles Road over I-880, for any seismic upgrades

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Coordinate with the city of Hayward to conduct a Feasibility Study to review any seismic upgrades for the I-880 overpass over Whipple Road

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Construct grade separations on the Niles Subdivision and the Oakland Subdivision in the Decoto neighborhood, and on the Coast Subdivision on Union City Boulevard, Smith Street, Dyer Street, and Alvarado Boulevard.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Acquire two Mobile Emergency Operations Centers

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-going we have 1 currently and no timeline on a second

Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): We currently have an Armored Response Vehicle.

Acquire four radio charging stations for spare radios.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-going we currently have two radio banks and no timeline for the additional 2 radio banks

Acquire two Mobile Ultra High Frequency (UHF) Base Units to communicate with deployed field radios.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Acquire 100 portable beds/cots for use to support sheltering/mass care operations during a disaster.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-Going not completed still in progress

Acquire four satellite phone.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): On-going we have 2 no timeline on other 2.

Acquire two rescue boats

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish redundant, offsite copies of crucial information and all City data to be able to maintain basic network functions.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a fully redundant data center with no outage if the main building fails.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Acquire offsite battery backups to carry energy load until generators start.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Develop unmanned aerial vehicle (UAV) capability for hazard mitigation surveys and post-disaster damage assessments; and develop policies, procedures and staff training guidelines for UAV use.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Develop multi-cultural training presentations and handouts in multiple languages, to expand participation in the Community Emergency Response Team (CERT) program.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a central paging system for all City locations to be expanded for SMS/cell phone alerts during major disasters.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a high speed link from all City facilities back to City Hall

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a second location in the City to provide internet/email/external connections, as a backup to the existing City Hall systems that perform this function.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Establish a portable unit or fixed location for use as a community preparedness training site, volunteer coordination point, and disaster first responder work station center with access to the City's computer network, to supplement the Emergency Operations Center.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Expansion of central lock system to all off sites and all doors.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): Ongoing.

Alameda County Water District Actions

Develop and maintain an asset management program that tracks natural hazard events that impact the District and captures damages to District assets, service disruption and other perishable data (e.g., high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the HMP). If feasible, review historic incident reports and jobs for information related to past hazard events.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Reevaluate standby generator needs and purchase and install as needed, such as at the desalinization plant and aquifer reclamation production wells.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Retrofit and/or update District tanks and reservoirs to improve seismic resilience, including reservoir roof at the following: Alameda, Decoto, Middlefield, and Patterson.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Conduct channel betterments on the Vallecitos Channel or install a pipeline adjacent to the channel to increase reliability of flows to facilitate groundwater recharge.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Consider identifying a sister jurisdiction and develop a protocol for exchanging post event Shakecast information.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Continue to participate in local emergency response trainings and exercises.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Ensure appropriate staff is trained to support District functions when the Emergency Operations Center is activated.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Continue to integrate the capital improvement program with the HMP.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Where appropriate, support retrofitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Actively participate in the plan maintenance protocols outlined in Volume I of the HMP

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Continue implementing a comprehensive demand management program.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Continue existing vegetation management program to minimize risk of wildfire and landslides.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Consider a post-disaster recovery plan and coordinate with Tri Cities on their debris management plans.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Review the City of Fremont's HMP and coordinate with Fremont's Emergency Planner to further develop HMP.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This LHMP Update was the goal of this action. This action is complete.

Installing a second Deep Aquifer water well at the Mowry Wellfield which is not known to be impacted by PFAS and will prove to be beneficial for long term water supply reliability. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. A second well, will make a portion of the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Construct a system to treat 6 MGD of well water at the blending facility for PFAS and increase the amount of water the facility can provide to our customers while maintaining PFAS levels below the Notification Levels. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. Treatment will make the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Complete a redesign of blending facility to allow low production and neat chemical feed.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Evaluation and preliminary design of an intertie with San Francisco Inter-Bay Pipeline 1, 2 and/or 5.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): The Alameda County Water District put this action in place in early 2023. This is still an ongoing project.

Union Sanitary District Mitigation Actions

Build a new facilities maintenance shop – facility will meet seismic standards and built on a raised foundation to accommodate hazards of sea level rise and flooding

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhanced Treatment and Site Upgrade (ETSU) Phase 1A project. The projects will renew and replace aging infrastructure, improve water quality in the San Francisco Bay through enhanced wastewater treatment processes and nutrient removal, and increase the facility's resiliency to extreme wet-weather events and climate change.

Equalization Storage Basin at Alvarado. Basin will temporarily hold waste water if discharge through the East Bay Dischargers Authority (EBDA) system is interrupted. This prevents discharge of treated waste into Alameda Creek.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhanced Treatment and Site Upgrade (ETSU) Phase 1C project.. The project will retrofit existing secondary clarifiers to operate as primary effluent equalization basins. The construction phase of this project is estimated to begin in November 2027.

Build Digester No. 7. With decreased liquid flow and increased solids management, increased digester operations are required to properly treat solid waste which will also generate additional bio-gas for co-generation of electricity.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as the construction of the Digester 7 is complete however the project closeout remains ongoing. The purpose of the project was to provide increased capacity with new infrastructure to reduce risk of damage of current aging infrastructure.

Rebuild East Aeration Tank Roof – The tank concrete roof has been identified as seismically unstable and has a weakened load capacity. Loss of this structure reduces our treatment capacity by 20%.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhanced Treatment and Site Upgrade (ETSU) Phase 1A project. The project will retrofit existing aeration basins and construction of a new aeration basin that will provide flexibility to operate initially with an anaerobic selector during the implementation phase and transitioning to a biological nutrient removal process following completion of the ETSU Phase 1B project.

Seismic upgrade of Primary Clarifier 1-4 - The roof structure over the clarifiers has been identified as seismically unstable. Loss of this structure would reduce our treatment capacity by approximately 85 percent.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress in the Capital Improvement Program (CIP). The design phase is estimated to begin in 2025.

Upgrade Standby Power Generation System - Replace the current 6 standby diesel generators for the treatment plant with newer more reliable generators that produce fewer emissions.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is in the construction phase and documented in the Capital Improvement Program (CIP). Standby Power is critical in event we experience catastrophic failure and loss of power. It is essential that we have continuous power so that the treatment and discharge of wastewater is not interrupted.

Emergency back-up data communications – provide redundant data communications for monitoring and operation of USD wastewater pumping and treatment equipment at the treatment plant and pump stations.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress, but is nearing completion. It will not be carried over to the new plan.

Integrate the HMP into other plans and programs (e.g. CIP, District-Wide Master Plan)

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains ongoing as the District integrates the HMP (Hazard Mitigation Plan) into various initiatives and projects, including the CIP (Capital Improvement Program) and the District-Wide Master Plan, and will continue this practice.

Develop and implement a program and process to capture historical and perishable data after any event to support future mitigation efforts.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains ongoing as the District has systematic process for capturing historical and time-sensitive data following any event/occurrences. This data is referenced frequently in effort to apply information to current and future mitigations strategies or actions.

Participate in the HMP maintenance and updating outlined in Volume I of this HMP.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains ongoing as the

Vol 1- 2017 approved and published plan was utilized in 2017 and 2021 during declared emergencies with notice of intent (NOI) projects submitted to FEMA. Additionally, the District included this action in the next plan.

Improve Public Information and Public Outreach to include Hazard Mitigation Programs. Includes newsletter and educational video.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains ongoing as the District has a comprehensive public outreach strategy that utilizes social media platforms, video, website, newsletters, event attendance, and council meetings to provide awareness information to not only protect the collection system (Fats, oil, greases and wipes) but also to share the purpose and benefits of our Enhanced Treatment and Site Upgrade construction projects and its overarching effort to respond to climate change and other hazards.

Seismic Retrofit of Concrete Structures - This is an ongoing project of improving concrete structures as we have other repairs or improvements of the structure. Planned actions and estimates are from our documented seismic assessments.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains ongoing as the District has systematic process for assessing structural integrity, through various studies and evaluations. The identified items of improvements are considered and included in the Capital Improvement and Master Plan as appropriate. This remains and ongoing practice.

Newark Pump Station Emergency Outfall – Establish an outfall from the Newark pump station to the SF bay. This will allow discharge of wastewater if the forcemain to the treatment plant is damaged or the treatment plant is damaged and prevent wastewater backup into communities and wetland areas causing a public health concern.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action was never started, other projects took precedent. To be discussed if the project will be carried over in next LHMP

Forcemain Alameda creek crossing ground stabilization – The soil around the forcemain near Alameda creek has been identified as very unstable. This will stabilize the soil and forcemain pipeline to prevent sewage leakage into Alameda creek and the wetland areas

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress in the Capital Improvement Program (CIP). The design phase is estimated to begin in 2023.

Forcemain lining – Forcemain is constructed of segmented concrete pipe. This project will line the pipeline to prevent leakage at joints if the pipeline moves or settles. Much of this pipeline is within protected wetland areas.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress in the Capital Improvement Program (CIP). The design phase is estimated to begin in 2023.

Admin Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhance Treatment and Site Upgrade (ETSU). The projects will renew and replace aging infrastructure, improve water quality in the San Francisco Bay through enhanced wastewater treatment processes and nutrient removal, and increase the facility's resiliency to extreme wet-weather events and climate change.

Control Building Seismic Upgrade - This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhance Treatment and Site Upgrade (ETSU). The projects will renew and replace aging infrastructure, improve water quality in the San Francisco Bay through enhanced wastewater treatment processes and nutrient removal, and increase the facility's resiliency to extreme wet-weather events and climate change.

Field Ops Building Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.

Progress to Date (Consider: Was the project implemented – why or why not? Did the project reduce risks? Can you provide evidence of loss avoidance?): This mitigation action remains in progress as it is a planned construction phase of our Enhance Treatment and Site Upgrade (ETSU). The projects will renew and replace aging infrastructure, improve water quality in the San Francisco Bay through enhanced wastewater treatment processes and nutrient removal, and increase the facility's resiliency to extreme wet-weather events and climate change.

Chapter 3 Planning Process

44 CFR §201.6(b) and §201.6(c)(1): An open public involvement process is essential to the development of an effective plan. In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:
1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit interests to be involved in the planning process; and
3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
[The plan shall document] the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

The City of Fremont, as the project lead, and the other four participating jurisdictions to this 2024 Tri-City LHMP Update, recognized the need for and importance of the update process for their 2016/2017/2022 LHMPs and initiated its development. After receiving a grant from the Federal Emergency Management Agency (FEMA), which served as the primary funding source for this LHMP Update, the City of Fremont contracted with Foster Morrison Consulting, Ltd. (Foster Morrison) to facilitate and develop the Plan. Jeanine Foster, a professional planner with Foster Morrison, was the project manager and Community Rating System (CRS) lead in charge of overseeing the planning process and the development of this LHMP Update. Chris Morrison, also a professional planner with Foster Morrison, was the lead planner for the development of this LHMP Update. The Foster Morrison's team's role was to:

- Assist in establishing the Planning Committee as defined by the Disaster Mitigation Act (DMA);
- Meet the DMA requirements as established by federal regulations and following FEMA's planning guidance;
- Support objectives under the National Flood Insurance Program's (NFIP) CRS and the Flood Mitigation Assistance (FMA) program;
- Facilitate the entire planning process;
- Identify the data requirements that Planning Committee participants could provide and conduct the research and documentation necessary to augment that data;
- Assist in facilitating the public input process;
- Produce the draft and final plan documents; and
- Coordinate with the California Office of Emergency Services (Cal OES) and FEMA Region IX plan reviews.

3.1 Local Government Participation

The City of Fremont, as the sole participating NFIP CRS community, and the other four participating jurisdictions, cities of Newark and Union City, Alameda County Water District (ACWD), and the Union Sanitary District (USD), made a commitment to this 2024 Tri-City Multi-Jurisdictional LHMP Update.

The DMA planning regulations and guidance stress that each local government (participating jurisdiction) seeking FEMA approval of their mitigation plan must participate in the planning effort in the following ways:

- Participate in the process as part of the Planning Committee;
- Detail where within the Tri-City Planning Area the risk differs from that facing the entire area;
- Identify potential mitigation actions; and
- Formally adopt the Plan.

For all participating jurisdictions, "participation" meant the following:

- Attending and participating in the Planning Committee meetings;
- Completing and returning the Data Collection Worksheets;
- Collecting and providing other requested data (as available);
- Coordinating information sharing between internal and external agencies;
- Managing administrative details;
- Making decisions on LHMP process and content;
- Identifying mitigation actions for the Plan;
- Reviewing and providing comments on Plan drafts;
- Providing Draft documents of the LHMP for public review;
- Informing the public, local officials, and other interested stakeholders about the planning process and providing opportunity for them to comment on the draft Plan; and
- Coordinating the formal adoption of the Plan by the governing boards for each jurisdiction.

The participating jurisdictions seeking FEMA approval of this LHMP Update met all of these participation requirements. Multiple representatives from participating jurisdictions attended the Planning Committee meetings described in Table 3-5 and also brought together an internal planning team to help collect data, identify mitigation actions and implementation strategies, and review and provide data on Plan drafts. Appendix A provides additional information and documentation of the planning process.

In order to promote the integration of CRS into this planning process, the Planning Committee representatives from the City of Fremont, as the CRS community, and the cities of Newark and Union City, as eligible CRS communities, were selected based on their areas of expertise relative to the CRS mitigation categories as detailed in Table 3-1. In addition, the staff responsible for community land use and comprehensive planning for all three cities were active participants on the Planning Committee and provided data and information to support development of the Plan. Specifically, the planners for the three cities, in association with Foster Morrison planners, were involved in the development of this LHMP Update through attendance at meetings, providing data, future land use planning support, and help with other LHMP planning elements. In addition to attending meetings, providing draft text for inclusion in the Plan, and reviewing Plan documents, City planners also provided information on development since the 2016/2017/2022 LHMPs, mapping, text, and details on future development areas, input on current mitigation capabilities, and a variety of documents and information specific to their jurisdictions.

Table 3-1 Tri-City Planning Area LHMP Staff Capability with Six Mitigation Categories

Jurisdiction/Departments	Prevention	Property Protection	Natural Resource Protection	Emergency Services	Structural Flood Control Projects	Public Information	Other
City of Fremont							
Alec Tune, Emergency Services Manager, City of Fremont, Fire Department/OES	X	X		X		X	X
Homira Shafaq, Floodplain Manager, City of Fremont, Public Works Department	X	X	X		X	X	X
Joel Pullen, Planning Manager, City of Fremont, Community Development Department	X	X				X	X
City of Newark							
Richard Martinez, Emergency Coordinator, City of Newark, City Manager's Office	X	X		X		X	X
Matthew Farrell, Chief Building Official / Floodplain Manager, Public Works Department	X	X	X		X	X	X
City of Union City							
Richard Martinez, Emergency Coordinator, City of Union City, City Manager's Office	X	X		X		X	X
Farooq Azim, City Engineer, Public Works Department	X	X	X		X	X	X
Coleman Frick, Sr. Planner, Economic and Community Development Department	X	X				X	X

Individuals representing various departments and other representatives from the participating jurisdictions to this Tri-City LHMP Update were actively involved throughout the Plan Update process as identified in Appendix A in the sign-in sheets for the meetings and as evident through the data, information and input provided by Planning Committee representatives to the development of this LHMP Update. This Chapter 3 and Appendix A provides additional information and documentation of the planning process and participants to this LHMP Update, including members of the Planning Committee.

3.2 The 10-Step Planning Process

Foster Morrison established the planning process for updating the Tri-City LHMP using the DMA planning requirements and FEMA's associated guidance. Specifically, the LHMP was developed pursuant to the requirements of DMA 2000, published at 44 CFR 201.6 and new LHMP guidance effective April 2023. This guidance is structured around a four-phase process:

1. Organize Resources;
2. Assess Risks;

3. Develop the Mitigation Plan; and
4. Implement the Plan and Monitor Progress.

Into this process, Foster Morrison integrated a more detailed 10-step planning process used for FEMA's CRS and FMA programs. Thus, the modified 10-step process used for this Plan meets the requirements of six major programs: FEMA's Hazard Mitigation Grant Program (HMGP); Pre-Disaster Mitigation (PDM) program; CRS program; FMA Program; Severe Repetitive Loss (SRL) program; and new flood control projects authorized by the U.S. Army Corps of Engineers (USACE).

Table 3-2 shows how the modified 10-step process fits into FEMA's four-phase process. The sections that follow describe each planning step in more detail.

Table 3-2 Mitigation Planning Processes Used to Develop the 2024 Tri-City Local Hazard Mitigation Plan Update

DMA Process	Modified CRS Process
1) Organize Resources	
201.6(c)(1)	1) Organize the Planning Effort
201.6(b)(1)	2) Involve the Public
201.6(b)(2) and (3)	3) Coordinate with Other Departments and Agencies
2) Assess Risks	
201.6(c)(2)(i)	4) Identify the Hazards
201.6(c)(2)(ii)	5) Assess the Risks
3) Develop the Mitigation Plan	
201.6(c)(3)(i)	6) Set Goals
201.6(c)(3)(ii)	7) Review Possible Activities
201.6(c)(3)(iii)	8) Draft an Action Plan
4) Implement the Plan and Monitor Progress	
201.6(c)(5)	9) Adopt the Plan
201.6(c)(4)	10) Implement, Evaluate, and Revise the Plan

The LHMP Update involved a comprehensive review and update of each section of the 2016/2017/20222 LHMPs and includes an assessment of the success of the participating jurisdictions in evaluating, monitoring and implementing the mitigation strategies outlined in these previous plans, as described in more detail in Chapter 2 and throughout Chapter 4 and Chapter 5.

The process followed to update the LHMP is detailed in the above table and the sections that follow and is in conformance with the latest DMA planning guidance, LHMP Policy Guide FP 206-21-0002 effective April 19, 2023, and the CRS 2017 Coordinator's Manual, with 2021 Addendum. As part of this LHMP Update, all sections of the Plan were reviewed and updated to reflect new data, processes, and resulting mitigation strategies. Only the information and data still valid from the 2016/2017/2022 LHMPs were carried forward as applicable into this 2024 LHMP Update.

3.2.1. Phase 1: Organize Resources

Planning Step 1: Organize the Planning Effort

With each participating jurisdiction's commitment to participate in the DMA planning process and the CRS program as applicable, Foster Morrison worked with the City of Fremont Fire Department, Office of Emergency Services (Fremont OES), as overall project lead, and the project leads from the other four participating jurisdictions to establish the framework and organization for development of the Plan. An initial meeting was held with key jurisdictional representatives to discuss the organizational and process aspects of this 2024 LHMP Update.

The initial kick-off meeting was held on May 23, 2023. Invitations to the kickoff meeting were extended to key City departments, the county, and special districts located within the Planning Area, as well as to other federal, state, and local stakeholders, including representatives from the public, which might have an interest in participating in the planning process. Representatives from the Planning Committee members to the 2016/2017/2022 LHMPs and other identified stakeholders were used as a starting point for the invite list, with additional invitations extended as appropriate throughout the planning process. The list of invitees is included in Appendix A.

Planning Committee

The Planning Committee was established as a result of these initial meetings, as well as through interest generated through the initial public meeting and outreach conducted for this project as detailed later in this chapter. The Planning Committee, comprised of key city, special district, county, and other government and stakeholder representatives and the public, developed the Plan with leadership from the Fremont OES and project leads from other participating jurisdictions, and facilitation by Foster Morrison. This list includes all Planning Committee members that attended one or more Planning Committee meetings, as well as those who provided key input into the Plan development process. The following participated on the Planning Committee:

Table 3-3 Tri-City Planning Committee

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
City of Fremont				
Fierro	Rocio	City of Fremont	City Attorney's Office	Senior Deputy City Attorney II
Schwarz	Steven	City of Fremont	City Attorney's Office - Risk Management	Risk Manager
Beranek	Kim	City of Fremont	Community Services	Deputy Director
Morris	Wayne	City of Fremont	Community Development	Deputy Director
Pullen	Joel	City of Fremont	Community Development	Planning Manager
West	Gary	City of Fremont	Community Development	Building Official

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Kapur	Kranit	City of Fremont	Community Development	Sustainability Coordinator
Lazaro	Donovan	City of Fremont	Economic Development	Economic Development Director
Ware	Vanessa	City of Fremont	City Manager's Office	Economic Development Coordinator
Persselin	David	City of Fremont	Finance	Director
Diaz	Zoraida	City of Fremont	Fire	Fire Chief
Mozdean	Heather	City of Fremont	Fire	Deputy Fire Chief
Miller	Greg	City of Fremont	Fire - Prevention	Deputy Fire Marshall
Tune	Alec	City of Fremont	Fire - Office of Emergency Services	Emergency Services Manager
Leon	John	City of Fremont	Information Technology Services	GIS Manager
Chan	Ron	City of Fremont	Information Technology Services	GIS Specialist
Hayes	Tim	City of Fremont	Information Technology Services	Systems Analyst/Programmer (GIS)
Wun	Ruby	City of Fremont	Information Technology Services	Data Coordinator
Chew	Ed	City of Fremont	Information Technology Services	Mapping Specialist
Veloso	Noe	City of Fremont	Public Works	Assistant City Engineer
Kishani	Dilip	City of Fremont	Public Works	Principal Engineer (CRS)
Shafaq	Homira	City of Fremont	Public Works	Floodplain Manager
Washington	Sean	City of Fremont	Police	Police Chief
Brede	Lance	City of Fremont	Police	Deputy Chief
McCormick	Paul	City of Fremont	Police	Lieutenant
Gee	Amy	City of Fremont	Police	Public Affairs Manager
Grimsich	Karen	City of Fremont	Human Services	Aging & Family Services Administrator
Aguilar	Mirabel	City of Fremont	Public Works	Senior Civil Engineer
Rivera	Megan	City of Fremont	Fire Department	Administrative Assist.
Venkan Ram	Deepa	City of Fremont	Fire	Executive Assistant
Schoenholz	Dan	City of Fremont	Community Development	Director

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Chew	Ed	City of Fremont	GIS	Mapping Specialist
Campbell	Corina	City of Fremont	Fremont Fire	Business Manager
Do	Donna	City of Fremont	–	–
City of Newark				
Martinez	Richard	City of Newark	City Manager's Office	Emergency Coordinator
Hovorka	Lenka	City of Newark	City Manager's Office	Assistant City Manager
Farrell	Matthew	City of Newark	Public Works	Chief Building Official
Connolly	Tonya	City of Newark	Public Works	Maintenance Superintendentsheeh
Macias	Jolie	City of Newark	Police	Captain
Turner	Steven	City of Newark	Community Development	Director
Fong	Peter	City of Newark	IT	IT Analyst
Lee	Krysten	City of Newark	Finance	Director
Del Rosario	Gloria	City of Newark	Finance	Accounting Manager
Fredstrom	Karl	City of Newark	Police	Police Sergeant
Libby	David	City of Newark (affiliated volunteer)	Fire	Volunteer Coordinator
Fajeau	Soren	City of Newark	Public Works	Director
Diana	Cangco	City of Newark	Public Works	Principal Civil Engineer
Havorka	Lenka	City of Newark	–	Assist. City Manager
Fajeau	Soren	City of Newark	Public Works	Director
City of Union City				
Martinez	Richard*	City of Union City	City Manager's Office	Emergency Coordinator
Campbell	Carmela	City of Union City	Economic Development	Director
Block	Andy	City of Union City	Economic & Community Development	Environmental Manager
Mai	Uyen	City of Union City	Economic & Community Development	Sustainability Analystjose
Azim	Farooq	City of Union City	Public Works	City Engineer
Tommy (Wai Chee)	Cho	City of Union City	Public Works	Principal Civil Engineer
Tran	Trieu	City of Union City	Public Works	Engineer II

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Frick	Coleman	City of Union City	Economic & Community Development	Senior Planner
Venook	Chuck	City of Union City	Economic & Community Development	Chief Building Official
Vallejo	Mario	City of Union City	IT	Director
Valvokus	Chris	City of Union City		Supervisor
Gutierrez	Jose	City of Union City	Public Works	Supervising Construction Inspector
Alameda County Water District				
Reed	Jacob	Alameda County Water District	O&M - Emergency and Security Services	Supervisor
Abellar	Caroline	Alameda County Water District		
Park	Daniel	Alameda County Water District	Information Technology Services	IT/GIS Analyst
Ippangunta	Rekha	Alameda County Water District	ETS - Project Engineering	Division Manager
Lai	Linda	Alameda County Water District		Engineer Tech
Union Sanitary District				
Terrazas	Karoline	Union Sanitary District (USD)	Business Services	Organizatonal Performance Manager**
Chau	Raymond	USD	Technical Services	Manager
Rodriguez	Jose	USD	Collection Services	Manager
Other Agencies, Stakeholders, and the Public				
Cabrera	DJ	Alameda County Sheriff's Office	Office of Emergency Services	Senior Emergency Services Coordinator
Casimere	Lincoln	Alameda County Fire Department	Emergency Services	Emergency Preparedness Manager
Rodgers	Jason	New Haven Unified School District	Maintenance, Operations, Transportation & Facilities	Director
Peralta	Ben	Ohlone Community College District	Campus Police Services	Police Officer
Sheehan	Brian	Alameda County Fire Department		Battalion Chief

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Wade	Clint	California Department of Education	California Schools for the Deaf & Blind	Chief of Facilities
Charles-Ellington	Toshia	California Department of Education	California Schools for the Deaf & Blind	Business Manager
O'Connell	Daniel	Washington Hospital Healthcare System	–	Safety & Security Director
Williams	Dwight	Washington Hospital Healthcare System	–	Safety & Security Supervisordiana
Wong	Kane	American Red Cross	–	Coordinator
Garcia	Brian	National Weather Service	National Weather Service SF Bay Area/Monterey	Warning Coordination Meteorologist
Wein	Anne	U. S. Geological Survey	–	–
Manalo	Ramses	ACFCWCD	–	Assistant Engineer
Airth	Jeff	Fremont Resident	–	Citizen
Ames	Liz	Union City Resident	–	BART Director
Harris	Caroline	Newark Resident	–	–
Sokale	Jana	Newark Resident	–	–
Stark	David	Bay East Association of Realtors	Public Affairs	–
Guio	Lee	Resident	–	CERT Coordinator Union City
Jaclyn	Mardoske	San Francisco Bay Conservation & Development Commission	Adapting to Rising Tides Program	Senior Climate Adaptation Planner
Jeanne	Jones	Fremont Resident	–	–
Bolaffi-Angst	Mimi	BART	–	Director of Security
Miller	Wayne	Resident		
Lee	John	–	Regional Center of East Bay	Emergency Coordinator
Zatarain	Garry	Resident	Newark Cert	Cert Team Lead
Ledesma	Juan	–	Valley Water	Program Supervisor
Medina	Yamel	–	Fremont Cert	Volunteer
Rawat	Rishika	Greenbelt Alliance	–	Resilience Fellow
Yen	Sylvia	Friends of Children with Special Needs	–	–
Dufour	Francesca	Alameda County Fire Department	Fire	ACFD Aide
Earthy	John	–	Red Cross	Preparedness Lead

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Consultant Team				
Foster	Jeanine	Foster Morrison	–	Consultant
Morrison	Chris	Foster Morrison	–	Consultant
Guitierez	Alejandro	Foster Morrison	–	Consultant
Howell	Brenna	Foster Morrison	–	Consultant

Steering Committee

In addition to the Planning Committee, a Steering Committee to the Planning Committee was established to help guide LHMP development, including the CRS components of floodplain management planning and the overall development of the LHMP. The Steering Committee is comprised of key representatives from the City of Fremont, as the CRS community, and Cities of Newark and Union City, as CRS eligible communities, and includes non-local government and public representatives. The non-local government members of the Steering Committee (public citizens and other stakeholders) provide significant representation on the Steering Committee. See Table 3-4 and Appendix A for details on the makeup of the Steering Committee.

Table 3-4 Tri-City LHMP Steering Committee to the Planning Committee

Representative	Organization / Department	City	Public/ Resident	Stakeholder	# Meetings*
Alec Tune, Emergency Services Manager	City of Fremont, Fire Department/OES	X			6
Homira Shafaq, Floodplain Manager, City of Fremont	City of Fremont, Public Works Department	X			4
Richard Martinez, Emergency Coordinator	City of Newark, City Manager's Office City of Union City, City Manager's Office	X			6
Matthew Farrell, Chief Building Official / Floodplain Manager	City of Newark, Public Works Department	X			4
Coleman Frick, Sr. Planner	City of Union City, Economic and Community Development Department	X			3
Jeanne Jones	Resident		X		4
Liz Aimes	Resident, TCEC, Bart		X		3
Jana Sokale	Resident/CCCR/BCDC		X	X	2
Daniel O'Conner	Washington Hospital, Security			X	2
Dwight Williams	Washington Hospital, Security			X	2
Toshia Ellington	California School of Deaf			X	2

Representative	Organization / Department	City	Public/ Resident	Stakeholder	# Meetings*
Jeff Airth	Resident, Fremont		X		2
Kane Wong	Red Cross			X	2
Wayne Miller	Resident, Newark/CCCR		X	X	2
David Stark	Resident/ Bay East Association of Realtors		X	X	2
Ramses Manalo	ACPWA/ACFC&WCD			X	2
Mimi Baloffit-Amyst	Bart Police Department, Security			X	1
Clint Wade	C.D.E.			X	1
Garry Zatarain	Resident/Newark CERT		X		1
Jason Rodgers	New Haven USD			X	1
Brian Sheehan	Alameda County Fire Department			X	1
John Lee	RCEB, Emergency Coordinator			X	1
John Ledesma	Valley Water			X	1
Ben Peralta	Ohone College PD			X	1
Caroline Harris	Resident		X		1
Hiyamal Medina	Resident, CERT Volunteer, Fremont		X		1
John Earthy	Red Cross			X	1
Steve Skala	Resident		X		1
Carter Lake	Resident/ Lake Research		X		1

Meetings

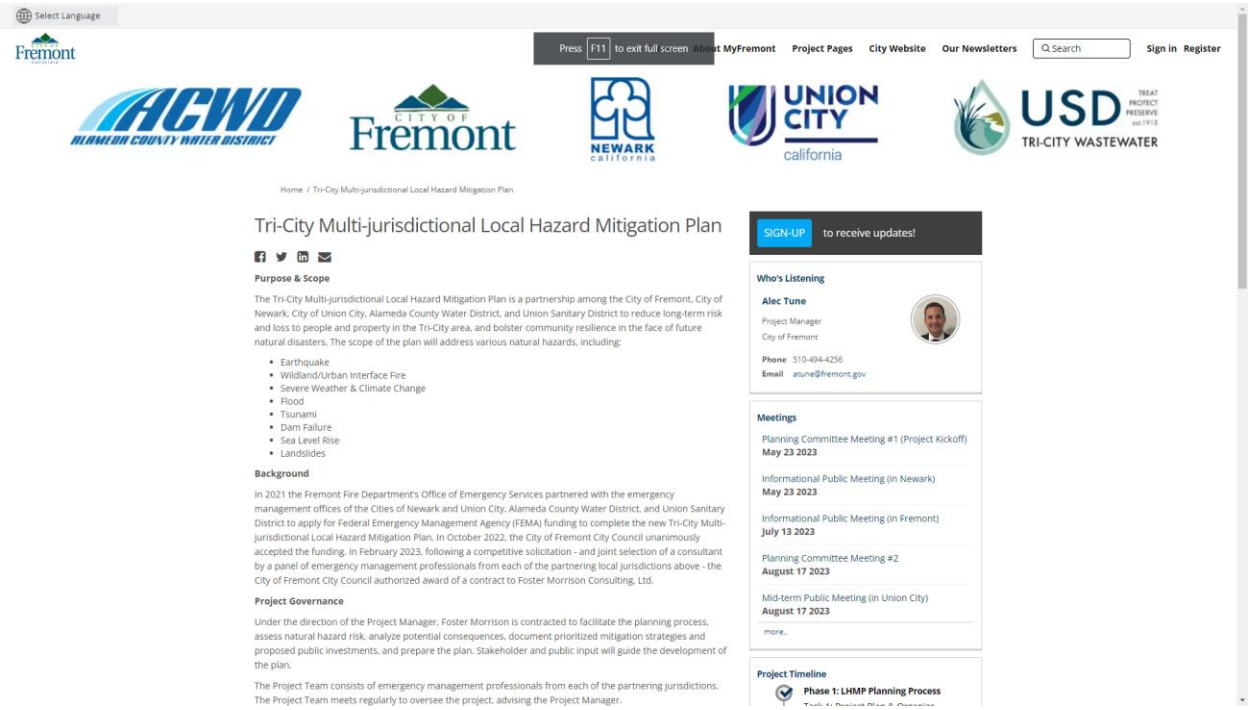
The planning process officially began with a kick-off meeting held on May 23, 2023, followed by a public kick-off meeting held the same day at 6:00 pm. The meetings covered the scope of work and an introduction to the DMA, CRS, and FMA requirements. During the Planning Committee meetings, participants were provided with data collection worksheets to facilitate the collection of information necessary to support development of the Plan. Using FEMA guidance, these worksheets were designed to capture information on past hazard events, identify hazards of concern to each of the participating jurisdictions, identify values at risk to identified hazards, inventory existing capabilities, record possible mitigation actions, and to capture information on the status of mitigation action items from the 2016/2017/2022 Plans. A copy of the worksheets for this project are included in Appendix A. Each participating jurisdiction seeking FEMA approval of this LHMP Update completed and returned the worksheets to Foster Morrison for incorporation into this 2024 LHMP Update

During the planning process, the Planning Committee communicated through virtual Team and Zoom meetings, email, telephone conversations, Dropbox websites, and through a City developed webpage dedicated to the Plan development process. This later website was developed to provide information to the Planning Committee, the public and all other stakeholders on the LHMP process. Draft documents were

also posted on these websites so that the Planning Committee members, stakeholders, and the public could easily access and review them.

The Tri-City LHMP website (MyFremont as shown on Figure 3-1) can be accessed online at: https://www.my.fremont.gov/tri-city-hazard-plan.

Figure 3-1 Tri-City Local Hazard Mitigation Plan Update Website



Source: City of Fremont

The Planning Committee met formally five times during the planning period (May 2023 – February 2024) which adequately covers the four phases of DMA and the 10-Step CRS planning process. An additional Steering Committee Meeting was also held during the Plan development process. Internal jurisdictional meetings were held throughout the planning process to further support Plan development. The formal meetings and topics discussed are described in Table 3-5. Agendas and sign-in sheets for each of the meetings are included in Appendix A.

Table 3-5 Planning / Steering Committee Meetings

Meeting Type	Meeting Topic	Meeting Date(s)	Meeting Location(s)
Planning Committee #1 Kick-off Meeting	1) Introduction to DMA and the planning process 2) Overview of current LHMP; 3) Organize Resources (CRS Steps 1,2&3): the role of the Planning Committee, planning for public involvement, coordinating with other agencies/stakeholders 4) Introduction to Hazard Identification	May 23, 2023	Downtown Event Center Capital Room Fremont, CA

Meeting Type	Meeting Topic	Meeting Date(s)	Meeting Location(s)
Planning Committee #2	1) Risk assessment overview and work session -CRS Step 4: Assess the Hazard -CRS Step 5: Assess the Problem	August 17, 2023	Newark Library Newark, CA
Planning Committee #3	1) Review of risk assessment summary 2) Review and update of mitigation goals 3) Intro to Mitigation Action Strategy -CRS Step 6: Set Goals -CRS Step 7: Review possible activities	September 19, 2023	Alameda County Water District, Board Room, Fremont, CA
Planning Committee #4	1) Review of mitigation alternatives 2) Review and update of mitigation actions from the 2016/2017/2022 LHMPs 3) Identify updated list of mitigation actions by hazard 4) Review of mitigation selection criteria 5) Update and prioritize mitigation actions 6) Mitigation Action Strategy Implementation and Draft Action Development -CRS Step 7: Review possible activities -CRS Step 8: Draft an Action Plan	September 20, 2023	Alameda County Water District, Board Room, Fremont, CA
CRS Steering Committee	1) Overview of the NFIP and CRS Programs 2) Open Discussion and Input on the Flood Hazard (CRS Steps 4 & 5) 3) Open Discussion and Input on possible Flood Mitigation Actions and Projects (CRS Steps 7 & 8)	October 24, 2023	Fremont Fire Department Administration – Large Fire Classroom Fremont, CA
Planning Committee #5	1) Review of final Planning Committee, jurisdictional and public comments and input to Plan 2) Review and documentation of changed conditions, vulnerabilities, and mitigation priorities 3) CRS Step 8: Draft an Action Plan 4) CRS Step 9 & 10: Plan Maintenance and Implementation Procedures	January 25, 2023	Downtown Event Center Capital Room Fremont, CA

Planning Step 2: Involve the Public

Public stakeholders are generally defined as any stakeholders not attached to local government in the Tri-City Planning Area. Up-front coordination discussions with the project leads from the five participating jurisdictions established the initial plan for public involvement. Public involvement activities for this LHMP Update included press releases, social media communications, stakeholder and public meetings, development of an LHMP webpage and associated website postings, the collection of public and stakeholder comments on the draft Plan through a variety of mechanisms, and other public outreach activities as further described below, as well as specific targeted outreach to different groups of people and other agencies throughout the Plan development process. The purpose of this outreach was to inform the public and other stakeholders of the Tri-City LHMP Update project and how they could get involved and how to provide comments on the draft LHMP prior to submittal to Cal OES/FEMA. The outreach also invited the public and stakeholders to the Planning Committee meetings for the project. Information on these outreach efforts can be seen in Appendix A to this LHMP.

Early Public Meeting(s) #1: LHMP Kickoff

Public outreach for this LHMP Update began at the beginning of the Plan development process with an advertisement placed in the local newspaper, social media, and other local outreach methods (like the press release shown in Figure 3-2) announcing the two (2) informational public kickoff meetings and to inform the public of the purpose of DMA, CRS, and the hazard mitigation planning process for the Tri-City Planning Area. This included posting meeting details on the City of Fremont primary website, on the MyFremont LHMP, and on websites for the other participating jurisdictions. Members of the public were also invited to join the Planning Committee meetings.

Figure 3-2 Public Invitation Press Release

Tri-City Local Hazard Mitigation Plan
Press Release/Outreach: Risk Assessment Meetings

Get Involved!

HELP YOUR COMMUNITY BE HAZARD-READY!

Help the Tri-City area with the development of their 2024 Local Hazard Mitigation Plan.

The Cities of Fremont, Newark, and Union City, and the Alameda County Water District and Union Sanitary Districts are partnering to develop a Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP). Floods, earthquake, fire, and severe weather are just a few of the hazards of concern to our community. While natural hazards such as these cannot be prevented, an LHMP forms the foundation for a community's long-term strategy to reduce disaster losses by breaking the repeated cycle of disaster damage and reconstruction. Communities with a FEMA-approved LHMP are eligible to apply for both pre- and post-disaster mitigation grant funding and are better positioned to respond and recover when disasters occur. The new LHMP will also provide a framework for each cities' floodplain management program, which may result in lower flood insurance premiums for area residents and businesses under FEMA's National Flood Insurance Program's (NFIP) Community Rating System (CRS).

Nationwide, taxpayers pay billions of dollars annually helping communities, organizations, businesses, and individuals recover from disasters. Some disasters are predictable and, in many cases, much of the damage can be reduced or even eliminated through hazard mitigation planning.

You are invited – to Planning and Public Meeting #2– the Risk Assessment Meetings

During our second Planning and Public Meetings, we will be reviewing the risk assessment data developed to date and are looking for your feedback in refining and adding to the in process Risk Assessment. ***We encourage attendance and participation from the general public at either our upcoming Planning Committee or Public Meetings; please select the time that works best for you:***

Planning Committee Meeting
August 17, 2023 (Thursday)
1:00 – 4:00 pm
Newark Library
37055 Newark Blvd.
Newark, CA 94560

Public Meeting
August 17, 2023 (Thursday)
6:00 – 7:30 pm
Kennedy Youth Center
1333 Decoto Rd.
Union City, CA 94587

For more information on this project, please visit: my.fremont.gov/tri-city-hazard-plan. For questions, please contact Alec Tune, Emergency Services Manager, Fremont Fire Department at (510) 494-4256 or atune@fremont.gov.

Source: Tri-City

Public Meeting #2: Risk Assessment

A second public meeting was held to provide an overview of the hazard risk assessment portion of the LHMP. This meeting was held in the City of Union City the evening of the Planning Committee risk assessment meeting. This meeting was advertised through the MyFremont website and through other public outreach efforts as previously described. This included posting the meeting on the City of Fremont primary website, posting meeting details on the MyFremont LHMP website and websites for the other participating jurisdictions, and through other social media outreach mechanisms.

Final Public Meeting #3: On the Draft LHMP

The first draft of the LHMP was provided to the Planning Committee in November 2023, with a public review draft provided in January 2023. A public meeting was held on January 24, 2023, to present the draft LHMP and to collect public comments on the public review draft prior to finalization and submittal to Cal OES/FEMA. The public meeting was advertised in a variety of ways to maximize outreach efforts to both targeted groups and to the public at large and included an advertisement in local newspapers inviting the public to attend either the formal public meeting or the Planning Committee meeting at their convenience. The advertisement in the local newspapers included information on the date, location and time of the meeting, where the draft Plan could be accessed in the community, and how to provide comments on the draft LHMP Update. In addition to a copy of the public review draft being placed on the MyFremont website in advance of these meetings, hard copies of the draft Plan were made available at various public locations in the Tri-City area. These locations included the Fremont Main Library, the Newark Library, and the Union City, City Hall. Documentation to support the final public meeting, including meeting outreach, can be found in Appendix A.

In addition to the advertisement for public participation, notices of meetings were sent directly to all persons on the Planning Committee contact list and also to other agency and key stakeholders (including the public) with an interest in the Tri-City Planning Area. The majority of these people reside in the Tri-City Planning Area or in surrounding communities. Because this is a multi-jurisdictional planning effort, all public outreach activities for this LHMP Update were conducted in cooperation with and on behalf of the City of Fremont, as the project lead and CRS community, the Cities of Newark and Union City, as eligible CRS communities, as well as for the ACWD and USD, as the other two participating jurisdictions to this 2024 LHMP Update.

The formal public meetings for this project are summarized in Table 3-6.

Table 3-6 Schedule of Public and Stakeholder Meetings

Meeting Type	Meeting Topic	Meeting Date	Meeting Locations
Early Public Kickoff Meeting #1	1) Intro to DMA, CRS and mitigation planning 2) 2024 LHMP Update Process	May23, 2023	George M. Silliman, Community Activity Center, Newark
Early Public Kickoff Meeting #1	1) Intro to DMA, CRS and mitigation planning 2) 2024 LHMP Update Process	July 13, 2023	Age Well Center at Lake Elizabeth, Fremont

Meeting Type	Meeting Topic	Meeting Date	Meeting Locations
Risk Assessment Public Meeting	1) Overview of the Risk Assessment Data and process	August 17, 2023	Kennedy Youth Center, Union City
Final Public Meeting	1)Presentation of Draft LHMP and solicitation of public and stakeholder comments	January 24, 2024	Fremont Main Library, Fremont

Where appropriate, stakeholder and public comments and recommendations were incorporated into the final Plan throughout the Plan development process, including the sections that address mitigation goals and strategies. Public comments were obtained throughout the planning process and prior to LHMP submittal to Cal OES and FEMA. A summary of public comments received is included in Appendix A. Many of the public comments were addressed, as appropriate, in the final version of the LHMP prior to submittal to Cal OES; others were considered more high level policy comments preserved for later discussion. All press releases, newspaper advertisements and articles, website postings, and public outreach efforts are on file with Fremont OES and are included in Appendix A.

The draft Plan is currently available online on the MyFremont website at: https://www.my.fremont.gov/tri-city-hazard-plan. In addition, links to this website were provided on the local websites of the Cities of Newark and Union City, the ACWD, and the USD.

Other Public Outreach Efforts

Beyond these more formal public involvement activities, the LHMP Update process also included the following public outreach activities included in Table 3-7 which are further documented and described in Appendix A. The public outreach activities described herein were conducted with participation from and on behalf of all jurisdictions participating in this LHMP Update, including City of Fremont as project lead and the CRS community, the Cities of Newark and Union City as eligible CRS communities, and the ACWD and the USD Water District as the two participating special districts.

Table 3-7 Other Public Outreach Efforts

Public Outreach Activity	Description
MyFremont LHMP Update Website May 2023 – February 2024	MyFremont housed the official Tri-City 2024 LHMP Update webpage. Information on the Plan update process and location of documents, and all Planning Committee and public meeting locations were posted on the MyFremont website. This website also included a link to the Survey.
Public Outreach Flyer for Kickoff Meeting May 2023	An initial public outreach flyer was developed for the initial public and planning committee kick off meetings and updated throughout the project.
Public Outreach Flyer in Newark Community Centers May 2023	Public outreach flyer posted in the 3 Newark community centers. This included the Clark W. Redeker Newark Senior Center, the George M. Silliman Community Activity Center, and the Newark Community Center.
Union City Bike to Work Day May 18, 2023	In Union City held a bike to workday on 5/18/2023 - the City provided a handout, and the Public Outreach Flyer was included the flyer in the 150 bags that were distributed.

Public Outreach Activity	Description
Newark Swearing-In Ceremony for new County Supervisor Vasquez May 2023	Richard Martinez attended the swearing in ceremony held in Newark for new County Supervisor Vasquez. As part of that ceremony, he did outreach for the LHMP Kickoff planning committee and public meetings and had the Public Outreach Flyers handed out.
ACWD posting of LHMP Flyer in their Lobby May/June 2023	The public outreach flyer was posted in late May/June 2023 in the ACWD lobby to let customers and visitors to the District know of the LHMP kickoff meeting and how they can be involved.
City of Fremont Website Fremont.gov July – February 2024	The City of Fremont Website has been providing coverage of the LHMP project. It is one of three highlighted initiatives on the City's Main pagefremont.gov. Additionally, all upcoming Planning Committee and Public Meeting dates appear on the City's calendar (at https://www.fremont.gov/residents/city-calendar), and are highlighted on the main page for the City Manager's Office, https://www.fremont.gov/government/departments/city-manager.
City of Newark Website	The City of Newark developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website, Local Hazard Mitigation Plan - LHMP | Newark, CA, linked to the MyFremont LHMP webpage.
City of Union City Website	The City of Union City developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website, Tri-City Local Hazard Mitigation Plan 2024 | Union City, CA, linked to the MyFremont LHMP webpage.
Alameda County Water District Website	Alameda County Water District posted information throughout the LHMP Update process on their website. The District also posted information on Twitter, Facebook, and Instagram to outreach the LHMP.
Union Sanitary District Website	The Union Sanitary District developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website, Tri-City 2023 Multi-Jurisdictional Local Hazard Mitigation Plan - Union Sanitary District, linked to the MyFremont LHMP webpage.
City of Newark Facebook May 20 & 23, 2023	The City of Newark posted on Facebook to remind everyone of the Tri-City 2024 LHMP kickoff meeting.
City of Union City Facebook, Twitter, Instagram May 19, 20, 33, & 23, 2023	The City of Union City posted on Facebook, Twitter, and Instagram to remind everyone of the Tri-City 2024 LHMP kickoff meeting.
Tri-City 2024 LHMP Public Outreach Survey August 2023 – January 2024	A public survey was posted on the MyFremont website inviting the public to comment on how concerned and prepared the five participating jurisdictions and individuals are for a possible natural disaster, including flood events. The Survey was advertised through a variety of mechanisms throughout the Plan development process. This included utilizing a QR code embedded in the Public Outreach Flyer. See https://www.my.fremont.gov/tri-city-hazard-plan
Union City CERT table at the South Alameda Buddhist Bizarre Event June 25, 2023	The public outreach flyer was included at the Union City CERT table at the South Alameda Buddhist Bizarre Event promoting the LHMP and how the public can get involved.
Union Sanitary District Public Outreach July 2023	The Union Sanitary District placed the public outreach flyer at their permit counter promoting the LHMP and how the public can get involved.

Public Outreach Activity	Description
City of Newark Social Media and City Website LHMP Survey Outreach August 2023	The City of Newark promoted the LHMP Survey on both the City website and through social media.
City of Fremont Social Media Posting Facebook, August 8, 2023	The City of Fremont promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media outreach, including Facebook.
City of Fremont Social Media Posting Twitter, August 8, 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media, including Twitter.
City of Fremont Social Media Posting Nextdoor, August 9, 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media, including Nextdoor.
City of Newark Social Media and City Website LHMP Outreach August 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media.
City of Union City Social Media and City Website LHMP Outreach August 2023	The City of Union City promoted the LHMP Survey on both the City website and through social media.
City of Union City Social Media and City Website LHMP Outreach August 2023	The City of Union City promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media.
Fremont's Citywide weekly e-newsletter to residents, The Fremont CONNECTION August 18, 2023	Fremont's Citywide weekly e-newsletter to residents, The Fremont CONNECTION August 18, 2023, promoted the LHMP survey.
City of Fremont, Facebook LHMP Survey Promotion August 18, 2023	The City of Fremont promoted the LHMP survey on Facebook.
City of Fremont, LinkedIn LHMP Survey Promotion August 18, 2023	The City of Fremont promoted the LHMP survey on LinkedIn.
Newark Days September 14-17	The public outreach flyer was included at the Newark CERT table at Newark Days promoting the LHMP and how the public can get involved.
Union City Community Outreach at Our Lady of the Rosary on Saturday October 7, 2023	The public outreach flyer for the LHMP was developed into a sign and index size cards to hand out at the Union City Community Outreach at Our Lady of the Rosary on Saturday October 7, 2023

Public Outreach Survey

An integral element in hazard mitigation planning is broad public participation. Information provided by residents fosters a better understanding of local hazard concerns and can spawn innovative ideas to reduce

impacts of future hazard events. A public opinion survey was conducted to gather information from Tri-City Planning Area residents concerning local hazards. The survey was located on the MyFremont's LHMP website and survey participation was promoted through public and Planning Committee meetings and other public outreach efforts including social media platforms. Following is a summary of survey results:

- The survey was taken by 39 people.
- 26 lived in Fremont, 7 in Newark, and 5 in Union City.
- The top three hazards of concern were drought and water shortage, earthquake, and wildfire.
- 38.5% of respondents had experienced a natural disaster.
- 7.7% of respondents stated their home was in a floodplain. 51.3% did not know.
- 2.6% of people surveyed carried flood insurance.
- 30.8% stated they were insured for earthquakes.
- 7.7% of respondents were very prepared for a natural disaster.
- 71.5% of respondents were somewhat prepared for a natural disaster.
- The top three communications methods about natural disasters and preparedness were from direct mailings, e-newsletters, and social media.

Full survey results can be found in Appendix G.

Planning Step 3: Coordinate with Other Departments and Agencies

Early in the planning process, the Planning Committee determined that data collection, mitigation strategy development, and LHMP review and approval would be greatly enhanced by inviting other local, state and federal agencies and organizations to participate in the process. Based on their involvement in hazard mitigation planning, their landowner status in the Tri-City Planning Area, and/or their interest as a neighboring jurisdiction, representatives from the following agencies were invited to participate on the Planning Committee:

- AC Transit
- ACFCWCD
- Alameda County
- Alameda County 2-1-1/Eden Information & Referral (Eden I&R)
- Alameda County Fire Department
- Alameda County Flood Control and Water Conservation District
- Alameda County Library
- Alameda County Public Works Agency
- Alameda County Sheriff's Office
- Alameda County Voluntary Organizations Active in Disasters (ALCO VOAD)
- Alameda County Water District
- American Red Cross
- Bay Area Community Health
- Bay Area Rapid Transit
- Cal DWR
- Cal Fire
- Cal OES
- Cal Trans
- California Department of Education
- California Department of Fish and Wildlife
- California Department of Forestry & Fire Protection

- California Department of Water Resources
- California Earthquake Authority
- California Governor's Office of Emergency Services
- California Native Plant Society
- California Resiliency Alliance
- City of Fremont
- City of Newark
- City of Union City
- Diablo Fire Safe Council
- East Bay MUD
- East Bay Regional Park District
- Federal Emergency Management Agency, Region IX
- Fremont Unified School District
- Friends of Children with Special Needs
- Kaiser Permanente Medical Center, Fremont
- Lam Research
- National Weather Service
- New Haven Unified School District
- Newark Unified School District
- Ohlone Community College District
- Pacific Gas & Electric
- PG&E
- San Francisco Bay Conservation & Development Commission
- San Francisco Public Utilities Commission
- Santa Clara Valley Water District
- SPUR
- U. S. Geological Survey
- U.S. Army Corps of Engineers
- UC Berkely
- UCSF
- Union Sanitary District
- Washington Hospital Healthcare System
- United States Forest Service

Additional Agency Coordination

Coordination with key agencies, organizations, and advisory groups throughout the planning process allowed the Planning Committee to review common problems, development policies, and mitigation strategies as well as identifying any conflicts or inconsistencies with regional mitigation policies, plans, programs and regulations. Coordination involved contacting these agencies through a variety of mechanisms and informing them on how to participate in the LHMP Update process and if they had any expertise or assistance, they could lend to the planning process or specific mitigation strategies. Coordination with these groups included holding face-to-face or virtual meetings, sending outreach e-mails, (some with follow up phone calls), and making phone calls alone to out of area agencies. All of these groups and agencies were solicited asking for their assistance and input, telling them how to become involved in the LHMP Update process, and inviting them to the Planning Committee meetings. This coordination with other agencies is documented in Appendix A and includes a summary table of who was contacted, the method of contact, and the purpose. Supporting documentation such as emails and meeting logs are also included.

In addition, as part of the overall stakeholder and agency coordination effort, the Planning Committee coordinated with and utilized input to the LHMP Update from the following agencies:

- Cal-Adapt
- Cal Atlas
- Cal OES
- CAL FIRE
- Cal Trans
- California Department of Conservation
- California Department of Finance
- California Department of Fish and Wildlife
- California Department of Food and Agriculture
- California Department of Parks and Recreation
- California Department of Water Resources
- California Division of Mines and Geology
- California Employment Development Department
- California Geological Survey
- California Invasive Plant Council
- California Natural Resources Agency
- East Bay MUD
- East Bay Regional Park District
- FEMA Region IX
- Library of Congress
- National Drought Mitigation Center
- National Levee Database
- National Oceanic and Atmospheric Association
- National Performance of Dams Program
- National Register of Historic Places
- National Resource Conservation Service
- National Response Center
- National Weather Service
- Pacific Gas and Electric
- Public Policy Institute of California
- United States Army Corps of Engineers
- United States Bureau of Land Management
- United States Bureau of Reclamation
- United States Department of Agriculture
- US Department of Transportation
- United States Forest Service
- United States Geological Survey
- United States Occupational Health and Safety Agency
- Western Regional Climate Center

Several opportunities were provided for the groups listed above to participate in the planning process. At the beginning of the planning process, invitations were extended to many of these groups to actively participate on the Planning Committee. Specific participants from these groups are detailed in Appendix A. Others assisted in the process by providing data directly as requested in the Data Worksheets or through data contained on their websites or as maintained by their offices. Further as part of the public outreach

process, all groups were invited to attend the public and Planning Committee meetings and to review and comment on the draft LHMP prior to submittal to CAL OES and FEMA.

Other Community Planning Efforts and Hazard Mitigation Activities

Coordination with other community planning efforts is also paramount to the success of this LHMP Update. Hazard mitigation planning involves identifying existing policies, tools, and actions that will reduce a community's risk and vulnerability to hazards. The five participating jurisdictions to this Plan use a variety of comprehensive planning mechanisms, such as general plans and ordinances, to guide growth and development. Integrating existing planning efforts and mitigation policies and action strategies into this LHMP Update establishes a credible and comprehensive Plan that ties into and supports other community programs. The development of this LHMP Update incorporated information from the following existing plans, studies, reports, and initiatives as well as other relevant data from neighboring communities and other jurisdictions. This gives a general overall list of plans, studies, and reports. More can be found in Appendix B to this Plan Update.

- 2016 City of Fremont Local Hazard Mitigation Plan
- 2017 City of Fremont, Newark, Union City, Alameda County Water District, and Union Sanitary District Local Hazard Mitigation Plan
- 2022 Alameda County Water District Local Hazard Mitigation Plan Update
- 2023 State of California Hazard Mitigation Plan
- 2021 Alameda County Local Hazard Mitigation Plan Public Draft
- CAL FIRE Plans and data
- CAL OES plans and data
- California Department of Finance demographic documents
- California Department of Water Resources plans and information
- California DWR Division of Safety of Dams plans and information
- California Geological Survey Plans
- Capital Improvement Plans for each jurisdiction
- Climate Adaptation Plans
- Climate Change and Health Profile Report – Alameda and Contra Costa County
- CWPPs
- Dam Emergency Action Plans
- Emergency Operations Plans
- Evacuation Plans
- FEMA mitigation planning documents
- Flood Insurance Studies
- General Plans for each of the cities
- Housing Elements for each of the cities
- National Weather Service documents
- Stormwater Master Plans
- US Department of Agriculture Reports
- US Department of Interior Plans
- US Fish and Wildlife reports
- USGS Reports

Specific source documents are referenced at the beginning of each section of Chapter 4 and in Appendix B. These and other documents were reviewed and considered, as appropriate, during the collection of data to

support Planning Steps 4 and 5, which include the hazard identification, vulnerability assessment, and capability assessment. Data from these plans and documents were incorporated into the hazard risk assessment sections of the LHMP. Where data and information from the existing studies and reports is used in this LHMP Update, the source document is referenced throughout this Plan. The information was also used to identify potential hazard mitigation strategies for inclusion in this LHMP Update and in assessing the capabilities of the participating jurisdictions in implementing the resulting mitigation strategy. Appendix B, References, provides a detailed list of references used in the preparation of this LHMP Update.

Coordination with Underserved Communities and Socially Vulnerable Populations

As detailed in FEMA's new 2023 LHMP guidance, the LHMP development process should utilize the Whole Community approach to hazard mitigation planning. Engagement and coordination with a variety of community-based organizations that work directly with or provide support to underserved communities and socially vulnerable populations, including individuals with disabilities and access and functional needs, is a critical component in addressing equity in mitigation planning and implementation. For this LHMP project, significant efforts were made to identify and engage the appropriate community members and groups to support the Plan development process. The participating cities to this LHMP Update comprise three of the 14 cities within Alameda County, California. Similar to most County-City organizational structures, Alameda County provides numerous countywide services to cities that are often not duplicated at the city level. This often includes the County Public Health Department and associated organizations and groups that provide support and services to these underserved and vulnerable populations. Thus, reaching out to the broader county-level community in addition to the three Cities was required to best meet this element.

As part of the planning process, efforts made to identify and engage these groups in the Tri-City 2024 LHMP Update project included the following:

- **Listos California** – Anchored at the Governor's Office of Emergency Services (Cal OES) since 2019, Listos California engages a statewide network of community-based organizations, Tribal Governments, and Community Emergency Response Teams across the state to boost resiliency, provide accessible in-language information and advance a new culture of disaster preparedness. The managing director of Listos indicated that they are not allowed to give out any local names/subgrantees to anyone and to look at their website to see a list of participating groups.
- **California School for the Deaf and the Blind –** Several representatives from California Schools for the Deaf and Blind were invited to be part of the LHMP Planning Committee.
- **Independent Living Resources of Solano and Contra Costa Counties (ILRSCC), Emergency Preparedness Coordinator** – Independent Living Resources is a non-profit organization serving the Solano and Contra Costa Counties as well as Alameda County. Through educational empowerment and advocacy, Independent Living Resources' main goal is to incorporate those with disabilities into the community- eliminating all institutional, social, and attitudinal barriers that hinder progress. A primary focus of ILRSCC is to assist with disaster planning and preparedness for those with disabilities and access and functional needs. Coordination with the Emergency Preparedness Coordinator occurred as part of the LHMP Update to encourage participation and input into the Plan development process. The ILRSCC, Emergency Services Coordinator, was invited to be part of the LHMP Planning Committee. In addition, working through the ILRSCC Emergency Services Coordinator, additional

outreach and invitations to participate on the LHMP Planning Committee were extended to staff from the Community Resources for Independent Living (CRIL), Regional Center of the East Bay, Friends of Children with Special Needs, and the Developmental Disabilities Council of Alameda County.

- **Eden I&R, Disaster Preparedness Coordinator** – The mission of Eden I&R is to link people and resources by responding to the community's changing needs. Eden I&R has become a critical resource for thousands of at-risk individuals, such as youth, non-English speakers, the economically disadvantaged, people living with HIV/AIDS, domestic violence survivors, the elderly, disabled, the homeless, and human service agencies seeking services or housing for their clients. As part of their mission, the organization has a Disaster Sources and Resources section to provide support and resources to groups and individuals before, during, and after a disaster. The Eden I&R Disaster Preparedness Coordinator was invited to be on the LHMP Planning Committee and participate in the Tri-City LHMP Update project.
- **Alameda County Volunteer Organizations Active in Disasters (AlCo VOAD), Chair and Vice Chair** – VOAD is a humanitarian association of independent voluntary organizations active in emergency disaster relief, National VOAD was founded in 1970 with the purpose of coordination relief efforts between voluntary agencies, faith-based groups, and government organizations involved in disaster response. The mission of VOAD is to provide efficient services to all disaster victims and eliminate the duplication of services. VOAD is organized on a national, state, and county basis to help meet emergency needs. AlCo VOAD is the Alameda County component of the VOAD movement. As part of the Tri-City LHMP Update, both the AlCo VOAD Chair and Vice Chair were invited to be on the Planning Committee and provide input into the Plan development process.
- **Community Resources for Community Living (CRIL), Hayward** – CRIL was organized in 1979. CRIL's main office is in Hayward with branch offices in Fremont and Livermore. There are 28 Independent Living Centers (ILCs) in California and over 400 in the US. CRIL advocates and provides resources for people with disabilities to improve lives and make communities fully accessible. The independent living philosophy promotes consumer control (people with disabilities involved in decision-making, service delivery and management, of the ILC); self-help and self-advocacy; development of peer relations and peer role models; and equal access to services, programs, activities, resources, and facilities in the community. As part of the Tri-City LHMP Update, several members of CRIL were invited to be on the Planning Committee and provide input into the Plan development process.
- **Regional Center of East Bay (RCEB)** – RCEB works in partnership with many individuals and agencies to plan and coordinate services and supports for people with developmental disabilities, family members and community leaders in the Alameda and Contra Costa counties. As part of the Tri-City LHMP Update, a representative from RCEB was invited to be on the Planning Committee and provide input into the Plan development process.
- **Alameda County Public Health Department, Family Health Services (FHS) Division** –The mission of the Family Health Services Division of the Alameda County Public Health Department is to improve the health and well-being of our diverse families with compassionate, comprehensive and collaborative services. As part of the Tri-City LHMP Update, a representative from FHS was invited to be on the Planning Committee and provide input into the Plan development process.

3.2.2. Phase 2: Assess Risks

Planning Steps 4 and 5: Identify the Hazards and Assess the Risks

Foster Morrison led the Planning Committee in a research effort to identify, document, and profile all the hazards that have, or could have, an impact to the Tri-City Planning Area. Starting with the 2016/2017/2022 LHMPs, natural hazards of concern were added, deleted, and modified for this LHMP Update. Data collection worksheets were developed and used in this effort to aid in determining hazards and vulnerabilities and where the risk varies across the Tri-City Planning Area. Geographic information systems (GIS) were used to display, analyze, and quantify hazards and vulnerabilities.

The Planning Committee also conducted a capability assessment to review and document the Tri-City Planning Area's current capabilities to mitigate risk from and vulnerability to hazards. By collecting information about existing government programs, policies, regulations, ordinances, and emergency plans, the Planning Committee could assess those activities and measures already in place that contribute to mitigating some of the risks and vulnerabilities identified.

NFIP Participation

Also addressed in the risk assessment and mitigation strategy of this 2024 LHMP is an assessment of the three Cities' floodplain management programs and participation in the NFIP, including a discussion of their continued compliance with NFIP requirements and the City of Fremont's CRS program. However, it should be noted that this applies only to eligible NFIP communities. Participating special districts to this LHMP Update do not address their compliance with the NFIP as they are not eligible jurisdictions for purposes of the NFIP.

High Hazard Potential Dam (HHPD) Program

Dams are an aging infrastructure; the average age of dams in the US is 57 years. High hazard potential is a classification standard for any dam whose failure or mis-operation will cause loss of human life and significant property destruction. Many of these high hazard dams lack regular maintenance and improvements and present an ongoing risk to nearby communities. In response, the Consolidated Appropriations Act, 2019 appropriated millions for the HHPD program for each of fiscal years 2021 through 2026. The purpose of the HHPD program is to provide assistance for repair, removal or rehabilitation of HHPDs, and may include funding for technical, planning, design, and construction activities. The focus on this recent program is to provide funding for those dams that pose an unacceptable risk to the public. In order to be eligible for this grant program, all dam risks must be addressed in both state and local hazard mitigation plans, in addition to other eligibility requirements.

The ACWD, a participating jurisdiction seeking FEMA approval of the Tri-City 2024 LHMP, owns six dams located within the Tri-City Planning Area. This includes the DeCoto Reservoir, an Extremely High Hazard dam; the Middlefield Reservoir and Quarry Pits Dam, both High Hazard dams; and the Shinn Dam, Rubber Dam #3 and Patterson Dam, all Significant Hazard dams. Thus, this LHMP Update is being developed to establish eligibility and access of the ACWD to FEMA's HHPD grant program.

3.2.3. Phase 3: Develop the Mitigation Plan

Planning Steps 6 and 7: Set Goals and Review Possible Activities

Foster Morrison facilitated brainstorming and discussion sessions with the Planning Committee that described the purpose and process of developing planning goals and objectives, a comprehensive range of mitigation alternatives, and a method of selecting and defending recommended mitigation actions using a series of selection criteria. This information is included in Chapter 5 Mitigation Strategy. Additional documentation on the process the Planning Committee used to develop the goals and mitigation strategy is in Appendix C.

Planning Step 8: Draft an Action Plan

Based on input from the Planning Committee regarding the draft risk assessment and the goals and activities identified in Planning Steps 6 and 7, a complete first draft of the LHMP Update was developed. This complete draft was provided for Planning Committee review and comment via a Dropbox web link. Other agencies and the Public Planning Committee and Steering Committee members were invited to comment on this draft as well. Planning Committee and agency comments were integrated into the second public review draft, which was advertised and distributed to collect public input and comments. The Planning Committee integrated comments and issues from the public, as appropriate, along with additional internal review comments and produced a final draft for CAL OES and FEMA Region IX to review and approve, contingent upon final adoption by governing boards of all participating jurisdictions.

3.2.4. Phase 4: Implement the Plan and Monitor Progress

Planning Step 9: Adopt the Plan

In order to secure buy-in and officially implement the LHMP Update, the Plan was adopted by the governing boards of each participating jurisdiction using the sample resolutions contained in Appendix D.

Planning Step 10: Implement, Evaluate, and Revise the Plan

The true worth of any mitigation plan is in the effectiveness of its implementation. Up to this point in the planning process, all of the Planning Committee's efforts have been directed at researching data, coordinating input from participating entities, and developing appropriate mitigation actions and projects. Each recommended action includes key descriptors, such as a lead manager and possible funding sources, to help initiate implementation. An overall implementation strategy is described in Chapter 7 Plan Implementation and Maintenance.

Finally, there are numerous organizations within the Tri-City Planning Area whose goals and interests interface with hazard mitigation. Coordination with these other planning efforts, as addressed in Planning Step 3, is paramount to the implementation and ongoing success of this plan and mitigation in the Tri-City Planning Area and is addressed further in Chapter 7.

Implementation and Maintenance Process: 2016/2017/2022

The previous 2016/2017/2022 LHMPs included a process for Plan maintenance and implementation of the mitigation strategy as well as formal updates to the LHMP. The 2016/2017/2022 processes called for periodic reviews with the status of mitigation strategy implementation. In addition, the 2016/2017/2022 processes called for a formal plan update as required by DMA regulations every 5 years. With respect to Fremont, no formal process was followed for periodic reviews. For Newark and Union City, no formal process was utilized for periodic reviews. Each department that was assigned a mitigation action from the 2017 LHMP was responsible for implementing and maintaining those mitigation action items. Likewise, ACWD and USD did not follow a specific process for maintenance and implementation of their 2017 and 2022 LHMPs. ACWD indicated that while reviews are not regularly scheduled, they happened naturally as part of the ACWD's Grant Team and as part of the Capital Improvement Program (CIP) process to ensure continuity between programs and to maximize mitigation opportunities. Similarly, USD regularly reviewed the 2017 LHMP as part of their CIP and other District programs to identify possible funding and program mechanisms for mitigation action implementation. This 2024 LHMP Update, once approved and adopted, will meet the DMA formal 5-year update requirement for all participating jurisdictions.

In addition, the 2016/2017/2022 LHMPs were relied on and integrated into other planning mechanisms in the Tri-City Planning Area. Specific to each participating jurisdiction, the jurisdictional annexes identify the planning mechanisms the 2016/2017/2022 LHMPs were integrated into.

The plan implementation and maintenance process as set forth in the 2016/2017/2022 LHMPs has been updated for this LHMP Update. The revised implementation and maintenance process for the Tri-City 2024 LHMP Update is set forth in Section 7 of this Plan document. A strategy for continued public involvement for this update process is also included in Chapter 7.

Chapter 4 Risk Assessment

44 CFR §201.6(c)(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

The cities of Fremont, Newark, Union City, and the special districts of Alameda County Water District (referred to here as the Tri-City Planning Area) risk assessment process identifies and profiles relevant hazards and assesses the exposure of lives, property, and infrastructure to these hazards. The process allows for a better understanding of a jurisdiction's potential risk to hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

This risk assessment followed the methodology described in the FEMA publication Understanding Your Risks—Identifying Hazards and Estimating Losses (FEMA 386-2, 2002), which breaks the assessment into a four-step process:

1. Identify hazards
2. Profile hazard events
3. Inventory assets
4. Estimate losses

This Chapter 4 of the Base LHMP covers the entire geographical extent of the Tri-City Planning Area and addresses the Tri-City Planning Area as a whole. The Jurisdictional Annexes provide additional risk assessment detail as to how the hazard risk differs across the Tri-City Planning Area and specific to each jurisdiction.

Data collected through this process has been incorporated into the following sections of this chapter:

- **Section 4.1 Hazard Identification: Natural Hazards** identifies the natural hazards that threaten the Tri-City Planning Area and describes why some hazards have been omitted from further consideration.
- **Section 4.2 Tri-City Planning Area Assets Inventory and Growth and Development Trends** identifies the property values; populations; critical facilities; and cultural, historical, and natural resources at risk. This information is not hazard specific and covers the entire Tri-City Planning Area. It also identifies past growth in the Tri-City Planning Area and reviews future development trends.
- **Section 4.3 Hazard Profiles and Vulnerability Assessment** provides an overview of each hazard, its location and extent, and discusses the risk, vulnerability, and impacts of each natural hazard to the Tri-City Planning Area. The hazard profile also describes previous occurrences of hazard events and the likelihood of future occurrences. The vulnerability assessment evaluates the Tri-City Planning Area's exposure to natural hazards; considering assets at risk, populations at risk, critical facilities, future development trends, and, where possible, estimates potential hazard losses.

- **Section 4.4 Capability Assessment** inventories existing mitigation activities and policies, regulations, and plans that pertain to mitigation in the Tri-City Planning Area and can affect net vulnerability.

This LHMP Update involved a comprehensive review and update of each section of the previous 2016/2017/2022 LHMP risk assessments. Information from the 2016 (for the City of Fremont), 2017 (for the cities of Newark and Union City, as well as the Alameda County Water District and the Union Sanitary District), and 2022 Alameda County Water District (update to 2017) LHMP was used in this Update where valid and applicable. As part of the risk assessment update, new data was used, where available, and new analyses were conducted. Where data from existing studies and reports was used, the source is referenced throughout this risk assessment. Refinements, changes, and new methodologies used in the development of this risk assessment update are summarized in Chapter 2 What's New and are also detailed in this risk assessment portion of this Plan.

4.1 Hazard Identification: Natural Hazards

44 CFR §201.6(c)(2)(i): [The risk assessment shall include a] description of the type…of all natural hazards that can affect the jurisdiction.

The Planning Committee conducted a hazard identification study to determine the natural hazards that threaten the Tri-City Planning Area. This section details the methodology and results of this effort.

Data Sources

The following data sources were used for this Hazard Identification portion of the Plan:

- Planning Committee input
- National Oceanic and Atmospheric Administration National Climatic Data Center Storm Events Database
- 2016 City of Fremont Local Hazard Mitigation Plan
- 2017 City of Fremont, Newark, Union City, Alameda County Water District, and Union Sanitary District Local Hazard Mitigation Plan
- 2022 Alameda County Water District Local Hazard Mitigation Plan Update
- 2023 Draft State of California Hazard Mitigation Plan
- 2021 Alameda County Local Hazard Mitigation Plan Public Draft
- FEMA Disaster Declaration Database

4.1.1. Methodology and Results

Using existing natural hazards data and input gained through the kickoff planning meeting and other sources, the Planning Committee agreed upon a list of natural hazards that could affect the Tri-City Planning area. Hazards data from the California Office of Emergency Services (Cal OES), FEMA, the National Oceanic and Atmospheric Administration (NOAA), and many other sources were examined to assess the significance of these hazards to the Planning Area. Those hazards identified as a high or medium significance are considered priority hazards for mitigation planning. Those hazards that occur infrequently or have little or no impact on the Planning Area were determined to be of low significance and not considered a priority hazard. Significance of each identified hazard was measured in general terms and

focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage. The ability of a community to reduce losses through implementation of existing and new mitigation measures was also considered as to the significance of a hazard. The natural hazards evaluated as part of this Plan include those that have occurred historically and/or have the potential to cause significant human and/or monetary losses in the future. For this Chapter 4, all hazards are profiled.

The following hazards in Table 4-1, listed alphabetically, were identified and investigated for this LHMP Update. All hazards from the 2016/2017/2022 Plans were profiled in this LHMP Update. Localized flood and winds were broken out as standalone hazards. New hazards include levee failure.

Table 4-1 Tri-City Planning Area Hazard Identification and Comparison

City of Fremont 2016 LHMP	2017 Union City and Newark LHMP*	2021 Alameda County Plan	2023 State of California Plan Applicable Hazards*	Proposed 2023 Hazards*
Climate Change (including drought, extreme heat, and sea level rise)	As part of other hazards.	Climate Change	Climate Change and Related Hazards	Climate Change (as a standalone and as it exacerbates other hazards)
Floods (1%/0.2%, coastal flooding, dam inundation	Dam Failure	Dam Failure	Dam Failure	Dam Failure
Climate Change (including drought, extreme heat, and sea level rise)	Drought	Drought	Droughts and Water Shortage	Drought & Water Shortage
Earthquake (including liquefaction, tsunami, and seiche)	Earthquake	Earthquake	Earthquake (with Subsidence as a separate hazard)	Earthquake (and earthquake liquefaction)
Floods (1%/0.2%, coastal flooding, dam inundation	Flood	Flood	Riverine, Stream, and Alluvial Flood	Flood: 1%/0.2% annual chance
–	–	Flood	Riverine, Stream, and Alluvial Flood	Flood: Localized/Stormwater Flooding
Landslides	Landslide	Landslide	Landslide, Debris Flow, and other Mass Movements	Landslide
–	–	–	Levee Failure	Levee Failure
–	–	Infectious Disease	Epidemic/Pandemic/Vector-Borne Disease	–
–	–	Public Safety Power Shutoff		–

City of Fremont 2016 LHMP	2017 Union City and Newark LHMP*	2021 Alameda County Plan	2023 State of California Plan Applicable Hazards*	Proposed 2023 Hazards*
Climate Change (including drought, extreme heat, and sea level rise)	Severe Weather	–	Extreme Heat	Severe Weather: Extreme Heat
–	Severe Weather	–	Severe Wind, Weather, and Storms	Severe Weather: Heavy Rain and Storms
Earthquake (including liquefaction, tsunami, and seiche)	–	Tsunami	Tsunami and Seiche	Tsunami
–	Severe Weather	–	Severe Wind, Weather, and Storms	Severe Weather: High Winds
–	–	–	Subsidence	Subsidence
Fire	Wildfire	Wildfire	Wildfire	Wildfire (with smoke/ air quality)

*also included the Alameda County Water District and the Union Sanitary District

Certain hazards were excluded from consideration for this Plan. They are shown in Table 4-2. The 2023 State of California Hazard Mitigation Plan includes multiple man-made hazards. Most of these were excluded, as shown in Table 4-3

Table 4-2 Tri-City Planning Area – Excluded Natural Hazards

Hazard Excluded	Why Excluded
Avalanches	The Planning Area does not have measurable snowfall to have avalanche as a hazard.
Volcano	Given the location of active or potentially active volcanoes relative to the Planning Area, it was felt this hazard was not of concern to the City.

Table 4-3 Tri-City Planning Area – Excluded Man-Made Hazards

Hazard Excluded	Why Excluded
Public Safety Power Shutoff	This is included in multiple hazards, and was not considered a stand-alone hazard for this Plan, and was detailed in the Vulnerability section.
Terrorism	This is a natural hazards focused plan, and as such was not included in this Plan.
Air Pollution	This is discussed as part of the wildfire smoke issue and not as a standalone hazard.
Energy Shortage	This is included as part of the PSPS discussion.
Cyber Threats	This is a natural hazards focused plan, and as such was not included in this Plan.
Tree Mortality	Discussed in the drought, extreme heat, and wildfire sections and not as a standalone hazard.

Hazard Excluded	Why Excluded
Invasive and Nuisance Species	The Planning Committee felt this hazard was not of significant concern to the Tri-City Planning Area.
Civil Disorder	This is a natural hazards focused plan. Thus, this hazard was not included.
Well Stimulation	This is a natural hazards focused plan. Thus, this hazard was not included.
Oil Spills	This is a natural hazards focused plan. Thus, this hazard was not included.
Electromagnetic Pulse Attack	This is a natural hazards focused plan. Thus, this hazard was not included.
Radiological Accidents	This is a natural hazards focused plan. Thus, this hazard was not included.
Geomagnetic Storms	This is a natural hazards focused plan. Thus, this hazard was not included.

The worksheet below was completed by the Tri-City Planning Area Planning Committee to identify, profile, and rate the significance of identified hazards.

Table 4-4 Tri-City Planning Area Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly Likely	Critical	High	–
Coastal Flooding and Sea Level Rise	Limited	Highly Likely	Limited	Med-High	High
Dam Failure	Sig – Ext.	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Extensive	Likely	Limited	Medium	High
Earthquake	Extensive	Occasional/ Highly Likely	Catastrophic	High	Low
Flood: 1%/0.2% annual chance	Significant	Occasional	Critical	High	High
Flood: Localized/Stormwater Flooding	Extensive	Highly Likely	Limited	Medium	Medium
Landslide	Limited	Likely	Limited	Medium	Medium
Levee Failure	Limited	Unlikely	Limited	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Highly Likely	Limited	Low-Med	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rain and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Negligible	Low-Med	Medium
Subsidence	Limited	Likely	Negligible	Low	Medium
Tsunami	Limited	Unlikely	Limited	Low-Med	Low
Wildfire	Limited	Highly Likely	Critical	Medium	Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

4.1.2. Disaster Declaration History

One method to identify hazards based upon past occurrences is to look at what events triggered federal and/or state disaster declarations within the Tri-City Planning Area (although disaster declarations are generally declared on a county basis). Disaster declarations are granted when the severity and magnitude of the event's impact surpass the ability of the local government to respond and recover. Disaster assistance is supplemental and sequential. When the local government's capacity has been surpassed, a state disaster declaration may be issued, following the local agency's declaration, allowing for the provision of state assistance. Should the disaster be so severe that both the local and state government's capacity is exceeded, a federal disaster declaration may be issued allowing for the provision of federal disaster assistance.

The federal government may issue a disaster declaration through FEMA, the U.S. Department of Agriculture (USDA), and/or the Small Business Administration (SBA). FEMA also issues emergency declarations, which are more limited in scope and without the long-term federal recovery programs of major disaster declarations. The quantity and types of damage are the determining factors. This section focuses on state and federal disaster and emergency declarations.

Alameda County has experienced 29 federal and 32 state declarations since 1950. 20 of the federal declarations were associated with flood events (including heavy rain and storms), 2 from freeze, 2 from pandemic, 2 from wildfire, 1 from drought, 1 from earthquake, and 1 for hurricane (for evacuations stemming from Hurricane Katrina in 2005). Regarding state disaster declarations, 19 of the state declarations were associated with flood (including heavy rain and storms), 3 were economic, 2 were associated with drought, 2 were associated with pandemic, 2 with freeze, 1 was agricultural, 1 for fire, 1 from road damage, and 1 from other (Bay Area oil spill). Details of each federal and state disaster declaration are detailed in Table 4-5. A summary of federal and state disaster declarations is shown in Table 4-6.

Table 4-5 Alameda County Disaster Declarations 1950-2023

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
2023	California Severe Winter Storms, Straight-line Winds, Flooding, Landslides, and Mudslides	Flood	Storms	DR-4699	–	4/3/2023
2023	California Severe Winter Storms, Flooding, and Mudslides	Flood	Storms	DR-4683	–	1/14/2023
2023	California Severe Winter Storms, Flooding, and Mudslides	Flood	Storms	EM-3591	–	1/9/2023
2020	Covid-19	Pandemic	Pandemic	DR-4482	3/4/2020	1/20/2020
2020	Covid-19	Pandemic	Pandemic	EM-3428	3/4/2020	3/13/2020

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4308	3/7/2017	4/1/2017
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4305	2/10/2017	3/16/2017
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4301	–	2/14/2017
2014	California Drought	Drought	Drought	GP 2014-13	1/17/2014	–
2008	2008 January Storms	Flood	Flood	GP-2008-01	12/21/2007	–
2007	Bay Area Oils Spill	Other	Accident	GP-2007-15	11/9/2007	–
2006	California Severe Winter Storms, Flooding, Landslides, Mud Flows	Flood	Storms	DR-1646	–	6/5/2006
2005/2006	2005/06 Winter Storms	Flood	Storms	DR-1628	–	2/3/2006
2005	Hurricane Katrina Evacuations	Economic	Hurricane	EM-3248 2005	–	9/13/2005
2003	Road Damage	Flood	Storms	GP 2003	1/1/2003	–
2001	Energy Emergency	Economic	Greed	GP 2001	1/1/2001	–
1998	1998 El Nino Floods	Flood	Flood	DR-1203	Proclaimed	2/19/1998
1997	1997 January Floods	Flood	Storms	DR-1155	1/2/97-1/31/97	1/4/1997
1995	California Severe Winter Storms, Flooding, Landslides, Mud Flows	Flood	Storms	DR-1046	Proclaimed	3/12/1995
1995	1995 Severe Winter Storms	Flood	Storms	DR-1044	1/6/95-3/14/95	1/13/1995
1991	Oakland Hills Fire	Wildfire	Wildfire	DR-919	–	10/22/1991
1990	Freeze	Freeze	Freeze	DR-894	12/19/1990-1/18/1991	2/11/1991
1989	Loma Prieta Earthquake	Earthquake	Earthquake	DR-845	–	9/18/1989
1986	1986 Storms	Flood	Storms	DR-758	2/18-86-3/12/86	2/18/1986

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
1983	Bradford Levee Failure	Flood	Storms	GP 83-05	12/9/1983 1/18/1984	–
1983	1982-1983 Winter Storms	Flood	Storms	DR-677	12/8/1982- 3/21/1983	2/9/1983
1982	California Severe Storms, Flood, Mudslides, High Tide	Flood	Storms	DR-651	1/5/1982	1/7/1982
1981	Mediterranean Fruit Fly Infestation	Agricultural	Insect Pests	GP-1980 Medfly	12/1/1980	–
1979	Gasoline Shortage	Economic	OPEC	–	5/8/1979	–
1977	1976 Drought	Drought	Drought	EM-3023	2/9/1976, 2/13/1976, 2/24/1976, 3/26/1976, 7/6/1976	1/20/1977
1974	Gasoline Shortage	Economic	OPEC	–	2/28/1974 3/4/1974 3/10/1974	–
1973	Eucalyptus Tree Freeze	Freeze	Freeze	DR-373	4/4/1973	5/25/1973
1970	Forest and Brush Fires	Wildfire	Wildfire	DR-295	9/24/1970 9/28/1970 10/1/1970 10/2/1970 10/20/1970 11/14/1970	8/29/1970
1970	1970 Northern California Flooding	Flood	Flood	DR 283	1/27/1970 - 3/2/1970	2/16/1970
1963	1963 Floods	Flood	Storms	–	2/14/1964	–
1962	Flood and Rainstorm	Flood	Storms	–	10/17/1962, 10/25/1962, 10/30/1962, 11/4/1962	10/24/1962
1962	Floods and Rains	Floods	Storms	–	10/17/1962 10/25/1962 10/30/1962 11/4/1962	10/24/1962
1958	1958 April Storms and Floods	Flood	Storms	DR-52	4/5/1958	4/4/1958
1958	1958 February Storms and Floods	Flood	Storms	CDO 58-03	2/26/1958	–
1957	Unseasonal and Heavy Rainfall	Flood	Severe Storm, Economic	–	5/20/1957 (Cherry-producing)	–

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
1955	1955 Floods	Flood	Flood	DR-47	12/22/1955	12/23/1955
1950	1950 Floods	Flood	Flood	OCD 50-01	11/21/1950	–

Source: Cal OES, FEMA

Table 4-6 Alameda County Disaster Declarations 1950-2023 Summarized by Disaster Type

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Agricultural	1	1981	0	–
Drought	2	1976, 2014	1	1976
Earthquake	0	–	1	1989
Economic	3	1974, 1979, 2001	0	–
Freeze	2	1973, 1990	2	1973, 1990
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	20	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (three)
Hurricane	0	–	1	2005
Other	1	2007	0	–
Pandemic	2	2020	2	2020
Road Damage	1	2003	0	–
Wildfire	1	1970	2	1970, 1991
Totals	**32**	–	**29**	**–**

Source: Cal OES, FEMA

Alameda County Disasters since 2016/2017/2022 Plans

- 2017 Floods (three federal and two state)
- 2020 Pandemic (two federal and two state)
- 2023 Floods (three federal)

EOC Activations

In addition to the disaster declarations listed above, there are times where disasters occur that do not rise to the level of requiring a state or federal disaster declaration. The jurisdictions were asked when their emergency operations centers (EOC) were activated due to hazard events. This is provided below:

City of Fremont

Since 2016, the EOC has been activated for the following events:

- 2022-23 Winter Storms (DR-4683) – at Level 2 (Partial EOC Activation): January 5 and 9, 2023

- 2022-23 Winter Storms (DR-4683 & DR-4699) – at Level 3 (Monitoring): December 30, 22 – March 29, 2023 (extending beyond the FEMA designated Incident Periods)
- 2020 SCU Lightning Complex Fires – the EOC was not activated, most interagency coordination took place at the CAL FIRE Command Post.

City of Newark

The City has activated its EOC since the 2017 LHMP. The EOC has been activated for the following:

- January 4, 2023 – Level 2 (winter storm)
- March 17, 2020 – Level 2 (COVID-19 response)

Union City

The City has activated its EOC since the 2017 LHMP. The EOC has been activated for the following:

- March 17, 2020 – Level 2 (COVID-19 response)
- January 4, 2023 – Level 2 (Winter storm)
- March 9, 2023 – Level 2 (Winter storm)

Alameda County Water District

The District has not activated the EOC since the 2022 LHMP, but activations between 2017 and 2022 include:

- August 2020 – EOC had been activated for Covid-19 and was additionally kept open during the SCU Lightning Complex fires.

Union Sanitary District

The District has activated its EOC since the 2017 LHMP. The EOC has been activated for the following:

- USD activated its EOC in April of 2020 at a monitoring level in response to COVID19 Pandemic.

4.2 Tri-City Planning Area Assets Inventory and Growth and Development Trends

As a starting point for analyzing the Tri-City Planning Area's vulnerability to identified hazards, a variety of data was used to define a baseline against which all disaster impacts could be compared. If a catastrophic disaster was to occur in the Tri-City Planning Area, this section describes significant lands, assets, and other resources at risk. This section is broken into two parts:

- **Asset Inventory** – The assets inventory identifies the Tri-City Planning Area's total assets, including the people and populations: structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. This data is not hazard specific, but is representative of total assets within the Tri-City Planning Area, potentially at risk to identified hazards as discussed in Section 4.3 Hazard Profiles and Vulnerability Assessment.

- **Growth and Development Trends** – A discussion of growth and development trends in the Tri-City Planning Area, both current and future, is presented.

Data Sources

- 2023 Alameda County Assessor's data/Parcel data
- ACWD
- Agency for Toxic Substances and Disease Registry
- Alameda County
- Cal DWR Disadvantaged Communities
- CalAtlas
- CalEPA
- California Department of Finance
- California Department of Fish and Wildlife
- California Department of Parks and Recreation Office of Historic Preservation
- California Department of Water Resources (CA DWR) Special Populations and Disadvantaged Community Mapping
- California Environmental Protection Agency (Cal EPA) Disadvantaged Communities
- California Environmental Quality Act
- California Natural Diversity Database
- CDC Social Vulnerability Index
- Center for Disease Control (CDC) Social Vulnerability Index
- City of Fremont GIS
- City of Fremont GIS
- FEMA Community Disaster Resilience Zones
- Geospatial Research, Analysis & Services Program
- Hazus 6.0
- Local Input
- National Environmental Policy Act
- Office of Environmental Health Hazard Assessment
- State of California Department of Conservation
- Community Disaster Resilience Zones Act
- US Census Bureau
- USD

4.2.1. Assets Inventory

If a catastrophic disaster was to occur in the Tri-City Planning Area, this section describes populations, structures, critical facilities and infrastructure, and other key assets and resources at risk that comprise the existing built environment. Assets inventoried in this baseline assessment include:

- People and Populations
- Structures
- Critical Facilities and Infrastructure, and Community Lifelines
- Natural, Historic, and Cultural Resources
- Economic Assets and Community Activities of Value

Populations

Life safety is a priority issue for hazard mitigation planning. The people that work and recreate in the Tri-City Planning Area, and those that live and work in surrounding communities are also potentially at risk during a natural hazard event. Populations potentially at risk are described in the Table 4-7.

Table 4-7 Tri-City Planning Area – Populations

Jurisdiction	Population
City of Fremont	229,467
City of Newark	47,459
City of Union City	66,754
Alameda County Water District (Service Territory)	357,000
Union Sanitary District (Service Territory)	343,680

Source: Cal DOF E-1, ACWD, USD

Vulnerable and Underserved Populations

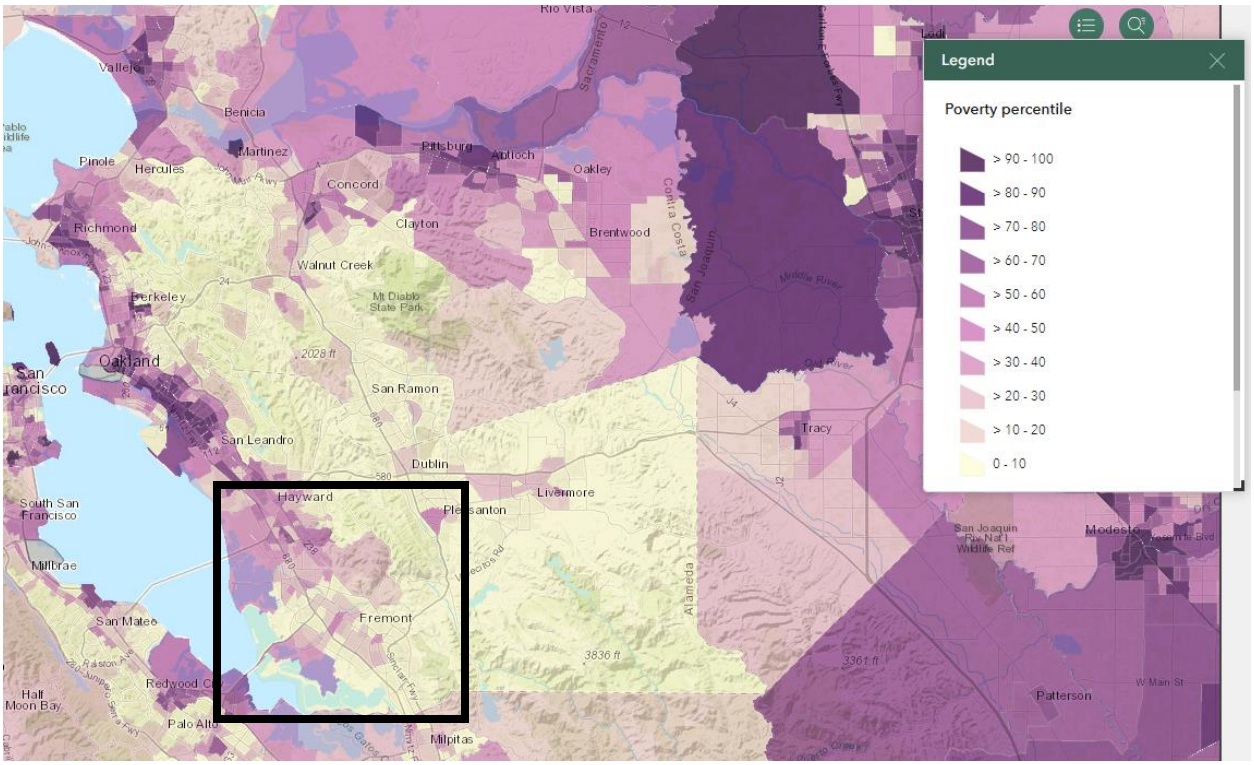
Vulnerable populations are those who may need additional help or accommodation during a hazard event. It should be noted that this is based on the vulnerable or underserved populations of the Tri-City Planning Area. The vulnerable and underserved populations discussion is based on the following five sources:

- California Environmental Protection Agency (Cal EPA) Disadvantaged Communities
- Center for Disease Control (CDC) Social Vulnerability Index
- California Department of Water Resources (CA DWR) Special Populations and Disadvantaged Community Mapping
- FEMA Community Disaster Resilience Zones
- Local Input

Cal EPA Disadvantaged Communities

Disadvantaged communities are defined by CalEPA as the top 25 percent of communities experiencing disproportionate amounts of pollution, environmental degradation, and socioeconomic and public health conditions according to the Office of Environmental Health Hazard Assessment's CalEnviroScreen tool. CalEPA is responsible for identifying disadvantaged communities for the purposes of the Cap-and-Trade funding program. This uses the CalEnviroScreen 4.0 Tool. Maps showing these areas in the Planning Area are shown on Figure 4-1.

Figure 4-1 Tri-City Planning Area – Cal EPA Disadvantaged Communities



Source: Cal EPA, map retrieved 4/26/2023

CDC Social Vulnerability Index

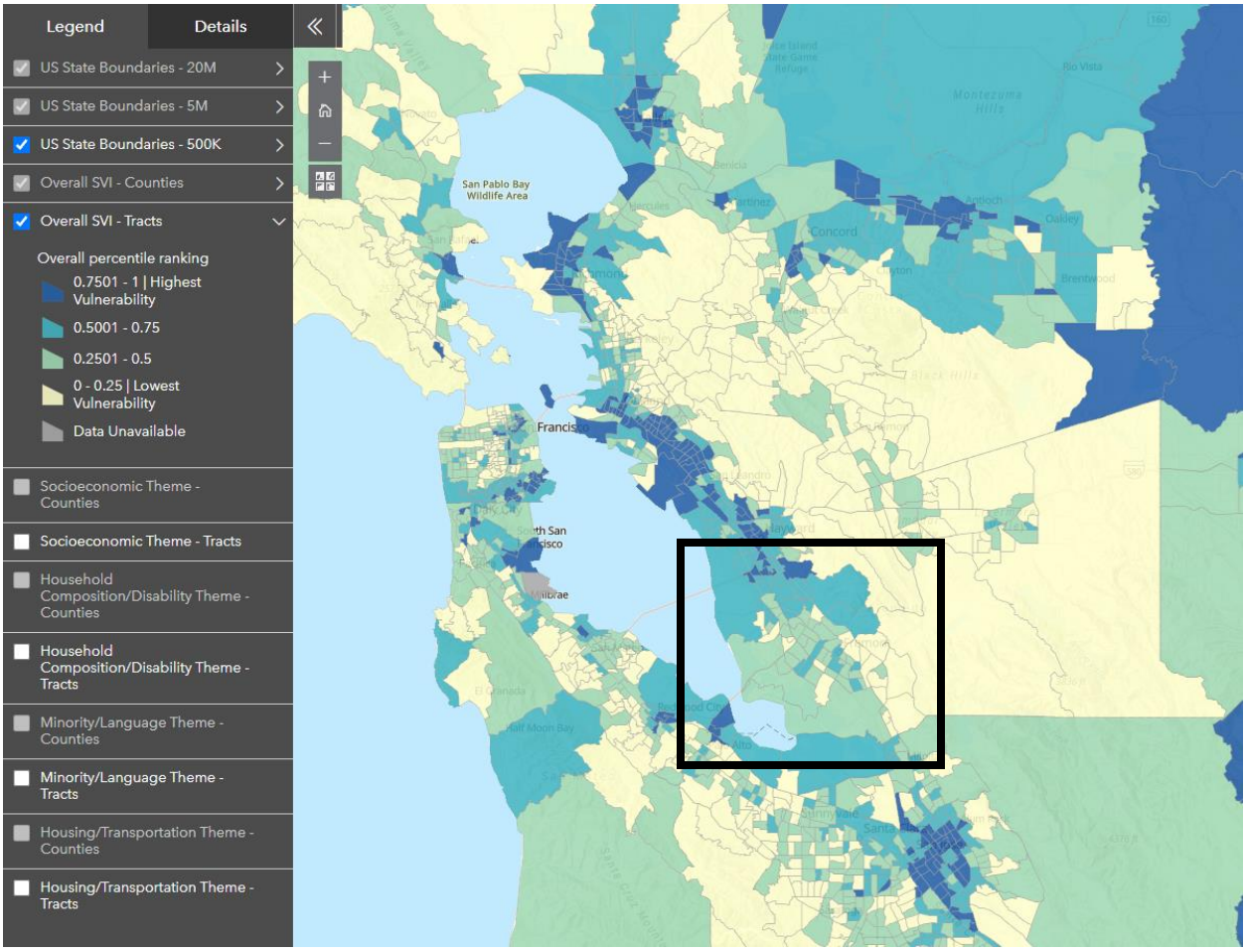
Every community must prepare for and respond to hazardous events, whether a natural disaster like a tornado or disease outbreak, or a human-made event such as a harmful chemical spill. A number of factors, including poverty, lack of access to transportation, and crowded housing may weaken a community's ability to prevent human suffering and financial loss in a disaster. These factors are known as social vulnerability.

Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. CDC Social Vulnerability Index (CDC SVI) uses 15 U.S. census variables to help local officials identify communities that may need support before, during, or after disasters.

The Agency for Toxic Substances and Disease Registry's (ATSDR) Geospatial Research, Analysis & Services Program (GRASP) created databases to help emergency response planners and public health officials identify and map communities that will most likely need support before, during, and after a hazardous event. CDC SVI uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. The CDC SVI ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes. Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. Maps of the four themes are shown in the figure below. The overall SVI map is shown in Figure 4-2; the socioeconomic SVI for the Planning Area is shown in Figure 4-3; the

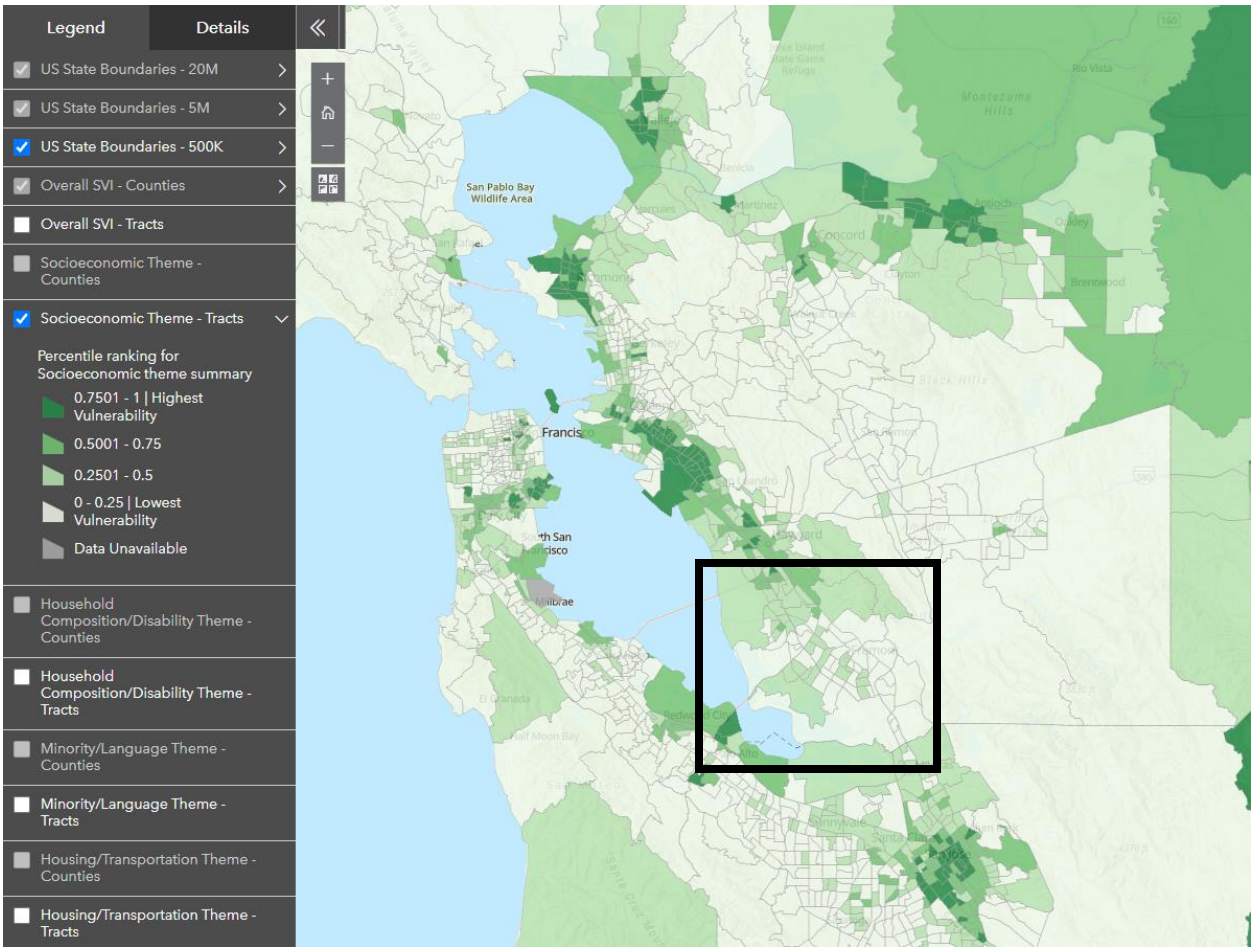
household composition SVI is shown in Figure 4-4; the minority and language SVI is shown in Figure 4-5; and the housing and transportation SVI is shown in Figure 4-6.

Figure 4-2 Tri-City Planning Area – Overall Social Vulnerability



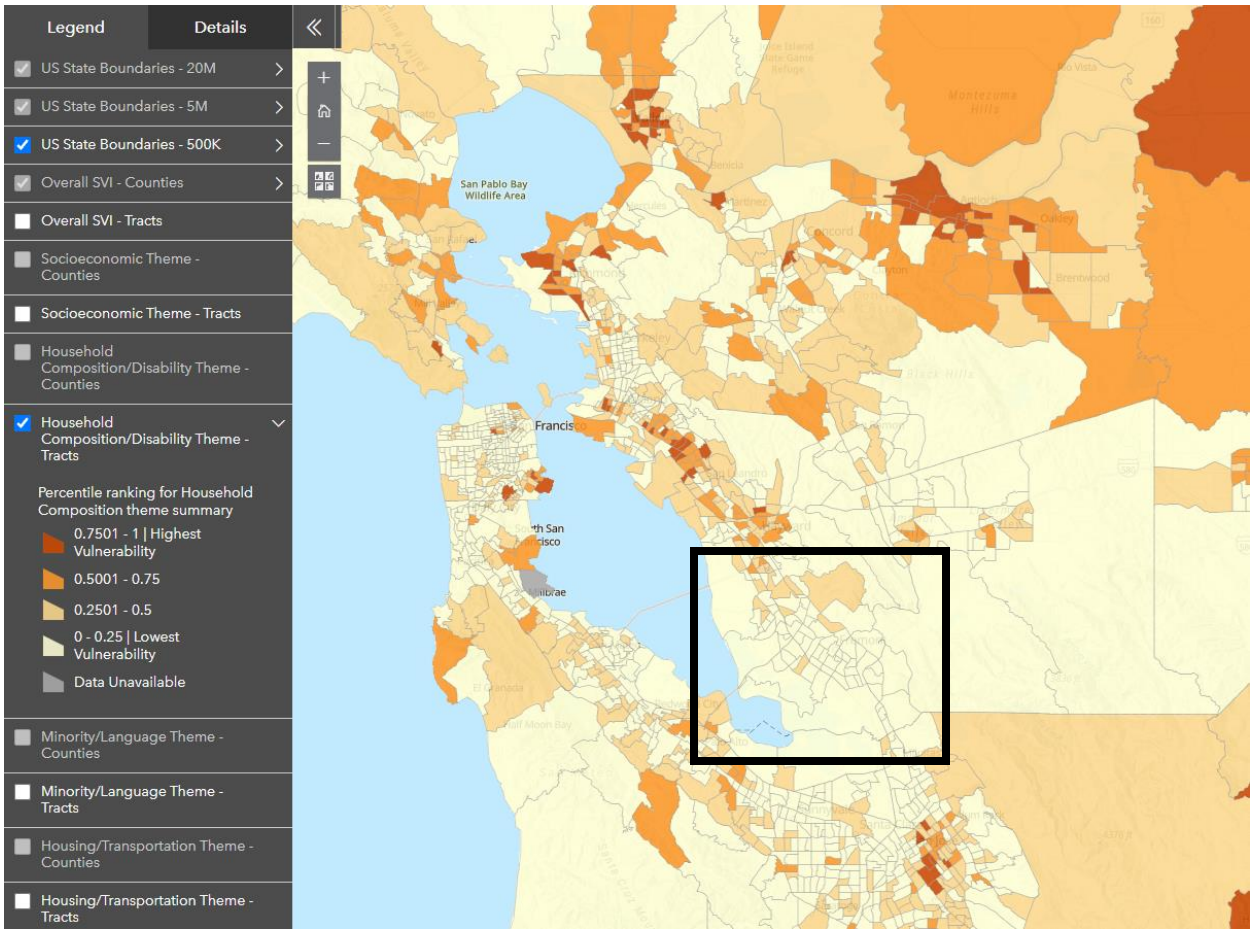
Source: CDC Social Vulnerability Index – map retrieved 4/26/2023

Figure 4-3 Tri-City Planning Area – Socioeconomic Status Vulnerability



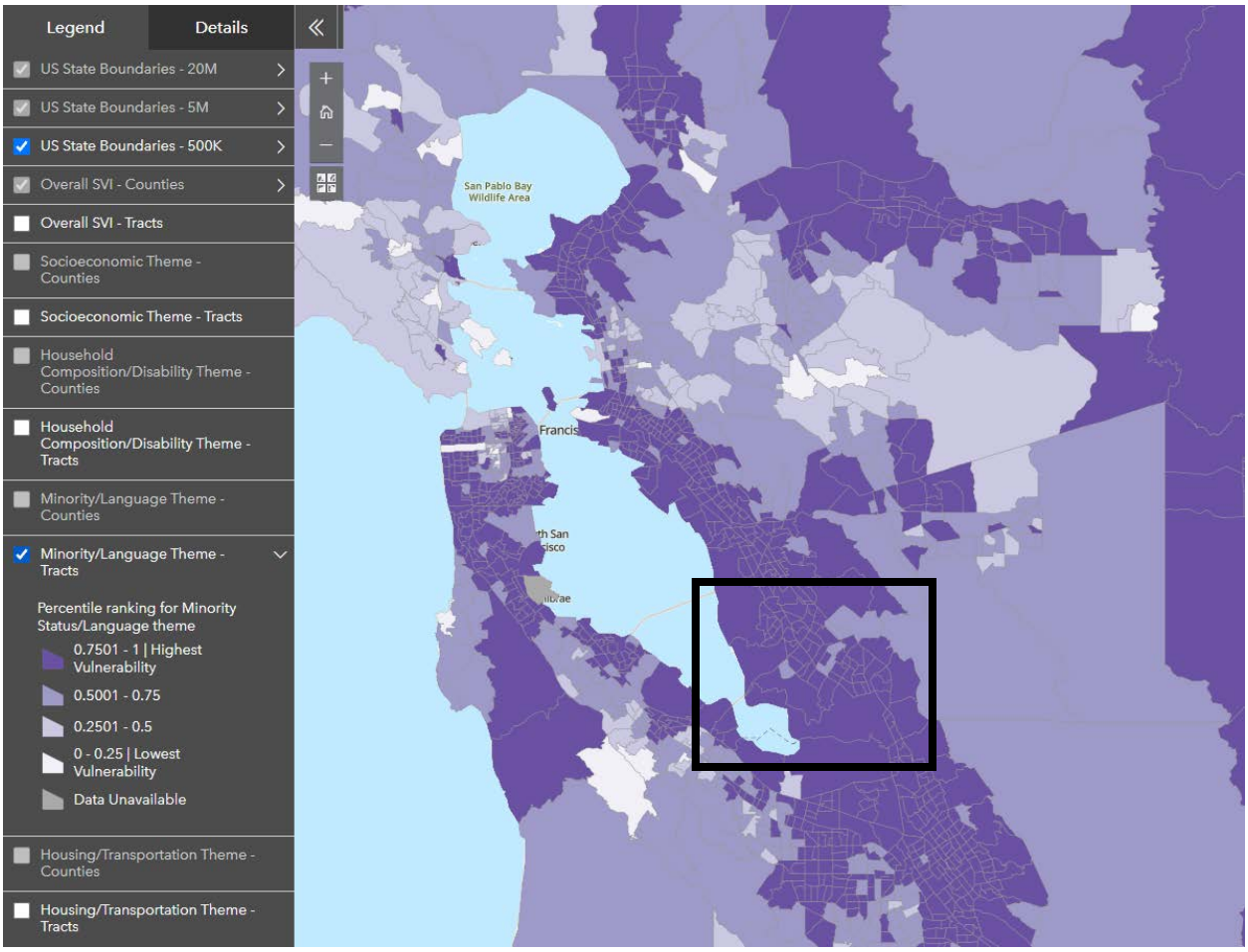
Source: CDC Social Vulnerability Index – map retrieved 4/26/2023

Figure 4-4 Tri-City Planning Area – Household Composition and Disabilities Social Vulnerability



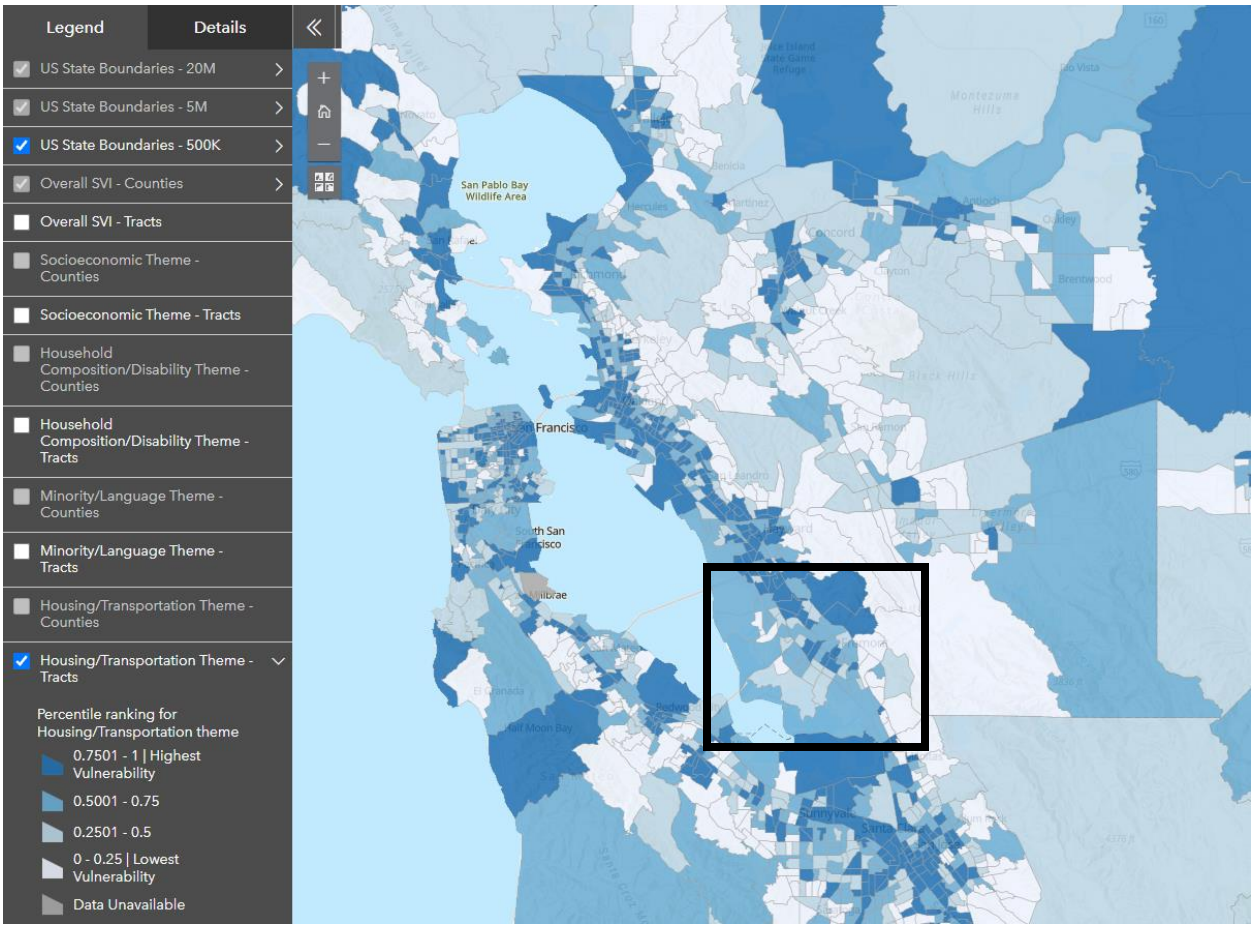
Source: CDC Social Vulnerability Index – map retrieved 4/26/2023

Figure 4-5 Tri-City Planning Area – Minority/Language Social Vulnerability



Source: CDC Social Vulnerability Index – map retrieved 4/26/2023

Figure 4-6 Tri-City Planning Area – Housing/Transportation Social Vulnerability

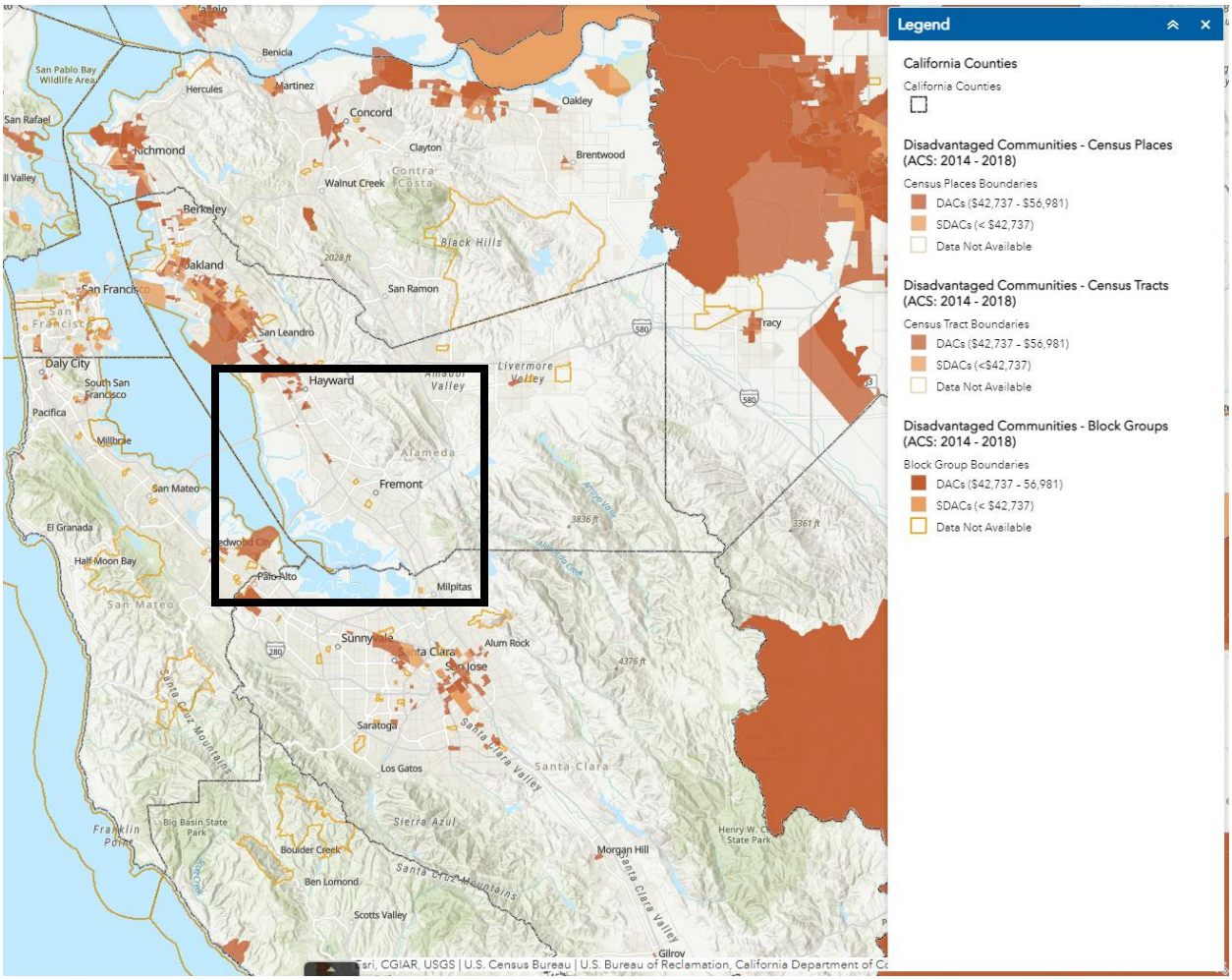


Source: CDC Social Vulnerability Index – map retrieved 4/26/2023

California DWR Disadvantaged Community Mapping Tool

The State of California's Proposition 1 Disadvantaged Community (DAC) Involvement Program is designated to ensure the involvement of DACs as well as Economically Distressed Areas and Underrepresented Communities, which DWR collectively refers to as DACs. The Cal DWR definition for a Disadvantaged Community is a community with an annual median household income (MHI) that is less than 80% of the Statewide annual MHI (PRC Section 75005(g)), and those census geographies with an annual MHI less than 60% of the Statewide annual MHI are considered "Severely Disadvantaged Communities". Those areas in the Planning Area considered disadvantaged are shown in Figure 4-7.

Figure 4-7 Tri-City Planning Area – Disadvantaged Areas

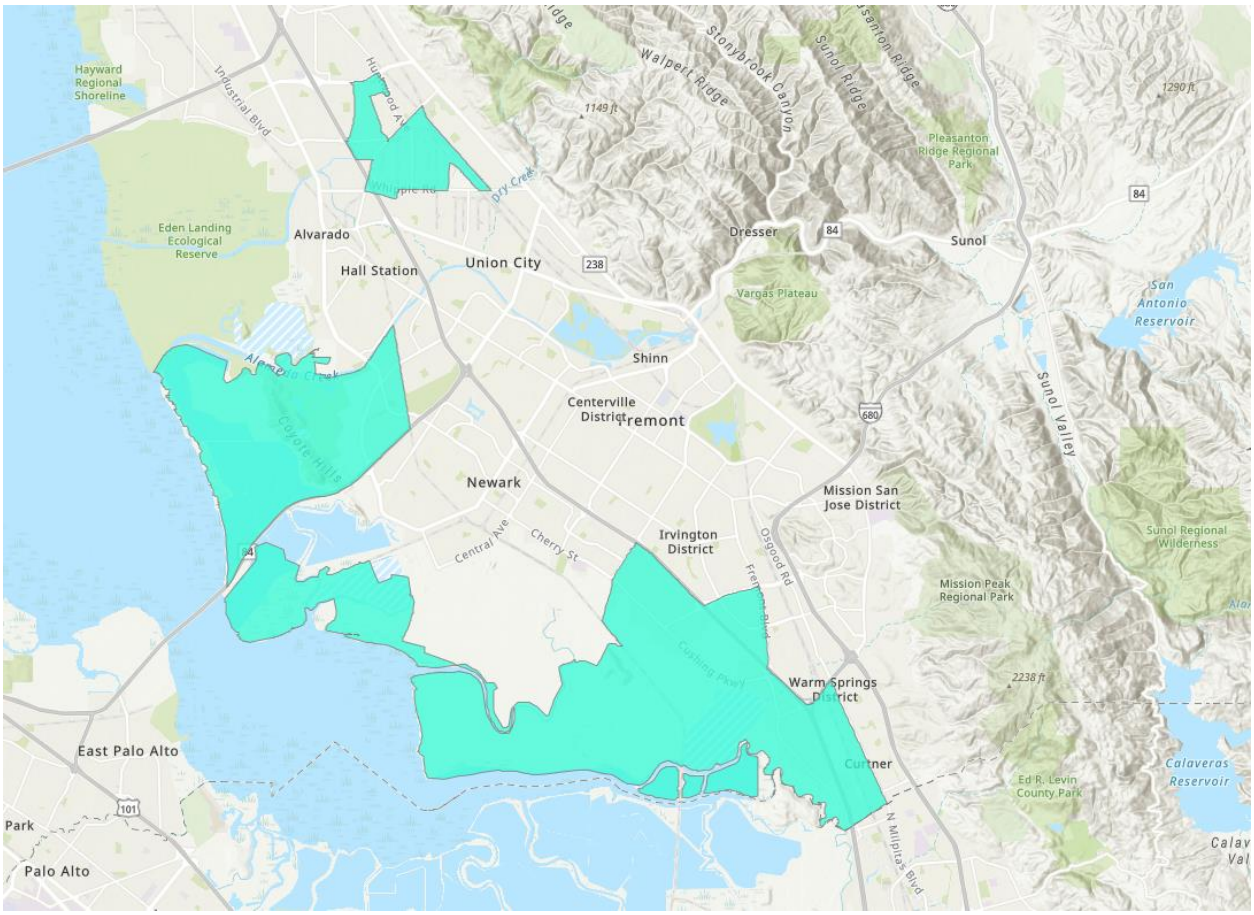


Source: Cal DWR DAC Mapping Tool – retrieved 4/26/2023

FEMA Community Disaster Resilience Zones

Community Disaster Resilience Zones aim to build and strengthen community resilience across the nation by driving federal, public, and private resources to the most at-risk and in-need communities. The Community Disaster Resilience Zones Act uses FEMA's National Risk Index to identify the most at-risk and in-need communities to identify resilience zones. Designated zones will be prioritized for targeted federal support, such as increased cost-share for resilience and mitigation projects, lessening the financial burden on communities to perform resilience-related activities. On September 6, 2023, FEMA announced the initial 483 designations in all 50 states and the District of Columbia. Figure 4-8 shows these zones in teal green.

Figure 4-8 Tri-City Planning Area – FEMA Community Disaster Resilience Zones



Source: FEMA. Map retrieved 10/4/2023.

Local Input

A stakeholder attended Planning Committee meetings that represented an organization that coordinates lifelong services and support for individuals with developmental disabilities and their families in Alameda and Contra Costa Counties. This organization serves all ages and income groups, covering all the diagnoses and severities therein that constitute developmental disability in California, including but not limited to intellectual disability, autism spectrum disorder, cerebral palsy and traumatic brain injury sustained before age 18. The organization noted that clients have a wide range of needs and functionalities: On one end of the spectrum, many high functioning folks may need minimal assistance from independent living service providers; others may have severe medical needs requiring specialized care or living situations. Currently (as of late 2023), in the catchment of Alameda and Contra Costa Counties, the organization serves a total of 24,564 clients, partners with 932 vendors, and employs 469 staff. In the Tri-Cities operational area of Fremont, Union City and Newark this organization has:

- 2,710 clients residing
- 131 vendors operating
- 18 staff residing

While this is not wholly representative of the area, it does give an indication of the available resources and additional needs in this area during times of emergencies or evacuations.

Structures

Structures include buildings used for a variety of purposes and reflect the Tri-City Planning Area's existing built environment. Depending on the nature and extent of a hazard event or disaster, all structures may be exposed to some level of risk, where certain buildings or concentrations of buildings are more vulnerable. This section captures the structures, and associated land and contents values, which comprise the Tri-City Planning Area's existing built environment.

Parcel and Structure Inventory and Assessed Values

An inventory of structures located within the Tri-City Planning Area was developed utilizing data from the Alameda County Assessor's Office is based on the 2023 Assessor's data/Parcel layer provided by the City of Fremont GIS. This data provided by Fremont represents best available data.

While conducting an inventory of structure assets within the Tri-City Planning Area is a key element of this asset inventory, understanding the total assessed value of structures and built environment is a starting point to understanding the overall value of identified assets in the Tri-City Planning Area. When the total assessed values are combined with potential values associated with other community assets such as area populations, public and private critical infrastructure, historic and cultural resources, and natural resources, and other identified assets, the big picture emerges as to what is potentially at risk and vulnerable to the damaging effects of natural hazards within the Tri-City Planning Area.

Methodology

Data from the Alameda County Assessor's Office is based on the 2023 Assessor's data provided by the City of Fremont GIS (including the associated parcel layer) as the basis for the inventory of assessed values for both improved and unimproved parcels within the Tri-City Planning Area. This data provides the land and improved values assessed for each parcel, along with key information such as property use. Other GIS data, such as jurisdictional boundaries, roads, streams, and area features, was also obtained from Alameda County and CalAtlas to support mapping and analysis of values at risk.

Data Limitations & Notations

Although based on best available data, the resulting information should only be used as an initial guide to overall values in the Tri-City Planning Area. In the event of a disaster, structures and other infrastructure improvements are at the greatest risk of damage. Depending on the type of hazard and resulting damages, the land itself may not suffer a significant loss. For that reason, the values of structures and other improvements are of greatest concern. Also, it is critical to note a specific limitation to the assessed values data within the Tri-City Planning Area, created by Proposition 13. Instead of adjusting property values annually, no adjustments are made until a property transfer occurs. As a result, overall property value information is likely significantly low and does not reflect current market, replacement, or true potential loss values for properties within the Tri-City Planning Area.

Property Use Categories

The Tri-City Planning Area used the Alameda County property use code which provides detailed descriptive information about how each property is generally used, such as residential, commercial, or industrial. The property use codes were refined and categorized into the following land use categories and linked back to the Assessor data. The final property use categories for the Tri-City Planning Area include:

- Agricultural
- Commercial
- Government/ Institutional
- Industrial
- Recreational
- Residential
- Unknown
- Utilities
- Vacant

Once property uses were grouped into categories, the number of total and improved parcels and land and improved values were inventoried for the Tri-City Planning Area by property use.

Estimated Content Replacement Values

The Tri-City Planning Area assigned property use categories were used to develop estimated content replacement values (CRVs) that are potentially at loss from hazards. FEMA's standard CRV factors, derived from Hazus, were utilized to develop more accurate loss estimates for the total assets inventory and for all mapped hazard analyses. FEMA's CRV factors estimate content values as a percent of improved structure value by property use. Table 4-8 shows the breakdown of the different property uses in the Tri-City Planning Area and their estimated CRV factors.

Table 4-8 Tri-City Planning Area – Content Replacement Factors by Land Use

Tri-City Planning Area Property Use Categories	Hazus Property Use Categories	Hazus Content Replacement Values
Agricultural	Agricultural	100%
Commercial	Commercial	100%
Government/ Institutional	Government / Institutional	100%
Industrial	Industrial	150%
Recreational	Recreational	100%
Residential	Residential	50%
Unknown	Land Use code not provided	0%
Utilities	Utilities	100%
Vacant	Vacant	0%

Source: Hazus 6.0

Parcel and Structure Asset Inventory with Values Results

Table 4-9 shows the total number of parcels with land and improved structure values in the Tri-City Planning Area, and also includes estimated CRVs (using CRV multipliers from Table 4-8). Inclusion of contents values are important as potential losses to the Tri-City Planning Area include the value of land, structures, and their contents. Table 4-10 breaks down Table 4-9, and shows structures and values by property use type.

Table 4-9 Tri-City Planning Area – Total Parcels (and Structures) by City

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	84,266	78,131	$22,712,502,142	$45,456,642,623	$28,195,564,652	$96,364,709,417
Newark	17,158	15,386	$4,189,904,213	$8,224,263,130	$5,492,729,099	$17,906,896,442
Union City	18,602	17,489	$3,996,792,589	$8,661,754,456	$5,431,407,191	$18,089,954,236

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-10 Tri-City Planning Area – Parcels (and Structures) by City and Property Use

Jurisdiction/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
City of Fremont						
Agricultural	91	24	$39,564,089	$12,931,362	$12,931,362	$65,426,813
Commercial	2,062	1,340	$2,520,330,754	$4,584,208,161	$4,584,208,161	$11,688,747,076
Government/ Institutional	1,857	123	$120,781,680	$304,124,550	$304,124,550	$729,030,780
Industrial	719	690	$1,890,435,012	$3,165,127,004	$4,747,690,484	$9,803,252,500
Recreational	19	19	$41,635,310	$68,889,487	$68,889,487	$179,414,284
Residential	78,001	75,760	$17,362,070,930	$36,955,440,288	$18,477,720,608	$72,795,231,826
Unknown	40	2	$18,802,053	$200,468	$0	$19,002,521
Utilities	215	0	$0	$0	$0	$0
Vacant	1,262	173	$718,882,314	$365,721,303	$0	$1,084,603,617
Fremont Total	**84,266**	**78,131**	**$22,712,502,142**	**$45,456,642,623**	**$28,195,564,652**	**$96,364,709,417**
Newark						
Agricultural	28	1	$2,768,344	$3,339,480	$3,339,480	$9,447,304
Commercial	419	317	$581,449,066	$1,048,313,365	$1,048,313,365	$2,678,075,796
Government/ Institutional	343	17	$13,310,796	$15,447,837	$15,447,837	$44,206,470
Industrial	109	96	$393,851,894	$854,367,320	$1,281,550,982	$2,529,770,196
Recreational	3	3	$1,480,029	$1,214,920	$1,214,920	$3,909,869

Jurisdiction/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Residential	15,596	14,928	$2,936,444,332	$6,285,725,093	$3,142,862,515	$12,365,031,940
Unknown	21	1	$24,055,983	$42,970	$0	$24,098,953
Utilities	87	0	$0	$0	$0	$0
Vacant	552	23	$236,543,769	$15,812,145	$0	$252,355,914
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**
Union City						
Agricultural	34	2	$6,794,825	$820,905	$820,905	$8,436,635
Commercial	519	376	$675,368,003	$1,418,642,264	$1,418,642,264	$3,512,652,531
Government/ Institutional	492	26	$9,738,397	$35,289,834	$35,289,834	$80,318,065
Industrial	115	102	$219,186,383	$374,055,166	$561,082,747	$1,154,324,296
Recreational	0	0	$0	$0	$0	$0
Residential	17,162	16,971	$2,943,598,549	$6,831,142,968	$3,415,571,441	$13,190,312,958
Unknown	21	0	$28,325,088	$0	$0	$28,325,088
Utilities	108	0	$0	$0	$0	$0
Vacant	151	12	$113,781,344	$1,803,319	$0	$115,584,663
Union City Total	**18,602**	**17,489**	**$3,996,792,589**	**$8,661,754,456**	**$5,431,407,191**	**$18,089,954,236**
Grand Total	**120,026**	**111,006**	**$30,899,198,944**	**$62,342,660,209**	**$39,119,700,942**	**$132,361,560,095**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

In addition to the tables above broken out by city, an analysis was done on the Alameda County Water District and Union Sanitary District. Each District has a discrete Service Territory. While the Districts do not own or control these parcels, the tables below represent the values served by each District.

Table 4-11 shows the total number of parcels with land and improved structure values in the Tri-City Planning Area Special District Service Territories, and also includes estimated CRVs (using CRV multipliers from Table 4-8). Inclusion of contents values are important as potential losses to the Tri-City Planning Area include the value of land, structures, and their contents. Table 4-12 breaks down Table 4-11, and shows structures and values by property use type.

Table 4-11 Tri-City Planning Area Special Districts – Total Parcels (and Structures) by District Service Territory

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Alameda County Water District	119,877	111,009	$30,901,173,264	$62,418,322,230	$39,244,143,037	$132,563,638,531
Union Sanitary District	119,360	110,959	$30,745,200,592	$62,302,924,296	$39,102,836,096	$132,150,960,984

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-12 Tri-City Planning Area Special Districts – Parcels (and Structures) by District Service Territory and Property Use

Jurisdiction/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Alameda County Water District						
Agricultural	53	7	$16,442,387	$7,438,417	$7,438,417	$31,319,221
Commercial	3,056	2,081	$3,828,036,456	$7,120,221,091	$7,120,221,091	$18,068,478,638
Government/ Institutional	2,661	153	$142,695,179	$332,087,624	$332,087,624	$806,870,427
Industrial	962	906	$2,538,777,927	$4,461,824,810	$6,692,737,190	$13,693,339,927
Recreational	22	22	$43,115,339	$70,104,407	$70,104,407	$183,324,153
Residential	110,730	107,631	$23,218,640,593	$50,043,107,838	$25,021,554,308	$98,283,302,739
Unknown	74	3	$56,368,859	$243,438	$0	$56,612,297
Utilities	401	0	$0	$0	$0	$0
Vacant	1,918	206	$1,057,096,524	$383,294,605	$0	$1,440,391,129
Alameda County Water District Total	**119,877**	**111,009**	**$30,901,173,264**	**$62,418,322,230**	**$39,244,143,037**	**$132,563,638,531**
Union Sanitary District						
Agricultural	29	7	$8,869,831	$4,301,506	$4,301,506	$17,472,843
Commercial	3,022	2,062	$3,791,992,287	$7,084,172,903	$7,084,172,903	$17,960,338,093
Government/ Institutional	2,403	163	$143,596,513	$343,413,315	$343,413,315	$830,423,143
Industrial	939	888	$2,494,986,453	$4,392,125,050	$6,588,187,553	$13,475,299,056
Recreational	22	22	$43,115,339	$70,104,407	$70,104,407	$183,324,153
Residential	110,644	107,609	$23,191,476,225	$50,025,312,042	$25,012,656,412	$98,229,444,679
Unknown	74	2	$47,127,141	$200,468	$0	$47,327,609

Jurisdiction/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Utilities	393	0	$0	$0	$0	$0
Vacant	1,834	206	$1,024,036,803	$383,294,605	$0	$1,407,331,408
Union Sanitary District Total	**119,360**	**110,959**	**$30,745,200,592**	**$62,302,924,296**	**$39,102,836,096**	**$132,150,960,984**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure and Community Lifelines

Beyond just structures, it is important to identify the critical facilities and infrastructure, and community lifelines that are critical for life safety and the economy. This is done for the Tri-City Planning Area in the below sections.

Critical Facilities and Infrastructure

Critical facilities commonly include all public and private facilities that a community considers essential for the delivery of vital services and for the protection of the community. These usually include emergency response facilities (fire stations, police stations, rescue squads, and emergency operation centers [EOCs]), custodial facilities (jails and other detention centers, long-term care facilities, hospitals, and other health care facilities), schools, emergency shelters, utilities (water supply, wastewater treatment facilities, and power), communications facilities, and any other assets determined by the community to be of critical importance for the protection of the health and safety of the population.

For purposes of this LHMP two definitions were used, one for the City of Fremont and one for the other four jurisdictions. Those definitions, as well as maps and tables showing locations of critical facilities, can be found in each participating jurisdiction's respective annex to this LHMP Update.

Community Lifelines

Assessing the vulnerability of the Tri-City Planning Area to natural hazards and disasters also involves reviewing and inventorying the community lifelines in place that could be affected. It is important to include these items in hazard discussions as the continuous operation of critical government and business functions is essential to human health and safety and/or economic security. Information on community lifelines include:

- Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function.
- FEMA has developed a construct for objectives-based response that prioritizes the rapid stabilization of Community Lifelines after a disaster.
- The integrated network of assets, services, and capabilities that provide lifeline services are used day-to-day to support the recurring needs of the community and enable all other aspects of society to function.

- When disrupted, decisive intervention (e.g., rapid re-establishment or employment of contingency response solutions) is required to stabilize the incident.

For this Plan, Community Lifelines includes the following (as defined by FEMA):

- **Safety and Security** – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Hydration, Shelter** – Food, Water, Shelter, Agriculture
- **Health and Medical –** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy –** Power Grid, Fuel
- **Communications** – Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation** – Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous** Material **–** Facilities, HAZMAT, Pollutants, Contaminants
- **Water Systems** – Potable Water Infrastructure, Wastewater Management

In the Tri-City Planning Area, these community lifelines are all in place and functional as part of regular government operations. It should also be noted that these community lifelines collectively include many of the individual components of other community assets inventoried for this LHMP including structures and critical facilities and infrastructure.

Specific information on these community lifelines in the Tri-City Planning Area and how they may be affected by a hazard event or disaster are discussed in more detail in each hazard section below as well as in each jurisdictional annex to this Base Plan.

Natural, Historical, and Cultural Resources

Assessing the vulnerability of the Tri-City Planning Area to disaster also involves inventorying the natural, historic, and cultural assets of the area. This step is important for the following reasons:

- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a disaster, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, such as wetlands and riparian habitat, which help absorb and attenuate floodwaters.

Natural Resources

The Tri-City Planning Area contains a variety of natural resources. The sections below discuss key natural resources that fall within the Tri-City Planning Area that are potentially at risk to a hazard event. More information on natural resources specific to each jurisdiction can be found in their respective annexes to this LHMP Update.

Wetlands and their Natural and Beneficial Functions

Wetlands are habitats in which soils are intermittently or permanently saturated or inundated. Wetland habitats vary from rivers to seasonal ponding of alkaline flats and include swamps, bogs, marshes, vernal pools, and riparian woodlands. Wetlands are considered to be waters of the United States and are subject to the jurisdiction of the U.S. Army Corps of Engineers as well as the California Department of Fish and Wildlife (CDFW). Where the waters provide habitat for federally endangered species, the U.S. Fish and Wildlife Service may also have authority.

Wetlands are a valuable natural resource for communities providing beneficial impact to water quality, wildlife protection, recreation, and education, and play an important role in hazard mitigation. Wetlands provide drought relief in water-scarce areas where the relationship between water storage and streamflow regulation is vital, and reduce flood peaks and slowly release floodwaters to downstream areas. When surface runoff is dampened, the erosive powers of the water are greatly diminished. Furthermore, the reduction in the velocity of inflowing water as it passes through a wetland helps remove sediment being transported by the water.

Wetlands are often found in floodplains and depressional areas of a watershed. Many wetlands receive and store floodwaters, thus slowing and reducing downstream flow. Wetlands perform a variety of ecosystem functions including food web support, habitat for insects and other invertebrates, fish and wildlife habitat, filtering of waterborne and dry-deposited anthropogenic pollutants, carbon storage, water flow regulation (e.g., flood abatement), groundwater recharge, and other human and economic benefits.

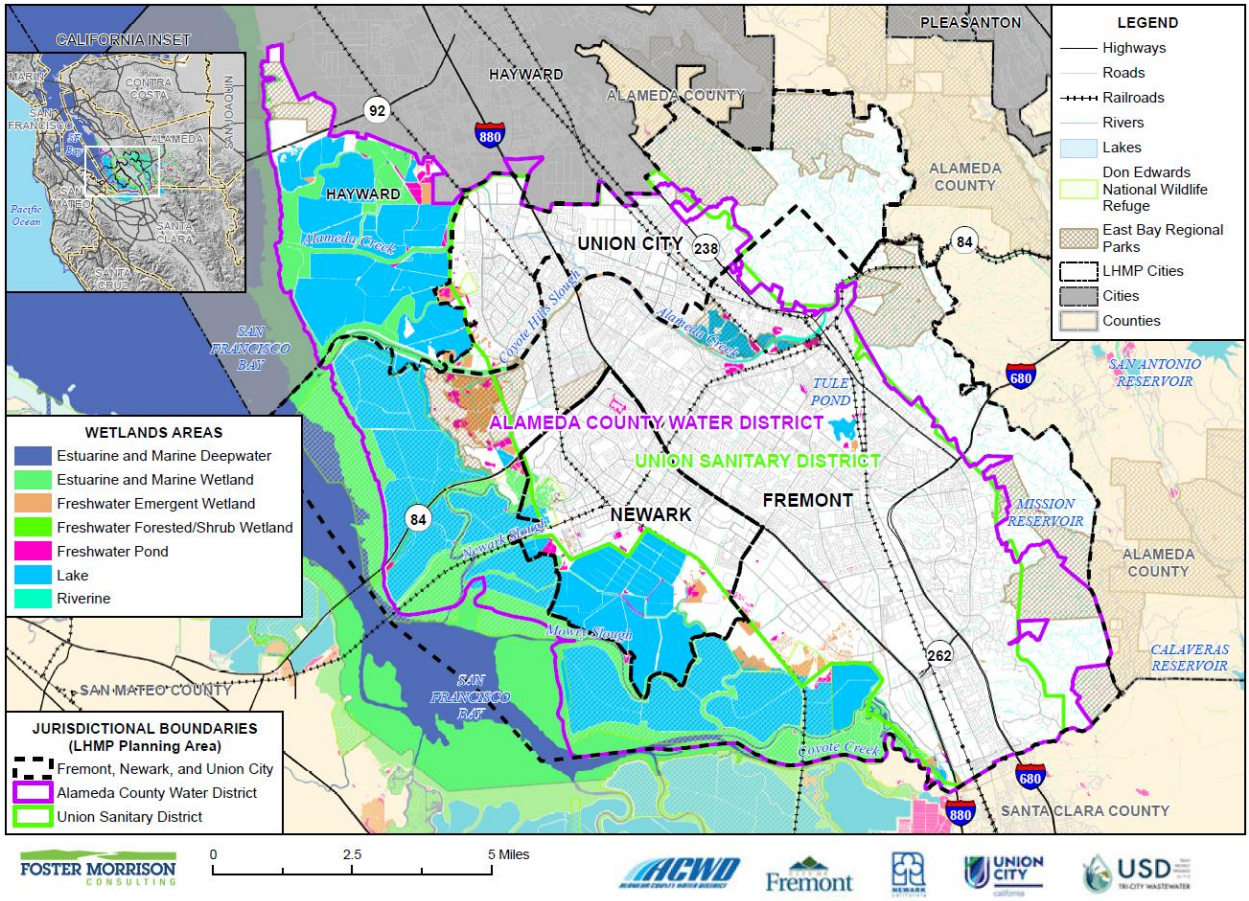
Wetlands, and other riparian and sensitive areas, provide habitat for insects and other invertebrates that are critical food sources to a variety of wildlife species, particularly birds. There are species that depend on these areas during all parts of their lifecycle for food, overwintering, and reproductive habitat. Other species use wetlands and riparian areas for one or two specific functions or parts of the lifecycle, most commonly for food resources. In addition, these areas produce substantial plant growth that serves as a food source to herbivores (wild and domesticated) and a secondary food source to carnivores.

Wetlands slow the flow of water through the vegetation and soil, and pollutants are often held in the soil. In addition, because the water is slowed, sediments tend to fall out, thus improving water quality and reducing turbidity downstream.

These natural floodplain functions associated with the natural or relatively undisturbed floodplain that moderates flooding, such as wetland areas, are critical for maintaining water quality, recharging groundwater, reducing erosion, redistributing sand and sediment, and providing fish and wildlife habitat. Preserving and protecting these areas and associated functions are a vital component of sound floodplain management practices for the Planning Area.

Wetlands in the Tri-City Planning Area are shown in Figure 4-9. Tables of wetlands are shown in the respective jurisdictional annexes to this Plan Update.

Figure 4-9 Tri-City Planning Area – Wetland Areas



Data Source: U.S. Fish and Wildlife Service National Wetlands Inventory October 2022, Alameda County GIS, Cal-Atlas; Map Date: 7/21/2023.

Critical Species

To further understand natural resources that may be particularly vulnerable to a hazard event, as well as those that need consideration when implementing mitigation activities, it is important to identify at-risk species (i.e., endangered species) in the Tri-City Planning Area. An endangered species is any species of fish, plant life, or wildlife that is in danger of extinction throughout all or most of its range. A threatened species is a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. Both endangered and threatened species are protected by law and any future hazard mitigation projects are subject to these laws. Candidate species are plants and animals that have been proposed as endangered or threatened but are not currently listed. There are many federal endangered, threatened, or candidate species in or near the Planning Area. The California Natural Diversity Database was searched for listed species. The Tri-City Planning Area contained 237 species in Alameda County. These species are listed in Table 4-13. Additional specific information for the Planning Area is included in Appendix E.

Table 4-13 Tri-City Planning Area – Threatened and Endangered Species in Alameda County

Type	Number
Animals - Amphibians	3
Animals - Birds	54
Animals – Crustaceans	6
Animals - Fish	18
Animals - Insects	21
Animals - Mammals	17
Animals – Mollusks	3
Animals – Reptiles	7
Community – Terrestrial	12
Plants – Bryophytes	3
Plants – Vascular	93

Source: California Natural Diversity Database

Historical and Cultural Resources

To inventory these resources, information was collected from the California Department of Parks and Recreation Office of Historic Preservation (OHP).

OHP Historical Resources

The California OHP is responsible for the administration of federally and state mandated historic preservation programs to further the identification, evaluation, registration, and protection of California's irreplaceable archaeological and historical resources. OHP administers the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements.

- The **National Register of Historic Places** is the nation's official list of cultural resources worthy of preservation. The National Register is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources. Properties listed include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The National Register is administered by the National Park Service, which is part of the U.S. Department of the Interior.
- The **California Register of Historical Resources** program encourages public recognition and protection of resources of architectural, historical, archeological, and cultural significance and identifies historical resources for state and local planning purposes; determines eligibility for state historic preservation grant funding; and affords certain protections under the California Environmental Quality Act. The Register is the authoritative guide to the state's significant historical and archeological resources.
- **California Historical Landmarks** are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific

or technical, religious, experimental, or other value. Landmarks #770 and above are automatically listed in the California Register of Historical Resources.

- **California Points of Historical Interest** are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register.

Based on these sources, there are nine historic properties in the Tri-City Planning Area. This is shown in Table 4-14. More information on historic properties in each jurisdiction can be found in their respective annexes to this LHMP Update.

Table 4-14 Tri-City Planning Area – Historical Resources

Resource Name (Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed	City
Alvarado School (P504)				X	7/27/1977	Union City
California Nursery Co. Guest House (N73)	X				5/6/1971	Fremont
Leland Stanford Winery (642)		X			4/28/1958	Fremont
Mission San Jose (334)	X	X			8/8/1939	Fremont
Patterson, George Washington, Ranch--Ardenwood (N1405)	X				11/29/1985	Fremont
Site Of First County Courthouse (503)		X			7/31/1953	Union City
Site Of Nation's First Successful Beet Sugar Factory (768)		X			11/3/1961	Union City
Vallejo Flour Mill (46)		X			12/6/1932	Fremont
Washington Union High School (N975)	X				10/5/1981	Fremont

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/

It should be noted that these lists may not be complete, as they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by CEQA and NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

Economic Assets and Community Activities of Value

Assessing the vulnerability of the Tri-City Planning Area to natural hazards and disasters also involves inventorying the economic assets and community activities of value to the Tri-City Planning Area.

Economic Assets

After a disaster, economic resiliency is one of the major drivers of a speedy recovery. Each community has specific economic drivers. These include:

- Primary Economic Sectors
- Major employers
- Commercial Centers

More information on economic assets can be found in the respective jurisdictional annexes to this Base Plan.

Community Activities of Value

Inventorying economic assets in the Tri-City Planning Area and their vulnerability to natural hazards and disasters also involves inventorying activities that have value to the community. This includes activities that are important to a community, like long-standing traditions such as a festival or fair. Some areas rely on seasonal industries to sustain them throughout the year. Many of these activities provide economic benefits to the Planning Area. A hazard event that cancels or shortens these can affect a community's livelihood and can make disaster recovery more difficult or prolonged. This includes activities such as:

- Festivals and Fairs
- Sporting Events
- Tourism

More information on community activities of value assets can be found in the respective jurisdictional annexes to this Base Plan.

4.2.2. Growth and Development Trends

Growth and development trends in each jurisdiction in the Tri-City Planning area is discussed in each Tri-City jurisdiction's annex to this LHMP Update.

Development since 2016/2017/2022 LHMPs

Development since the 2016/2017/2022 LHMPs is discussed in each Tri-City jurisdiction's annex to this LHMP Update.

Future Development

Future development is discussed in each Tri-City jurisdiction's annex to this LHMP Update.

4.3 Hazard Profiles and Vulnerability Assessment

44 CFR §201.6(c)(2)(i): [The risk assessment shall include a] description of the…location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

44 CFR §201.6(c)(2)(ii): [The risk assessment shall include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community.

44 CFR §201.6(c)(2)(ii)(A): The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas.

44 CFR §201.6(c)(2)(ii)(B): [The plan should describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate.

44 CFR §201.6(c)(2)(ii)(C): [The plan should describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

The hazards identified in Section 4.1 Hazard Identification, are profiled individually in this section. The Hazard Profiles set the stage for the Vulnerability Assessment, where the vulnerability is quantified, as data allows, for each of the identified hazards.

Hazard Profiles Methodology

Each hazard is profiled in the following format:

- **Hazard/Problem Description**—This section gives a description of the hazard and associated issues followed by details on the hazard specific to the Tri-City Planning Area. Where known, this includes information on the hazard extent, location, seasonal patterns, speed of onset/duration, and magnitude and/or any secondary effects.
- **Past Occurrences**—This section contains information on historical incidents, including impacts where known. Hazard research, historical incident worksheets and other input from the Planning Committee were used to capture information on past occurrences.
- **Likelihood of Future Occurrence**—The frequency of past events is used in this section to gauge the likelihood of future occurrences. Where possible, frequency was calculated based on existing data. It was determined by dividing the number of events observed by the number of years on record and multiplying by 100. This gives the percent chance of the event happening in any given year (e.g., three droughts over a 30-year period equates to a 10 percent chance of a experiencing a drought in any given year). The likelihood of future occurrences is categorized into one of the following classifications:
  - ✓ **Highly Likely**—Near 100 percent chance of occurrence in next year or happens every year.
  - ✓ **Likely**—Between 10 and 100 percent chance of occurrence in next year or has a recurrence interval of 10 years or less.

- ✓ **Occasional**—Between 1 and 10 percent chance of occurrence in the next year or has a recurrence interval of 11 to 100 years.
- ✓ **Unlikely**—Less than 1 percent chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.

➢ **Climate Change**—This section contains the effects of climate change (as applicable). The possible influence of climate change on the hazard is discussed.

Vulnerability Assessment Methodology

With the Tri-City's hazards identified and profiled, a vulnerability assessment was conducted to describe the vulnerability and impact that each hazard would have on the Tri-City Planning Area. The vulnerability assessment quantifies, to the extent feasible using best available data, assets at risk to identified hazards and estimates potential losses. This section focuses on the vulnerabilities of the Tri-City Planning Area as a whole.

As part of the vulnerability assessment, an estimate of the vulnerability of the Tri-City Planning Area to each identified hazard, in addition to the estimate of risk of future occurrence, is provided in each of the hazard-specific sections that follow. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- ➢ **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- ➢ **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- ➢ **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- ➢ **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- ➢ **Extremely High**—Very widespread with catastrophic impact.

Existing Built Environment and Assets at Risk

Vulnerability can be quantified in those instances where there is a known, identified hazard area, such as a mapped floodplain. In these instances, the numbers and types of assets subject to the identified hazard can be counted and their values tabulated. Other information can be collected in regard to the hazard area, such as the location of critical facilities, historic structures, and valued natural resources. Together, this information conveys the impact, or vulnerability, of the Tri-City Planning Area to that hazard.

The vulnerability assessment identified eight hazards in the Tri-City Planning Area for which specific geographical hazard areas have been defined and for which sufficient data exists to support a quantifiable vulnerability analysis. These eight hazards are:

- ➢ Coastal Flooding and Sea Level Rise

- Dam Failure
- Earthquake (Liquefaction and Earthquake-Induced Landslide)
- Flood
- Landslide
- Levee Failure
- Tsunami
- Wildfire

These hazards were analyzed using GIS and Tri-City data.

The vulnerability and potential impacts from the seven priority hazards that do not have specific mapped areas nor the data to support additional vulnerability analysis are discussed in more general terms. These include:

- Climate Change
- Drought and Water Shortage
- Flood: Localized/Stormwater
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rain and Storms
- Severe Weather: High Winds and Tornadoes
- Subsidence

Power Outages/Failure: A Common Vulnerability of all Hazards

An additional impact or vulnerability common to most all hazards is power outage or power failure. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the Department of Energy, major blackouts are on the upswing. Over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. Electric power disruptions can be generally grouped into two categories: intentional and unintentional.

Intentional Disruptions

There are four types of intentional disruptions:

- **Planned**: Some disruptions are intentional and can be scheduled based maintenance or upgrading needs.
- **Unscheduled**: Some intentional disruptions must be done "on the spot." in response to an emergency.
- **Demand-Side Management**: Some customers (i.e., on the demand side) have entered into an agreement with their utility provider to curtail their demand for electricity during periods of peak system loads.
- **Load Shedding**: When the power system is under extreme stress due to heavy demand and/or failure of critical components, it is sometimes necessary to intentionally interrupt the service to selected customers to prevent the entire system from collapsing, resulting in rolling blackouts.

The California Independent System Operator (CAISO) is tasked with managing the power distribution grid that supplies most of California, except in areas served by municipal utilities. CAISO is thus the entity that coordinates statewide flow of electrical supply. CAISO uses a series of stage alerts to the media based on system conditions. The alerts are:

- Stage 1 – reserve margin falls below 7 percent
- Stage 2 – reserve margin falls below 5 percent
- Stage 3 – reserve margin falls below 1.5 percent

Rotating blackouts become a possibility when Stage 3 is reached. Rotating outages and/or blackouts such as those experienced in 2000/2001 and 2006 can occur due to losses in transmission or generation and/or extremely severe temperatures that lead to heavy electric power consumption. Key California events include the following:

On January 17, 2001, CAISO declared a Stage 3 Emergency and notified the then Governor's Office of Emergency Services that PG&E was dropping firm load of 500 megawatts (MW) in Northern California leading to rolling blackouts. Cal OES, in turn, issued an Electrical Emergency Message to all Emergency Services Agencies to prepare for rolling blackouts. This scenario was repeated the following day, January 18, 2001, and again on March 19, 2001.

A July 2006 heat storm event affected the entire state as well as most of the West, producing record energy demand levels in California. The State was able to avoid rotating outages due to a combination of favorable factors that included no major transmission outages, lower than typical generator outages, significant customer response to pleas for energy conservation, high imports from the Pacific Northwest despite unusually high loads, outstanding cooperation among western control area operators, and prompt response to fires that potentially threatened major interties. However, the event brought to light the vulnerability of the electric distribution system, as over 3,500 distribution transformers failed, leaving over two million customers without power at various times over the ten-day event, many for several hours and a small minority for up to three days.

In 2020, the state battled both extreme heat and wildfires. As a result of extreme heat, the CAISO declared a Stage 3 emergency. PG&E initiated rotating outages in August at the request of California's grid operator. The outages, which impacted 220,000 customers, occurred during periods of high heat. These rolling blackouts lasted less than a week.

Unintentional Disruptions

Unintentional or unplanned disruptions are outages that come with essentially no advance notice. This type of disruption can be the most problematic. The following are categories of unplanned disruptions:

- Accident by the utility, utility contractor, or others
- Malfunction or equipment failure
- Equipment overload (utility company or customer)
- Reduced capability (equipment that cannot operate within its design criteria)
- Tree contact other than from storms
- Vandalism or intentional damage
- Weather, including lightning, wind, earthquake, flood, and broken tree limbs taking down power lines

- Wildfire that damages transmission lines

Public Safety Power Shutoff

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), coordinated to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a Public Safety Power Shutoff (PSPS).

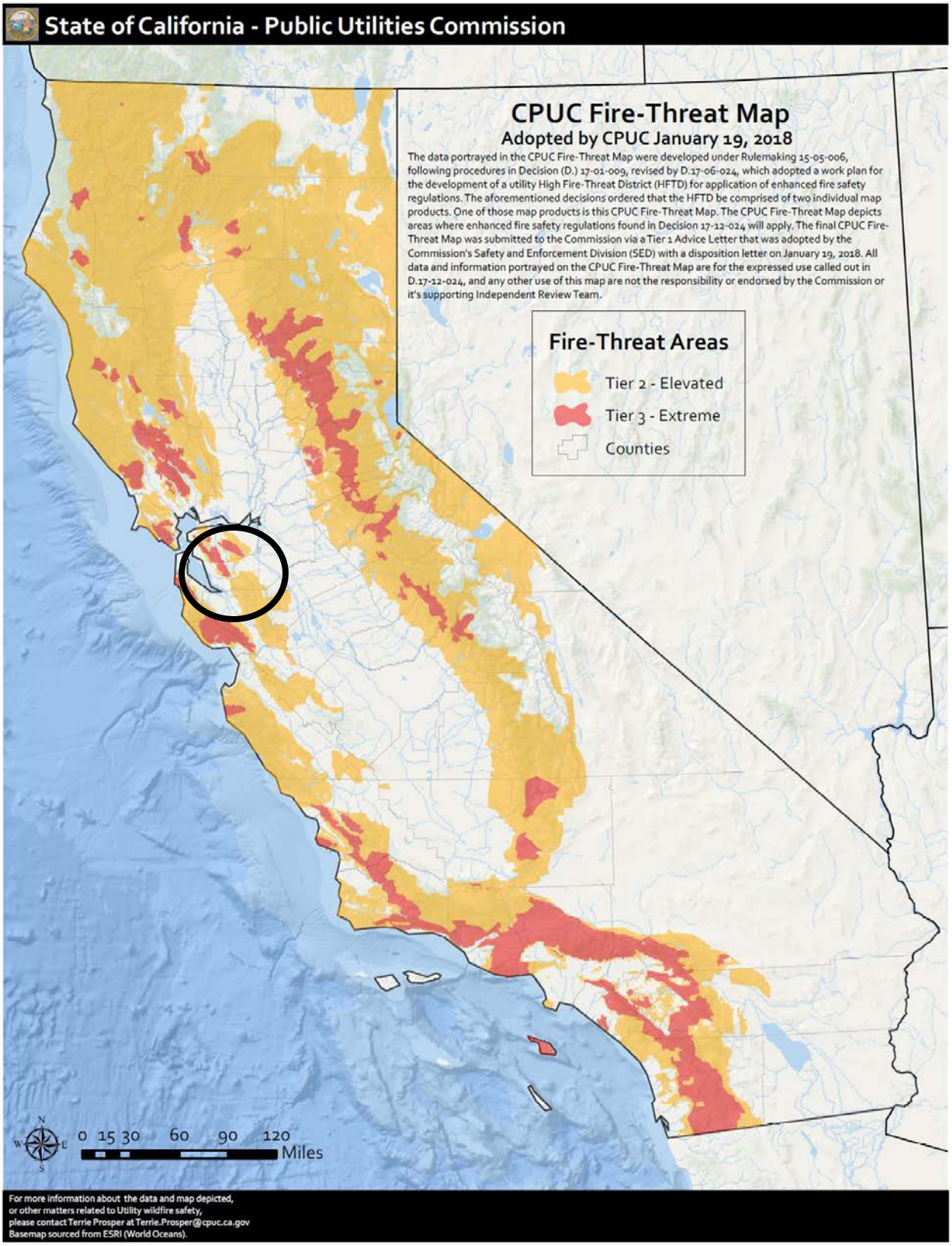
Public Safety Power Shutoff Criteria

The Wildfire Safety Operations Center (WSOC) monitors fire danger conditions across PG&E's service area, including PSPS conditions. These factors include:

- A Red Flag Warning declared by the National Weather Service
- Low humidity levels generally 20% and below
- Forecasted sustained winds generally above 25 mph and wind gusts in excess of approximately 45 mph, depending on location and site-specific conditions such as temperature, terrain and local climate
- Condition of dry fuel on the ground and live vegetation (moisture content)
- On-the-ground, real time observations from PG&E's WSOC and field observations from PG&E crews

The most likely electric lines to be considered for shutting off for safety will be those that pass through areas that have been designated by the CPUC as at elevated (Tier 2) or extreme (Tier 3) risk for wildfire (seen on Figure 4-11). This includes both distribution and transmission lines. The specific area and number of affected customers will depend on forecasted weather conditions and which circuits PG&E needs to turn off for public safety. Although a customer may not live or work in a high fire-threat area, their power may also be shut off if their community relies upon a line that passes through an area experiencing extreme fire danger conditions. This means that any customer who receives electric service from PG&E should be prepared for a possible PSPS. PSPS events, while preventative in nature, can cause a variety of issues related to the lack of power to those impacted by the PSPS. For the Tri-City Planning Area, a significant concern is the impact to their communication systems as well as on other critical infrastructure and services. PSPS events also cause concerns for certain vulnerable populations. As seen on Figure 4-11, the Tri-City has areas inside the Tier 2 and Tier 3 areas, as well as areas outside of them.

Figure 4-10 State of California Tier 2 and 3 Areas



PG&E noted that extreme weather threats can change quickly. When possible, PG&E will provide customers with advance notice prior to turning off the power, as well as updates until power is restored. Timing of notifications (when possible) are:

- Approximately 48 hours before power is turned off
- Approximately 24 hours before power is turned off
- Just before power is turned off
- During the public safety outage
- Once power has been restored

According to records provided by jurisdictions in the Tri-City Planning Area, there have been past PSPS events. These are discussed in each jurisdiction's respective annex to this Base Plan.

It was noted that PG&E is working to enhance its power network with Enhanced Powerline Safety Settings (EPSS) capable lines. EPSS are advanced safety settings. They allow PG&E powerlines to automatically turn off power within one-tenth of a second. This can happen when there is a hazard, like a tree branch falling into a powerline, which can cause a fire. These settings are in high fire-risk and surrounding areas. These have not yet been installed in and near the Tri-City area, as PG&E focuses on other very high fire hazard areas in its service territory first. It is thought these EPSS capable lines will eventually come to the Tri-City Planning Area.

Climate Change and Power Outages/Failures (Energy Shortage)

Changing climate is expected to bring more frequent and intense natural disasters. Key climate parameters are starting to move outside of historically observed variability at a rate that makes historical data a poor predictor of future climate. For example, the warmest years on record in California occurred in 2014, 2015, 2016, and 2019. 2023 was a remarkably hot year as well. In addition, the 2016-2017 year broke the record as the wettest ever recorded in the northern Sierra Nevada Mountains.

Changes in temperatures, precipitation patterns, extreme events, and sea level rise have the potential to decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, render hydropower less reliable, spur an increase in electricity demand, and put energy infrastructure at risk of flooding.

With climate warming, higher costs from increased demand for cooling in the summer are expected to outweigh the decreases in heating costs in the cooler seasons. Hotter temperatures in California will mean more energy (typically measured in "cooling-degree days") needed to cool homes and businesses both during heat waves and on a daily basis, during the daytime peak of the diurnal temperature cycle. During future heat waves, historically cooler coastal cities (e.g., San Francisco and Los Angeles) are projected to experience greater relative increases in temperature, such that areas that never before relied on air conditioning will experience new cooling demands.

Secondary impacts of energy shortages are most often felt by vulnerable populations. For example, those who rely on electric power for life-saving medical equipment, such as respirators, are extremely vulnerable to power outages. Also, during periods of extreme heat emergencies, the elderly and the very young are more vulnerable to the loss of cooling systems requiring power sources.

Additional impacts from a power disruption can also affect remote areas. This can affect evacuation messaging and coordination difficulties, and a reduction in firefighting capabilities due to lack of water access in more remote areas (especially for those on wells).

Hazard Profiles and Vulnerability Assessment by Hazard

The following sections provide the hazard profile and vulnerability assessments for each of the hazards identified in Section 4.1 Hazard Identification. ***The severe weather hazards are discussed first to paint the picture of the Tri-City's Planning Area's climate and hazard environment which often lead to other hazards such as flood and wildfire. The remainder of the hazards follow alphabetically.***

Data Sources

The following data sources formed the basis for this Hazard Profile and Vulnerability Assessment portion of the Plan Update:

- 2018 and 2023 California State Hazard Mitigation Plan
- 2020 California Climate Adaptation Study
- 2023 Draft State Plan
- Alameda County Water District GIS
- Alameda County Water District staff
- ArkStorm at Tahoe – Stakeholder Perspectives on Vulnerabilities and Preparedness for an Extreme Storm Event in the Greater Lake Tahoe, Reno and Carson City Region. 2014.
- Bureau of Land Management
- CA DWR Best Available Maps
- CAL FIRE GIS datasets
- Cal OES
- Cal-Adapt
- Cal-Adapt – Annual Average of Acres Burned
- Cal-Adapt – Extended Drought Scenarios
- Cal-Adapt – Number of Extreme Heat Days by Year
- Cal-Adapt – Precipitation: Decadal Averages Map
- California Adaptation Planning Guide
- California Climate Adaptation Strategy (CAS) – 2021
- California Department of Water Resources
- California Department of Water Resources Best Available Maps
- California Department of Water Resources Division of Safety of Dams
- California Division of Mines and Geology
- California Geological Survey
- California Independent System Operator
- California Natural Resources Report in 2014
- California Office of Emergency Services – Dam Inundation Data
- California Public Utilities Commission
- California's Drought of 2007-2009, An Overview. State of California Natural Resources Agency, California Department of Water Resources.
- City of Fremont GIS
- City of Fremont staff

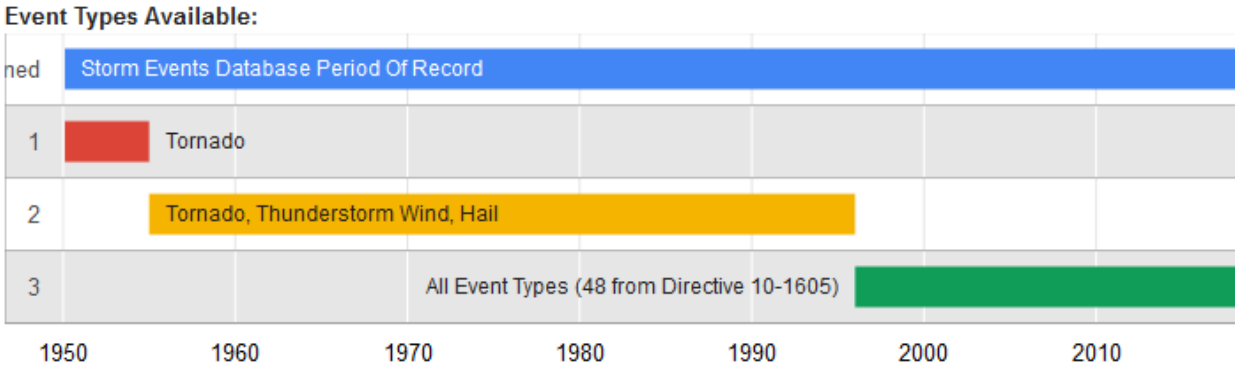
- City of Newark GIS
- City of Newark staff
- City of Union City GIS
- City of Union City staff
- Climate Change and Health Profile Report – Alameda County
- Climate Change and Health Profile Report (CCHPR) – Alameda County (2017)
- Department of Energy
- Existing plans and studies
- FEMA
- FEMA: Building Performance Assessment: Oklahoma and Kansas Tornadoes
- FEMA's HAZUS-MH 6.0 GIS-based inventory data
- Integrated Regional Water Management Plan
- IPCC Fifth Assessment Synthesis Report (2014)
- Kenward, Alyson PhD, Adams-Smith, Dennis, and Raja, Urooj. Wildfires and Air Pollution – The Hidden Health Hazards of Climate Change. Climate Central. 2013.
- Levees in History: The Levee Challenge. Dr. Gerald E. Galloway, Jr., P.E., Ph.D., Water Policy Collaborative, University of Maryland, Visiting Scholar, USACE, IWR.
- Liu, J.C., Mickley, L.J., Sulprizio, M.P. et al. Climatic Change. 138: 655. doi:10.1007/s10584-016-1762-6. 2016.
- Multi-Hazard Identification and Risk Assessment, FEMA 1997
- National Drought Mitigation Center
- National Drought Mitigation Center – Drought Impact Reporter
- National Integrated Drought Information System
- National Levee Database
- National Oceanic and Atmospheric Administration's National Climatic Data Center
- National Weather Service
- National Weather Service XMAC site
- Natural Resource and Conservation Service
- NCDC
- NOAA Storm Prediction Center
- NOAA's National Climatic Data Center
- Pacific Gas and Electric Company
- Personal interviews with planning team members and staff from each jurisdiction
- Proceedings of the National Academy of Sciences
- Public Health Alliance of Southern California
- Public Policy Institute of California
- Scawthorn, C. 2018. "Fire following the Mw 7.05 HayWired earthquake scenario." Pp. 367-400 in The HayWired Earthquake Scenario --Engineering Implications, edited by Shane T. Detweiler and Anne M. Wein. Washington: U.S. Geological Survey Scientific Investigations Report 2017 -5013 -I -Q. https://pubs.er.usgs.gov/publication/sir20175013
- Science Magazine
- Statewide GIS datasets from other agencies such as Cal OES, FEMA, USGS, CGS, Cal Atlas, and others
- U.S. Census Bureau 2020 Household Population Estimates
- U.S. Fish and Wildlife Service
- U.S. Fish and Wildlife Service's National Wetlands Inventory maps
- U.S. Geological Survey

- U.S. Occupational Safety and Health Administration
- United States Geological Survey Open File Report 2015-3009
- University of California
- US Army Corps of Engineers
- US Census Data from the American Housing Survey
- US Center for Disease Control
- USDA Forest Service Region 5
- USGS Bulletin 1847
- USGS National Earthquake Information Center
- USGS Publication 2014-3120
- Vaisala National Lightning Detection Network
- Western Regional Climate Center
- Wildfire Safety Operations Center
- Written descriptions of inventory and risks provided by staff from the Tri-City Planning Area jurisdictions

4.3.1. Severe Weather: General

Severe weather is generally any destructive weather event, but usually occurs throughout the Tri-City Planning Area as localized storms that bring heavy rain, lightning, and strong winds. The NOAA's National Climatic Data Center (NCDC) has been tracking severe weather since 1950. Their Storm Events Database contains data on the following events shown on Figure 4-11.

Figure 4-11 NCDC Storm Events Database Period of Record



Event Types Available:
Add more info about event types here. Link to collections page/tab when referencing data collection source.

1. Tornado: From 1950 through 1954, only tornado events were recorded.

2. Tornado, Thunderstorm Wind and Hail: From 1955 through 1992, only tornado, thunderstorm wind and hail events were keyed from the paper publications into digital data. From 1993 to 1995, only tornado, thunderstorm wind and hail events have been extracted from the Unformatted Text Files.

3. All Event Types (48 from Directive 10-1605): From 1996 to present, 48 event types are recorded as defined in NWS Directive 10-1605.

Source: NCDC

This database contains severe weather events that occurred in Alameda County between January 1, 1950, and December 31, 2022. These events affected the Tri-City Planning Area (as located in Alameda County) as a whole, and most likely affected the five participating jurisdictions as well. Table 4-15 summarizes these events for Alameda County.

*Table 4-15 Alameda County NCDC Storm Events 1/1/1950-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Coastal Flood	3	0	0	0	0	$0	$0
Debris Flow	16	0	0	0	0	$12,874,000	$0
Dense Fog	19	0	0	0	0	$0	$0
Dense Smoke	8	0	0	0	0	$0	$0
Excessive Heat	6	0	0	0	0	$0	$0
Flash Flood	12	0	0	0	0	$100,000	$0
Flood	43	0	0	0	0	$44,325,500	$0
Frost/Freeze	4	0	0	0	0	$20,000	$400,000
Hail	14	0	0	0	0	$0	$0
Heat	19	1	1	13	0	$30,000	$0
Heavy Rain	5	0	2	0	1	$60,000	$30,000
High Surf	1	0	0	0	0	$0	$0
Heavy Snow	1	0	0	0	0	$0	$0
High Wind	88	1	0	1	0	$3,210,000	$0
Strong Wind	263	4	0	8	0	$3,753,800	$0
Thunderstorm Wind	2	0	0	0	0	$50,000	$0
Tornado	5	0	0	0	0	$275,000	$0
Tsunami	1	0	0	0	0	$50,000	$0
Wildfire	18	0	0	6	1	$10,000	$0
Winter Storm	6	0	0	0	0	$0	$0
Total	**534**	**6**	**3**	**28**	**2**	**$64,758,300**	**$430,000**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

The NCDC table above summarizes severe weather events that occurred in greater Alameda County. Only a few of the events actually resulted in state and federal disaster declarations. It is interesting to note that different data sources capture different events during the same time period, and often display different information specific to the same events. While the Planning Committee recognizes these inconsistencies, they see the value this data provides in depicting the Planning Area's "big picture" hazard environment.

As previously mentioned, many of Alameda County's state and federal disaster declarations have been a result of severe weather. For this LHMP Update, severe weather is discussed in the following subsections:

- Extreme Cold and Freeze
- Extreme Heat
- Heavy Rains and Storms
- High Winds and Tornadoes

The remainder of the hazards follow alphabetically.

4.3.2. Severe Weather: Extreme Cold and Freeze

Hazard Profile

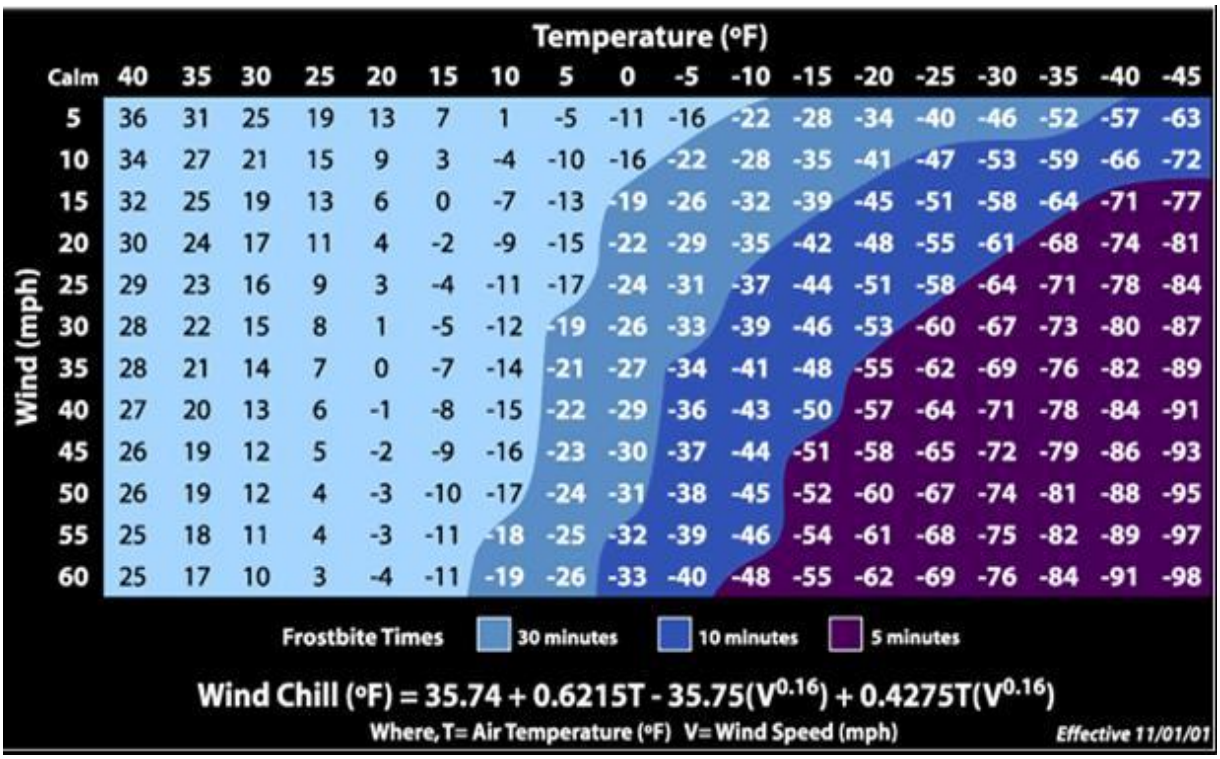
This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect or influence this hazard.

It should be noted that this hazard was not initially identified by the Tri-City Planning Committee as a hazard of concern, but was added during the kickoff meeting to recognize the impact this hazard has on vulnerable and underserved populations, such as the homeless, low income, and other groups who often experience increased challenges during extreme cold and freeze events.

Hazard/Problem Description

According to the National Weather Service (NWS) and the Western Regional Climate Center (WRCC), extreme cold often accompanies a winter storm or is left in its wake. In 2001, the NWS implemented an updated Wind Chill Temperature index (shown in Figure 4-12), which is reproduced below. This index was developed to describe the relative discomfort/danger resulting from the combination of wind and temperature. Wind chill is based on the rate of heat loss from exposed skin caused by wind and cold. As the wind increases, it draws heat from the body, driving down skin temperature and eventually the internal body temperature.

Figure 4-12 Wind Chill Temperature Chart



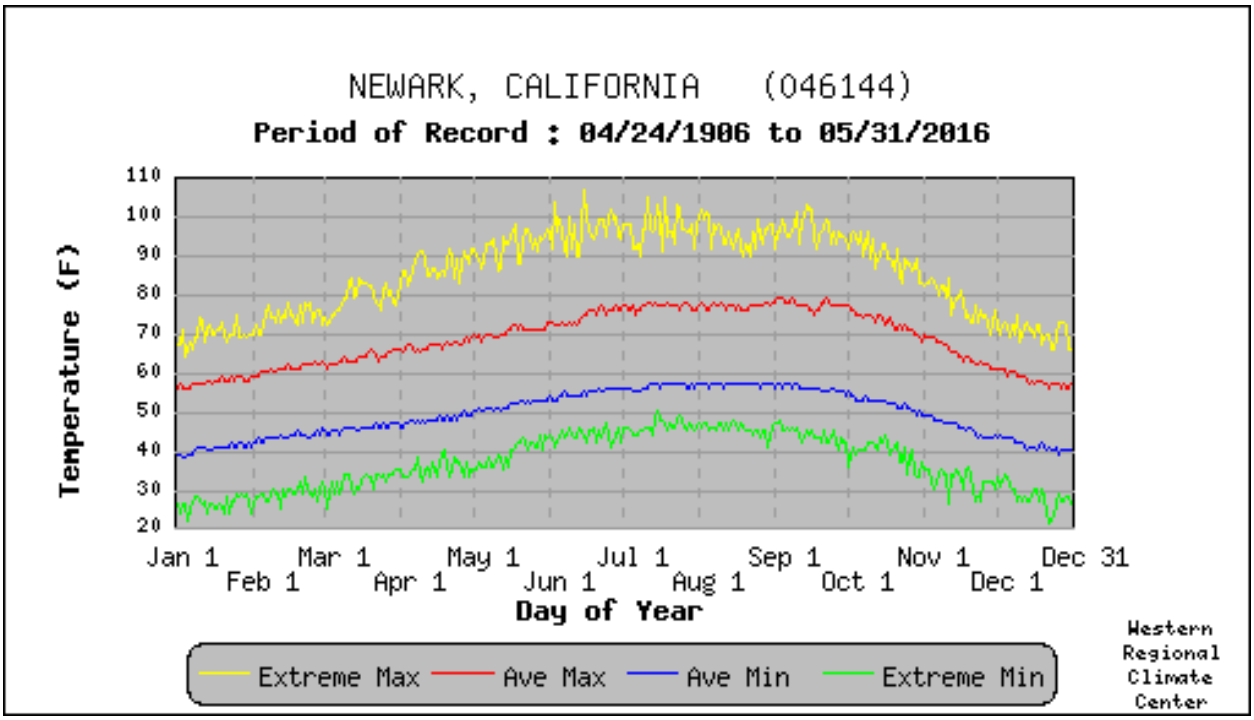
Source: National Weather Service

Information on extreme cold and freeze from the WRCC coop station nearest the Tri-City Planning Area is shown below, as well as from the nearest NWS station. WRCC data goes further back in time (with a period of record from 1906 to 2016), while the NWS data is more recent (with a period of record from 1991 to 2022). The use of both datasets gives a more comprehensive look at weather normal and extremes.

Newark WRCC Weather Station, Period of Record 1906 to 2016

According to the WRCC, monthly average maximum temperatures in the coldest months (November through March) range from the low-40s to the mid-50s. The lowest recorded daily extreme was 21°F on December 22, 1922. In a typical year, maximum temperatures fall below 32°F on 6.5 days. Figure 4-13 shows the average daily high temperatures and extremes for the Tri-City Planning Area. Table 4-16 shows the record low temperatures by month for the Planning Area.

Figure 4-13Tri-City Planning Area— Daily Temperature Averages and Extremes



Source: Western Regional Climate Center, www.wrcc.dri.edu/. Retrieved 4/26/2023.

Table 4-16 Tri-City Planning Area – Record Low Temperatures 1906 to 2016

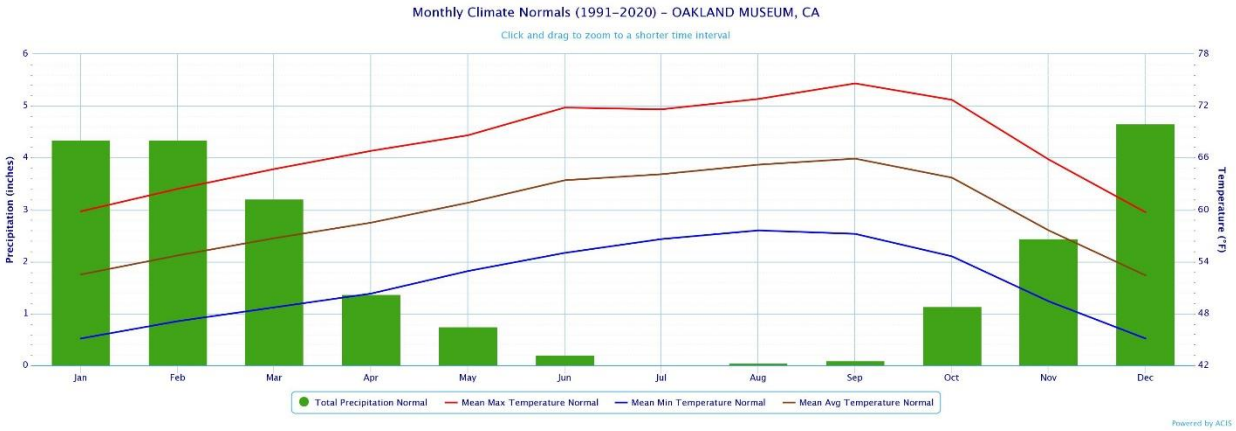
Month	Record Low	Date	Month	Record Low	Date
January	22°	1/5/1950	July	44°	7/13/1942
February	26°	2/1/1950	August	41°	8/29/1942
March	25°	3/2/1953	September	40°	9/27/1948
April	32°	4/10/1945	October	33°	10/29/1946
May	35°	5/1/1942	November	26°	11/11/1946
June	41°	6/26/1943	December	21°	12/22/1990

Source: Western Regional Climate Center

Tri-City Planning Area – Oakland Museum NWS Station

According to the NWS, monthly average minimum temperatures in the coldest months (November through March) range from the low-40s to the mid-50s. The lowest recorded daily extreme was 26°F on December 9, 1972. Figure 4-14 shows the average daily low temperatures and extremes for the Planning Area. Table 4-17 shows the record low temperatures for the Planning Area.

Figure 4-14 Tri-City Planning Area— Daily Temperature Averages and Extremes, 1991-2022



Source: National Weather Service XMAC site. Retrieved 4/26/2023.

Table 4-17 Tri-City Planning Area – Record Low Temperatures (Ascending) 1970 to 2021

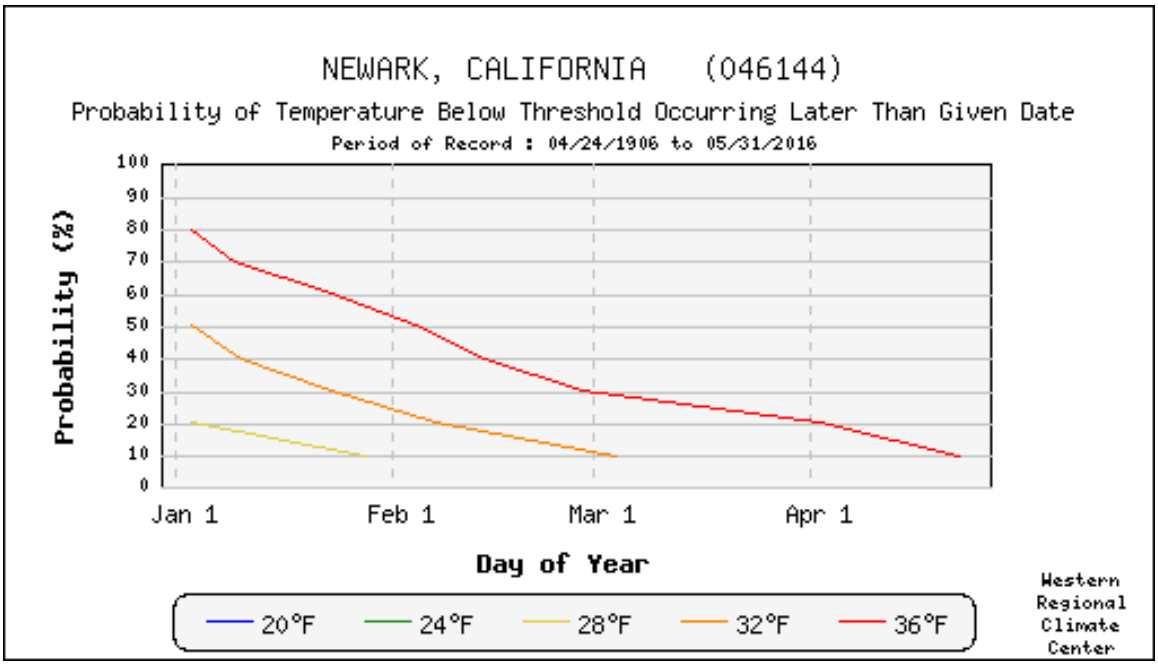
Temperature	Date
26.0°	9/12/1972
27.0°	12/22/1990
28.0°	12/11/1972
29.0°	2/5/1976
29.0°	12/10/1972
30.0°	12/23/1990
30.0°	1/30/1975
31.0°	12/21/1990
31.0°	1/2/1976
31.0°	12/13/1972

Source: National Weather Service XMAC site.

Location and Extent

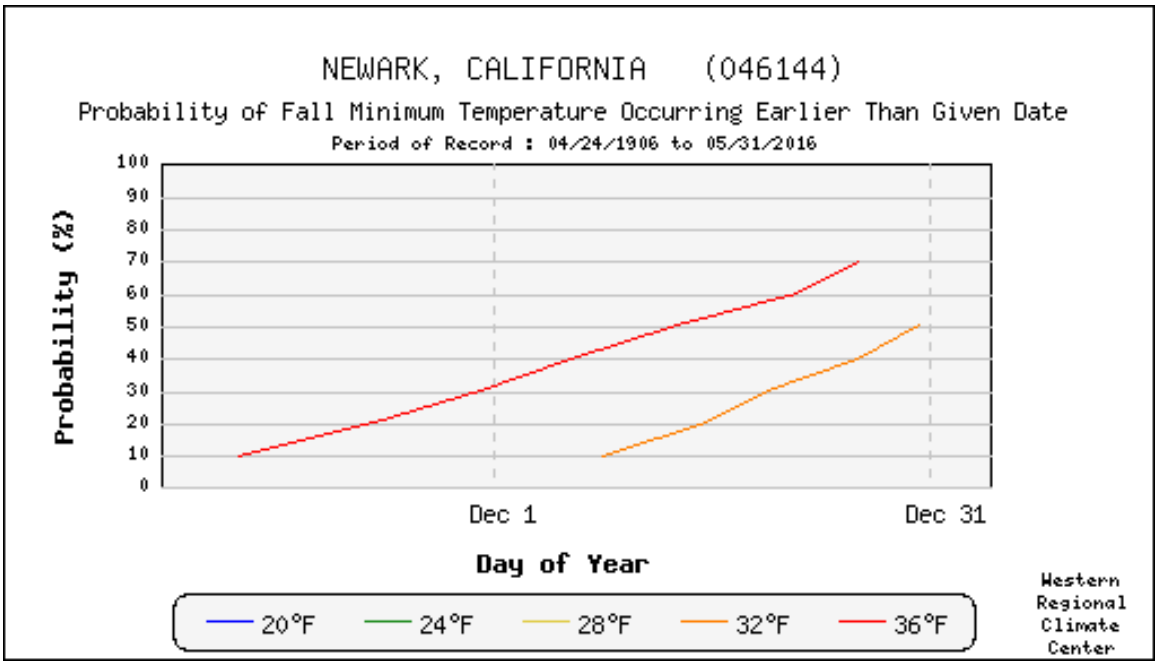
Extreme cold and freeze events occur on a regional basis. Extreme cold can occur in any location of the Tri-City Planning Area. All portions of the Planning Area are at risk to extreme cold. While there is no scale (i.e. Richter, Enhanced Fujita) to measure the effects of freeze, temperature data from the Planning Area from the WRCC indicates that there are 8.4 days that fall below 32°F. Freeze has a slow onset and can generally be predicted in advance for the Planning Area. Freeze events can last for hours (in a cold overnight), or for days to weeks at a time. Figure 4-15 and Figure 4-16 show the probabilities in the Planning Area of freeze for both spring and fall.

Figure 4-15 Tri-City Planning Area – Spring Freeze Probabilities



Source: Western Regional Climate Center. Retrieved 4/26/2023.

Figure 4-16 Tri-City Planning Area – Fall Freeze Probabilities



Source: Western Regional Climate Center. Retrieved 4/26/2023.

Past Occurrences

Disaster Declaration History

Alameda County has had no past federal and no state disaster declarations for extreme cold and freeze, as shown on Table 4-5

NCDC Events

The NCDC reports 11 events of past extreme cold and freeze for Alameda County since 1996 as shown on Table 4-18.

*Table 4-18 Alameda County NCDC Storm Events 1/1/1950-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Frost/Freeze	4	0	0	0	0	$20,000	$400,000
Heavy Snow	1	0	0	0	0	$0	$0
Winter Storm	6	0	0	0	0	$0	$0
Total	**11**	**0**	**0**	**0**	**0**	**$20,000**	**$400,000**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

Planning Committee Events

The Planning Committee noted that while extreme cold and freeze are regional and annual events, dates where specific damages, injuries, or deaths occurred could not be recalled.

Likelihood of Future Occurrence

Highly Likely—Extreme cold and freeze will continue to occur annually in the Tri-City Planning Area. In a typical year, minimum temperatures fall below 32°F on 6.5 days in the Planning Area. This equates to a likelihood of future occurrences being considered highly likely.

Climate Change and Freeze

According to the 2020 California Climate Adaptation Study (CAS), freezing spells are likely to become less frequent in California as climate temperatures increase; if emissions increase, freezing events could occur only once per decade in large portion of the State by the second half of the 21st century. According to a California Natural Resources Report in 2014, it was determined that while fewer freezing spells would decrease cold related health effects; too few freezes could lead to increased incidence of disease as vectors and pathogens do not die off.

Vulnerability Assessment

Vulnerability—Medium

Extreme cold and freeze events happen in the Tri-City Planning Area each year. It can impact both structures and populations in the Planning Area. The whole of the Planning Area has some measure of vulnerability to extreme cold and freeze. Vulnerability of the community is discussed in multiple sections that detail how this hazard can affect the Planning Area. These sections include assets at risk, impacts, and how future development can be affected by this hazard.

Assets at Risk

Assets at risk from extreme cold and freeze include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All populations within the Tri-City Planning Area are vulnerable to extreme cold and freeze, but this hazard generally affects people spending large amounts of time outside. Prolonged exposure to cold can cause frostbite or hypothermia and can be life-threatening. Vulnerable populations to cold and freeze include the unhoused; individuals who exercise or train outdoors; outdoor workers; individuals that lack the resources to afford heat; and the young, old, or medically fragile individuals that are more susceptible to cold related impacts. In addition to vulnerable populations, pets and livestock are at risk to freeze and cold.

Structures

Structures in the Tri-City Planning Area have some measure of risk from extreme cold and freeze. While it is rare for buildings to be affected directly by freeze, pipes that feed buildings can be damaged during periods of extreme cold and cause water damage and other related impacts to a structure.

Critical Facilities and Infrastructure and Community Lifelines

Depending on the facility type and function, critical facilities and infrastructure may be affected directly by freeze. Damage to pipes that feed buildings can be damaged during periods of extreme cold. Other equipment may also be affected. Infrastructure such as roads, highways, and bridges can become slippery, causing accidents and road closures.

Community lifelines are likely to be affected to some degree by extreme heat events. Impacts to these lifelines include:

- **Safety and Security** – Police and fire personnel may see additional demand during periods of extreme cold.
- **Food, Hydration, Shelter** – Warming centers and other public shelters will need to be open and staffed.
- **Health and Medical** – Though rare, hypothermia may cause additional strains on medical facilities in the area.

- **Energy** – Though rare, freezing rain can cause power outages as power lines get heavy from the additional weight of ice.
- **Water Systems** – Water lines (both fresh and wastewater) above ground can freeze, causing burst pipes. This is true when temperatures are below freezing for a longer period of time.

Due to the limited nature of extreme cold and freeze in the Tri-City Planning Area, community lifelines are unlikely to be overwhelmed.

Natural, Historic, and Cultural Resources

Depending on how low the temperatures go and the duration of an extreme cold and freeze event, natural resources in the Tri-City Planning Area may be affected. During periods of freeze, trees in the Tri-City Planning Area may be damaged. This is especially true if a freeze occurs during a winter storm with winds and precipitation. Other natural resources like wildlife may be at risk during a period of freeze. While it is rare for buildings to be affected directly by freeze, damages to pipes that feed historic buildings can be damaged during periods of extreme cold and cause additional impacts to the structures.

Economic Assets and Community Activities of Value

Most economic assets within the Tri-City Planning Area are not highly vulnerable to extreme cold events. However, during periods of extreme cold and freeze, the economy may slow as people stay home or inside. Commercial business revenue, including taxable shopping revenue may be reduced during periods of extreme cold. Additionally, extreme cold and freeze causes power costs borne by individuals and businesses in the Tri-City Planning Area to increase, which reduces the amount of money available to circulate inside the local economy. Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors.

Impacts from Severe Weather: Extreme Cold and Freeze

Extreme cold and freeze can affect critical facilities and infrastructure, down trees, break pipes, and can be a life safety issue. Transportation networks, communications, and utilities infrastructure are often the most vulnerable physical assets in the Tri-City Planning Area. Infrastructure such as roads and utilities are at risk to freezing temperatures, causing failures and hazardous road conditions. When extreme cold is coupled with high winds and freezing storms, power lines may be downed, resulting in power outages and an interruption of utilities and critical services. During periods of extremely low or prolonged cold temperatures, other impacts to the Planning Area include can include interruption in business and school activities.

The elderly, the young, and those experiencing medical issues are often more vulnerable to temperature extremes, but anyone can be affected. Exposure to cold temperatures can cause hypothermia and frostbite. Those exercising or recreating outdoors, outdoor workers, and the unhoused may be at a higher risk.

Future Development

Future development built to code should be able to withstand extreme cold and freeze. Current building codes provide such provisions for new construction. Vulnerability to extreme cold will increase as the

average age of the population in the Tri-City Planning Area shifts resulting in a larger number of senior citizens in the Planning Area. More specific information on future development and its effect on extreme cold and freeze can be found in each jurisdiction's annex to this Base Plan.

4.3.3. Severe Weather: Extreme Heat

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

According to information provided by FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and last for several weeks. Heat kills by taxing the human body beyond its abilities. According to the CDC, in a normal year, about 658 Americans succumb to the demands of summer heat. In the 40-year period from 1936 through 1975, nearly 20,000 people were killed in the United States by the effects of heat and solar radiation. In the heat wave of 1980, more than 1,250 people died. Recently in California, records were set across the state during a September 2022 heat event. 2023 was considered the hottest on record. Extreme heat can also affect the agricultural industry, significantly impact natural resources, and can increase the risk of wildfires.

Heat disorders generally have to do with a reduction or collapse of the body's ability to shed heat by circulatory changes and sweating or a chemical (salt) imbalance caused by too much sweating. When heat gain exceeds a level at which the body can remove it, or when the body cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise, and heat-related illness may develop. Elderly persons, small children, low income households, individuals with chronic medical issues, outdoor workers, and even athletes are particularly susceptible to heat issues.

Location and Extent

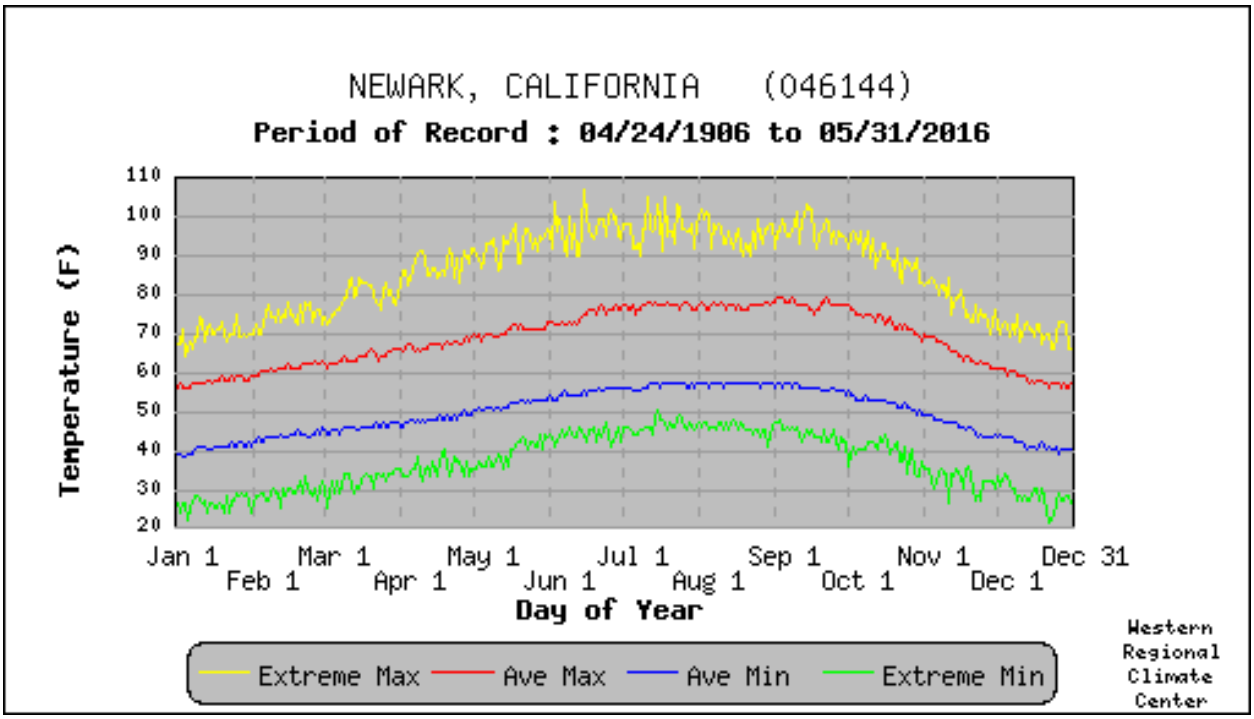
Extreme heat events occur on a regional basis. All portions of the Tri-City Planning Area are at risk to extreme heat. Extreme heat can occur in any location of the Planning Area. The WRCC and NWS maintain data on weather normal and extremes in the western United States. WRCC and NWS data for the Planning Area is summarized below for the stations closest to the Tri-City Planning Area. WRCC data goes further back in time (with a period of record from 1906 to 2016), while the NWS data is more recent (with a period of record from 1991 to 2022). The use of both datasets gives a more comprehensive look at weather normal and extremes.

Newark WRCC Weather Station, Period of Record 1906 to 2016

According to the WRCC, monthly average maximum temperatures in the warmest months (June through September) range from the upper-60s to the mid-70s. The highest recorded daily extreme was 107°F on June 15, 1961. In a typical year, maximum temperatures exceed 90°F on 8.4 days. Figure 4-17 shows the

average daily high temperatures and extremes for the Planning Area. Table 4-19 shows the record high temperatures by month for the Planning Area.

Figure 4-17Tri-City Planning Area— Daily Temperature Averages and Extremes



Source: Western Regional Climate Center, www.wrcc.dri.edu/. Retrieved 4/26/2023.

Table 4-19 Tri-City Planning Area – Record High Temperatures 1906 to 2016

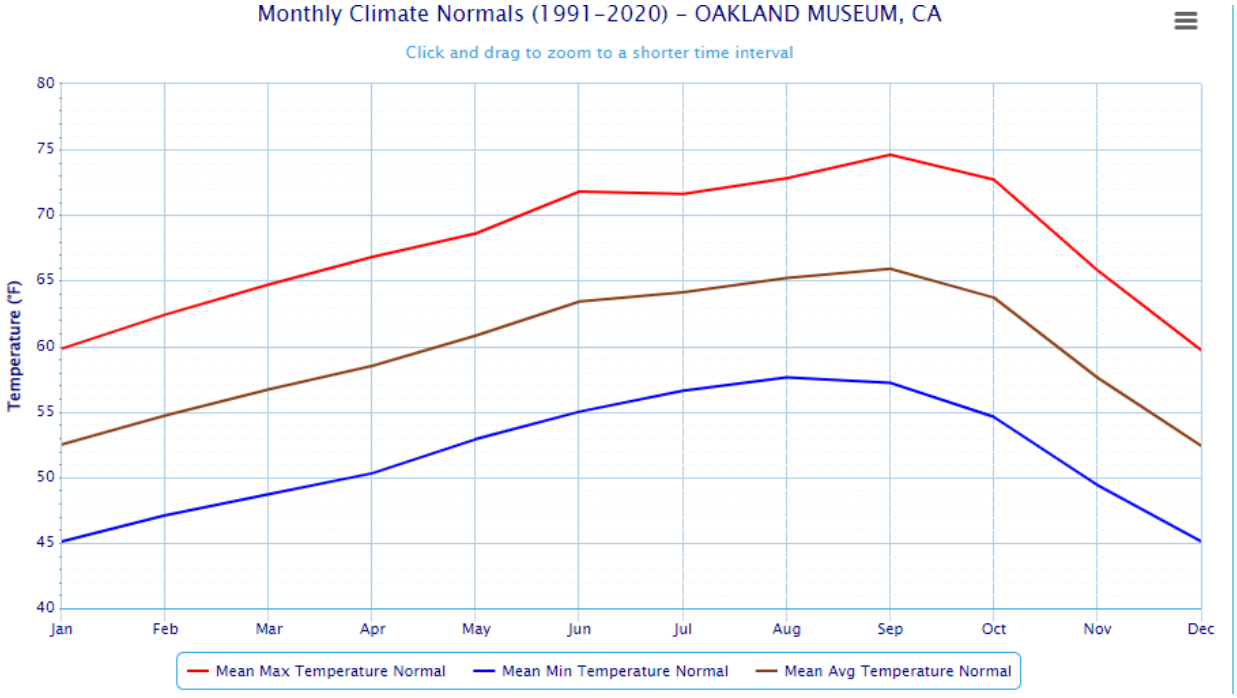
Month	Record High	Date	Month	Record High	Date
January	74°	1/10/1962	July	105°	7/11/1961
February	78°	2/15/1943	August	102°	8/2/1993
March	84°	3/12/2005	September	103°	9/14/1971
April	92°	4/30/1981	October	96°	10/3/1980
May	98°	5/18/1997	November	84°	11/4/1950
June	107°	6/15/1961	December	75°	12/9/1943

Source: Western Regional Climate Center

Tri-City Planning Area – Oakland Museum NWS Station

According to the NWS, monthly average maximum temperatures in the warmest months (June through September) range from the upper-60s to the low 70s. The highest recorded daily extreme was 109°F on September 4, 1971. Figure 4-18 shows the average daily high temperatures and extremes for the Planning Area. Table 4-20 shows the record high temperatures for the Planning Area.

Figure 4-18 Tri-City Planning Area— Daily Temperature Averages and Extremes, 1991-2020



Source: National Weather Service XMAC site. Retrieved 4/26/2023.

Table 4-20 Tri-City Planning Area – Record High Temperatures (Descending) 1970 to 2021

Temperature	Date
102.3°	9/16/1971
101.0°	9/4/2017
101.0°	6/17/1961
100.7°	7/25/2006
100.0°	9/3/2017
99.7°	7/12/1961
99.3°	7/24/2006
99.3°	9/15/1971
98.3°	9/7/2020
98.3°	8/3/1993

Source: National Weather Service XMAC site. Retrieved 4/26/2023.

Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. The NWS has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Table 4-21.

Table 4-21 National Weather Service HeatRisk Categories

Category	Level	Meaning
Green	0	No Elevated Risk
Yellow	1	Low Risk for those extremely sensitive to heat, especially those without effective cooling and/or adequate hydration
Orange	2	Moderate Risk for those who are sensitive to heat, especially those without effective cooling and/or adequate hydration
Red	3	High Risk for much of the population, especially those who are heat sensitive and those without effective cooling and/or adequate hydration
Magenta	4	Very High Risk for entire population due to long duration heat, with little to no relief overnight

Source: National Weather Service

The NWS office in San Francisco can issue the following heat-related advisory as conditions warrant.

- **Heat Advisories** are issued during events where the HeatRisk is on the Orange/Red threshold (Orange will not always trigger an advisory)
- **Excessive Heat Watches/Warnings** are issued during events where the HeatRisk is in the Red/Magenta output

Extreme heat is made worse when it is experienced over a longer duration of time.

Past Occurrences

Disaster Declaration History

There have been no FEMA or Cal OES disaster declarations in Alameda County related to extreme heat, as shown in Table 4-5.

NCDC Events

The NCDC has tracked heat and extreme heat events since 1996 for Alameda County. 25 events were recorded for the County, as shown in Table 4-22. More events have likely occurred, without being reported to the NCDC database. Specifics on damages that occurred in jurisdictions in the Planning Area were not included in the database.

*Table 4-22 Alameda County Heat Events 1/1/1996-12/31/2022**

Event Type	Date	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Excessive Heat	6	0	0	0	0	$0	$0
Heat	19	1	1	13	0	$30,000	$0
Total	**25**	**1**	**1**	**13**	**0**	**$30,000**	**$0**

Source: NCDC

*Deaths, injuries, and damages are for the entire event, and may not be exclusive to the County.

Planning Committee Events

The Planning Committee noted that extreme heat is an annual occurrence in sections of the Tri-City Planning Area. It was noted that other effects can be felt during times of drought (discussed in Section 4.3.9) that can contribute to the wildfire hazard (discussed in Section 4.3.17) and PSPS events. Specific events identified by Planning Committee members for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Highly Likely—Temperature extremes will continue to occur annually in the Tri-City Planning Area. According to the WRCC, temperatures at or above 90°F occur on 8.4 summer days in the Planning Area each year.

Climate Change and Extreme Heat

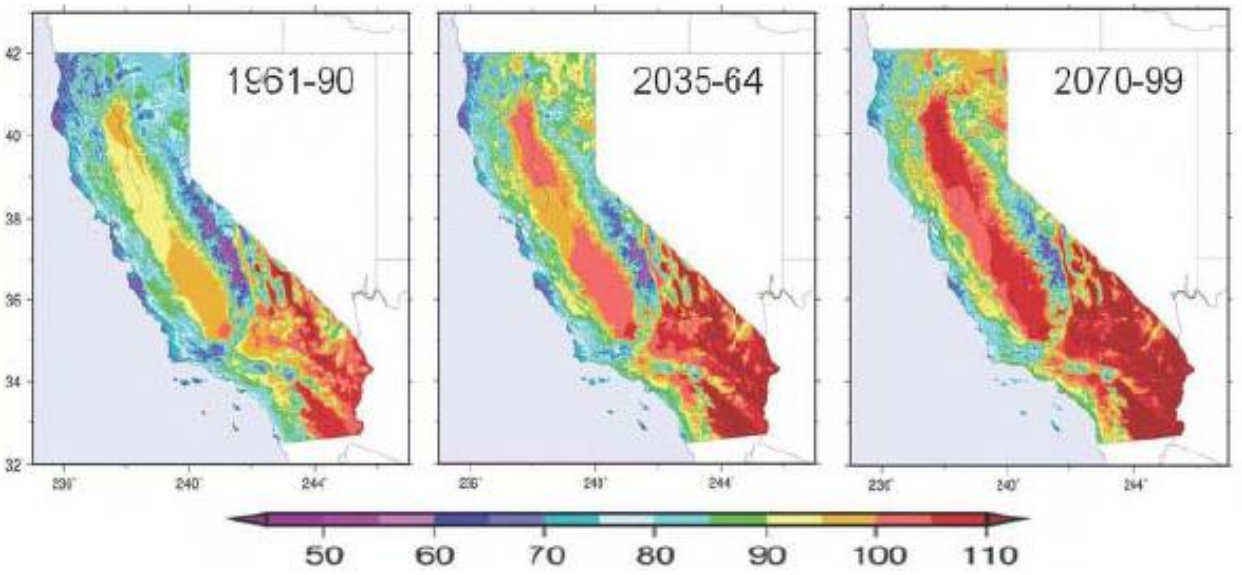
Climate change and its effect on extreme heat in and around the Tri-City Planning Area is discussed by three sources:

- California Climate Adaptation Strategy (CAS) – 2021
- Climate Change and Health Profile Report (CCHPR) – Alameda County (2017)
- Cal-Adapt

Climate Adaptation Strategy

The 2021 CAS, citing a California Energy Commission study, states that "over the past 15 years, heat waves have claimed more lives in California than all other declared disaster events combined." This study shows that California is getting warmer, leading to an increased frequency, magnitude, and duration of heat waves. These factors may lead to increased mortality from excessive heat, as shown in Figure 4-19.

Figure 4-19 California Historical and Projected Temperature Increases – 1961 to 2099



Source: Dan Cayan; California Climate Adaptation Strategy

As temperatures increase, populations in California and the Tri-City Planning Area will likely face increased risk of death from dehydration, heat stroke, heat exhaustion, heart attack, stroke and respiratory distress caused by extreme heat. According to the 2021 CAS report and the 2023 Draft State Plan, by 2100, hotter temperatures are expected throughout the State, with projected increases of 3-5.5°F (under a lower emissions scenario) to 8-10.5°F (under a higher emissions scenario). These changes could lead to an increase in health issues and deaths related to extreme heat in the Planning area.

Climate Change and Health Profile Report – Alameda County

The CCHPR noted that for Alameda County and the Tri-City Planning Area that increased temperatures manifested as heat waves and sustained high heat days directly harm human health through heat-related illnesses (mild heat stress to fatal heat stroke) and the exacerbation of pre-existing conditions in the medically fragile, chronically ill, and vulnerable. Increased heat also intensifies the photochemical reactions that produce smog and ground level ozone and fine particulates (PM2.5), which contribute to and exacerbate respiratory disease in children and adults. Increased heat and carbon dioxide enhance the growth of plants that produce pollen, which are associated with allergies. Increased temperatures add to the heat load of buildings in urban areas and exacerbate existing urban heat islands adding to the risk of high ambient temperatures.

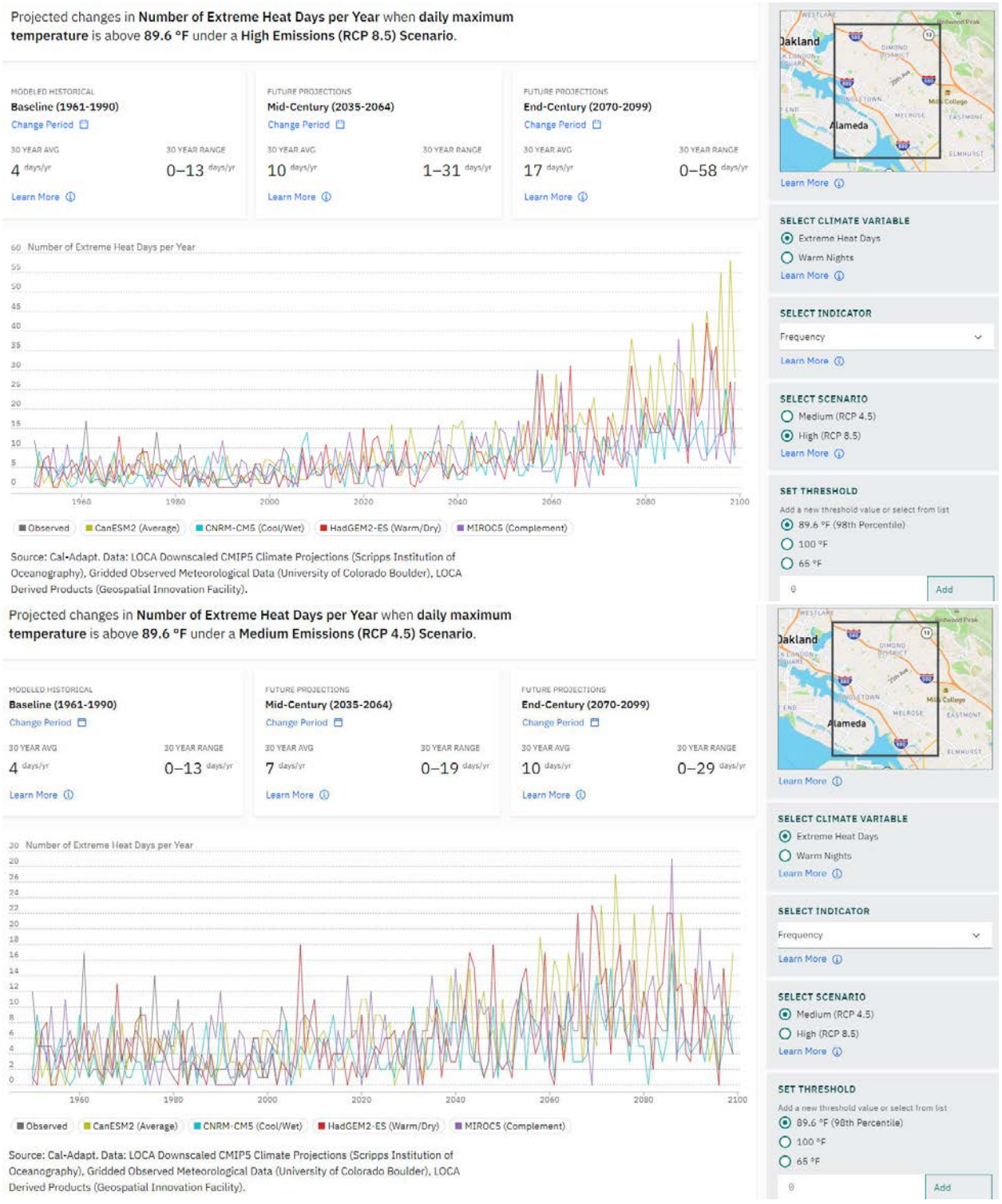
Cal-Adapt

Cal Adapt also noted that overall temperatures are expected to rise substantially throughout this century. During the next few decades, scenarios project average temperature to rise between 1 and 2.3°F; however, the projected temperature increases begin to diverge at mid-century so that, by the end of the century, the temperature increases projected in the higher emissions scenario (RCP 8.5) are approximately twice as high as those projected in the lower emissions scenario (RCP 4.5).

These projections also differ depending on the time of year and the type of measurement (highs vs. lows), all of which have different potential effects to the state's ecosystem health, agricultural production, water use and availability, and energy demand. Future temperature estimates from Cal-Adapt for the Planning Area are shown in Figure 4-20 for Alameda County. The figure shows the following:

- The upper chart shows the number of days in a year when daily maximum temperature is above the extreme heat threshold of 90.0°F. Data is shown for the Planning Area under the RCP 8.5 scenario in which emissions continue to rise strongly through 2050 and plateau around 2100.
- The lower chart shows the number of days in a year when daily maximum temperature is above the extreme heat threshold of 90.0 °F. Data is shown for the Planning Area under the RCP 4.5 scenario in which emissions peak around 2040, then decline.

Figure 4-20 Tri-City Planning Area Future Temperature Estimates in High and Low Emission Scenarios



Source: Cal-Adapt – Temperature: Decadal Averages Map. Retrieved on 4/27/2023

Vulnerability Assessment

Vulnerability—Medium

Extreme heat is becoming more frequent, intense, longer lasting and geographically widespread. Extreme heat occurs on an annual basis in the Tri-City Planning Area. In recent years, compounded by climate change conditions, summer months continue to get a bit hotter. The whole of the Tri-City Planning Area is at some measure of vulnerability to extreme heat.

US Census Data from the American Housing Survey tracks people in the San Francisco Metropolitan Statistical Area (which includes the Tri-City Planning Area). According to their data, as of 2021 around 44% of all housing units have air conditioning in them. This is an increase from 2011 when just under 9% did. The elderly and individuals below the poverty level are often the most vulnerable to extreme temperatures, even when inside. Nursing homes and elder care facilities are especially vulnerable to extreme heat events if power outages occur and air conditioning is not available. In addition, individuals below the poverty level may be at increased risk to extreme heat if use of air conditioning is not affordable. This is especially true of the unhoused and/or transient populations.

An assessment of a community's vulnerability to extreme heat begins with an understanding of local exposure to extreme heat. This is included in the discussion of the Tri-City Planning Area's Assets at Risk to this hazard.

Assets at Risk

Assets at risk from extreme heat include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All populations within the Tri-City Planning Area are vulnerable to extreme heat, but it generally affects people spending large amounts of time outside or without means of cooling indoor structures. During extended periods of high temperatures, extreme heat may overload the demands for electricity to run air conditioners and can present health concerns to individuals. When interruptions in power occur during extreme heat, the risk of heat related illnesses and deaths increase. Extreme heat is a significant concern to vulnerable populations. The unhoused; individuals who exercise or train outdoors; outdoor workers; individuals that lack the resources to afford heat; and the young, old, or medically fragile individuals that are more susceptible to heat related impacts. In addition to vulnerable populations, pets and livestock are at risk to extreme heat conditions.

Structures

Extreme heat normally does not generally impact structures, but individuals working in structures may be affected during periods of extended heat, especially in structures that might not be equipped with air conditioning or other means of cooling. In the Tri-City Planning Area, extreme heat has caused interruptions to power in the past. Also depending on the structure, sensitive contents such as IT equipment can be impacted, especially if a power outage occurs.

Critical Facilities and Infrastructure and Community Lifelines

Depending on their type and function, critical facilities and infrastructure can also be affected by extreme heat. Interruptions in power caused by extreme heat can lead to system failures. Schools without air conditioning may have to close or operate on a reduced schedule.

Community lifelines are likely to be affected to some degree by extreme heat events. Impacts to these lifelines include:

- **Safety and Security** – Police and fire personnel may see additional demand during periods of extreme heat. This may also cause emergency responders to be exposed to the effects of higher heat.
- **Food, Hydration, Shelter** – Water distribution may need to occur during extreme heat events. Cooling centers and other public shelters will need to be open and staffed.
- **Health and Medical** – Heat stroke and exhaustion may occur with greater frequency. This can cause EMS and medical personnel to have a large influx of those needing medical attention.
- **Energy** – Power outages can occur in extreme heat situations. Power outages during extreme heat can cause air conditioning systems to go offline, causing injuries or deaths. PSPS events can also occur during times of extreme heat, causing the electric grid to temporarily go offline.
- **Communication**s – Communication infrastructure may be impacted during extreme heat events. Alert warnings and messages may need to be given to the general public. These systems can be temporarily overloaded during emergency events. They also could be affected during related power outages. Communications and IT equipment located inside these facilities may also be at risk to extreme heat.
- **Water Systems** – Water and wastewater systems can be taxed during extreme heat events.

While community lifelines can be affected by extreme heat events, they are not likely to be overwhelmed with the exception of the power grid. As discussed above, extreme heat can contribute to power interruptions and outages that can lead to additional impacts and concerns. Backup power sources should be in place to keep critical facilities and community lifelines online and functioning.

Natural, Historic, and Cultural Resources

Park areas and natural resource assets in the Tri-City Planning Area may be vulnerable during periods of extreme heat. These include turfed areas; landscapes, trees, wildlife and habitat areas, and wetlands and marsh lands. Recently, trees were lost in areas of the Tri-City Planning Area that were weakened by drought and extreme heat. Extreme heat may also cause drought-like conditions, contributing to other issues. For example, several weeks of extreme heat increases evapotranspiration and reduces moisture content in vegetation, leading to higher wildfire vulnerability in the region for that time period, even if the rest of the season is relatively moist. Historic and cultural resources are not expected to be affected by extreme heat.

Economic Assets and Community Activities of Value

Most economic assets within the Tri-City Planning Area are not vulnerable to extreme heat events. However, during periods of extreme heat, the economy may slow as people stay home or inside. Commercial business revenue, including taxable shopping revenue may be lost during periods of extreme heat. Additionally, extreme heat causes power costs borne by individuals and businesses in the Planning Area to increase, which reduces the amount of money available to circulate inside the local economy. Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors.

Impacts from Severe Weather: Extreme Heat

The Tri-City Planning Area experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-110°F in rather extreme situations. During these times, drought conditions may worsen and the Planning Area may see an increase in dry fuels contributing to wildfires. Also, power outage and PSPS events may occur during these times as well. Health issues are the primary concern with this hazard with vulnerable populations at greater risk, although economic impacts can also be an issue. Air quality can also be an issue during extreme heat.

Extreme heat may also cause drought-like conditions. For example, several weeks of extreme heat increases evapotranspiration and reduces moisture content in vegetation, leading to higher wildfire vulnerability for that time period even if the rest of the season is relatively moist. Drought is discussed further in Section 4.3.9 and wildfire in Section 4.3.17. Extreme heat can also contribute to initiation of PSPS events.

Future Development

How extreme heat is taken into account in future development in each of the jurisdictions of the Tri-City Planning area will differ. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.4. Severe Weather: Heavy Rains and Storms

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Storms in the Tri-City Planning Area are generally characterized by heavy rain often accompanied by strong winds and infrequent lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the Planning Area falls mainly in the fall, winter, and spring months. Winter storms in the form of snow are very rare in in the Planning Area.

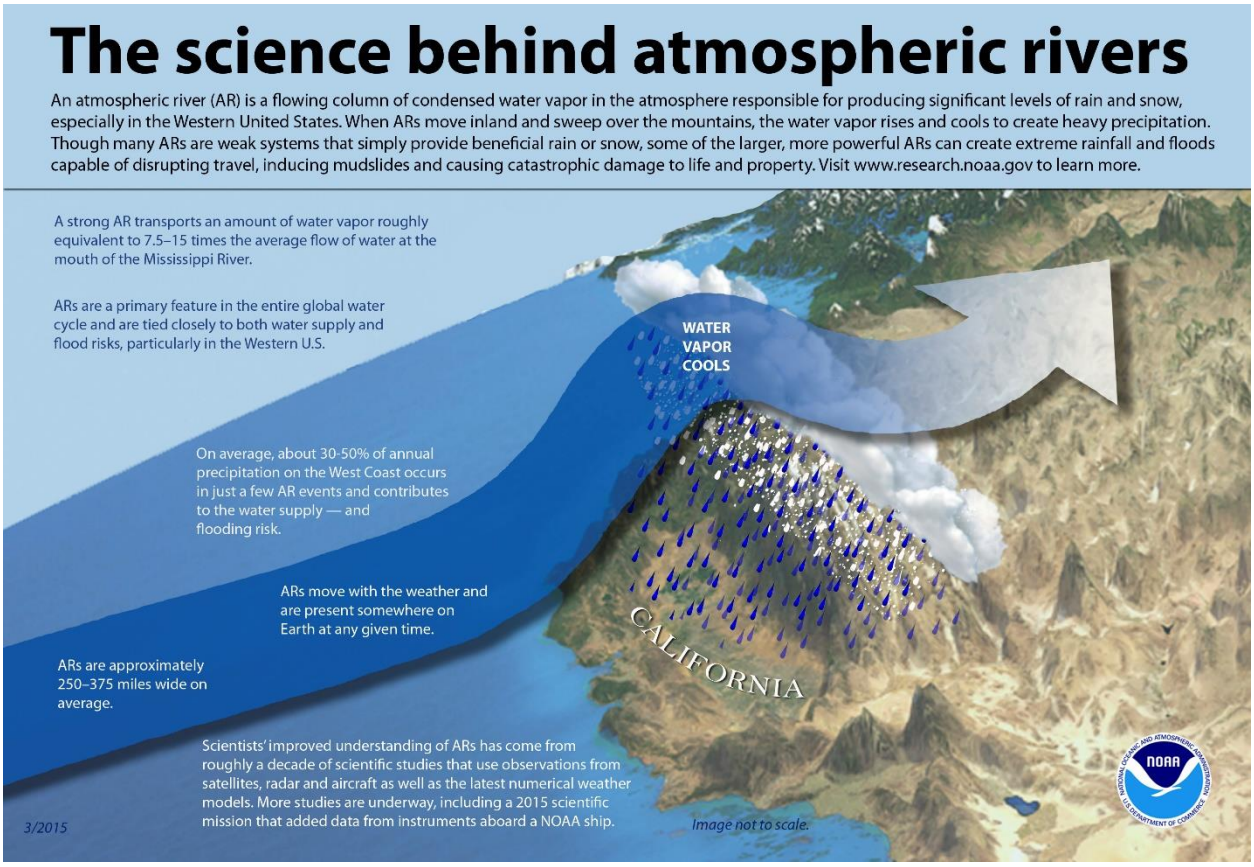
Heavy Rain and Storms

The NWS reports that storms and thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As the warm, moist air moves upward, it cools, condenses, and forms cumulonimbus clouds that can reach heights of greater than 35,000 ft. As the rising air reaches its dew point, water droplets and ice form and begin falling the long distance through the clouds towards earth's surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at Earth's surface and causes strong winds associated with thunderstorms.

Special Types of Heavy Rain

The Tri-City Planning Area and much of Northern California can be affected by a phenomenon known as an atmospheric river. According to the NOAA, atmospheric rivers are relatively long, narrow regions in the atmosphere – like rivers in the sky – that transport most of the water vapor outside of the tropics. These columns of vapor move with the weather, carrying an amount of water vapor roughly equivalent to the average flow of water at the mouth of the Mississippi River. When the atmospheric rivers make landfall, they often release this water vapor in the form of rain or snow. This can be seen in Figure 4-21.

Figure 4-21 Atmospheric Rivers



Source: NOAA

Although atmospheric rivers come in many shapes and sizes, those that contain the largest amounts of water vapor and the strongest winds can create extreme rainfall and floods, often by stalling over watersheds vulnerable to flooding. These events can disrupt travel, induce mudslides and cause catastrophic damage to life and property. A well-known example is the "Pineapple Express," a strong atmospheric river that is capable of bringing moisture from the tropics near Hawaii over to the U.S. West Coast.

Not all atmospheric rivers cause damage; most are weak systems that often provide beneficial rain or snow that is crucial to the water supply. Atmospheric rivers are a key feature in the global water cycle and are closely tied to both water supply and flood risks — particularly in the western United States.

While atmospheric rivers are responsible for great quantities of rain that can produce flooding, they also contribute to beneficial increases in snowpack. A series of atmospheric rivers fueled the strong winter storms that battered the U.S. West Coast from western Washington to southern California from Dec. 10–22, 2010, producing 11 to 25 inches of rain in certain areas. These rivers also contributed to the snowpack in the Sierras, which received 75 percent of its annual snow by Dec. 22, the first full day of winter. This happened again in the winter of 2017/, as well as in the winters of 2022/2023 and 2023/2024.

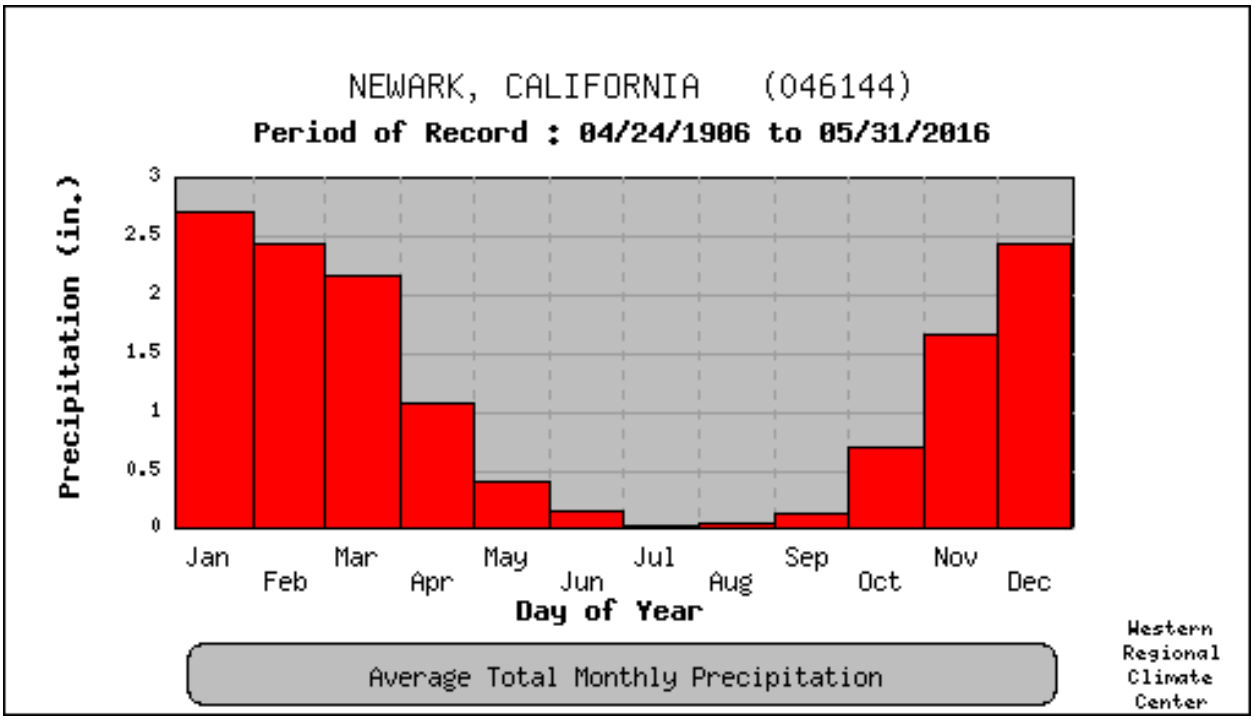
Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the Tri-City Planning Area. All portions of the Planning Area are at risk to heavy rains. Most of these rains occur during the winter months, as discussed below. There is no scale by which heavy rain and storms are measured. Thunderstorms and hail are rare in the Planning Area. Lightning, while also somewhat rare during storm events, does occur on an infrequent basis. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of heavy rain and storms in California is often short, ranging from minutes to hours. The WRCC maintains data on weather normal and extremes in the western United States. WRCC and NWS data for the Planning Area is summarized below. WRCC data goes further back in time (with a period of record from 1906 to 2016), while the NWS data is more recent (with a period of record from 1991 to 2022). The use of both datasets gives a more comprehensive look at weather normal and extremes.

City of Newark Weather Station, Period of Record 1906 to 2016

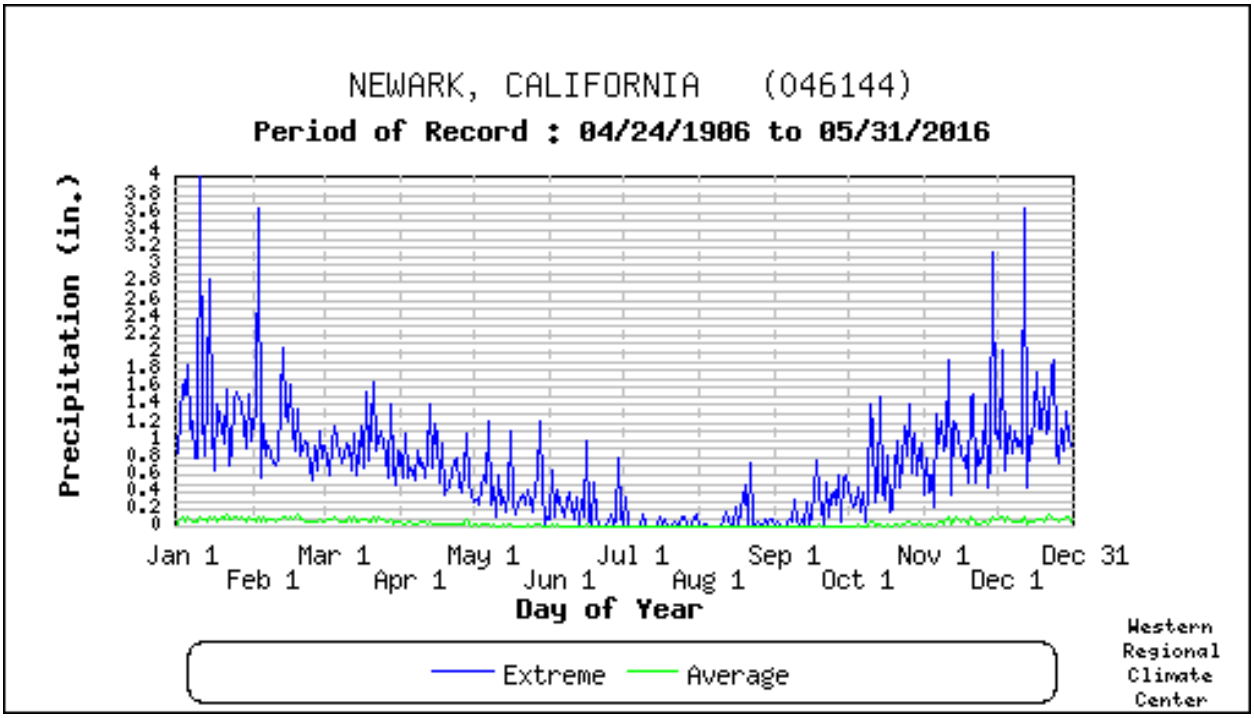
According to the WRCC, average annual precipitation in the Planning Area is 14.31 inches per year. The highest recorded annual precipitation is 31.52 inches in 1983; the highest recorded precipitation for a 24-hour period is 13.67 inches on March 1, 1907. The lowest recorded annual precipitation was 6.89 inches in 1959. Average monthly precipitation for the Planning Area is shown in Figure 4-22. Daily average and extreme precipitations are shown in Figure 4-23. NWS precipitation was shown on Figure 4-18.

Figure 4-22 Tri-City Planning Area – Monthly Average Total Precipitation



Source: Western Regional Climate Center, www.wrcc.dri.edu/. Retrieved 4/26/2023.

Figure 4-23 Tri-City Planning Area – Daily Average and Extreme Precipitation

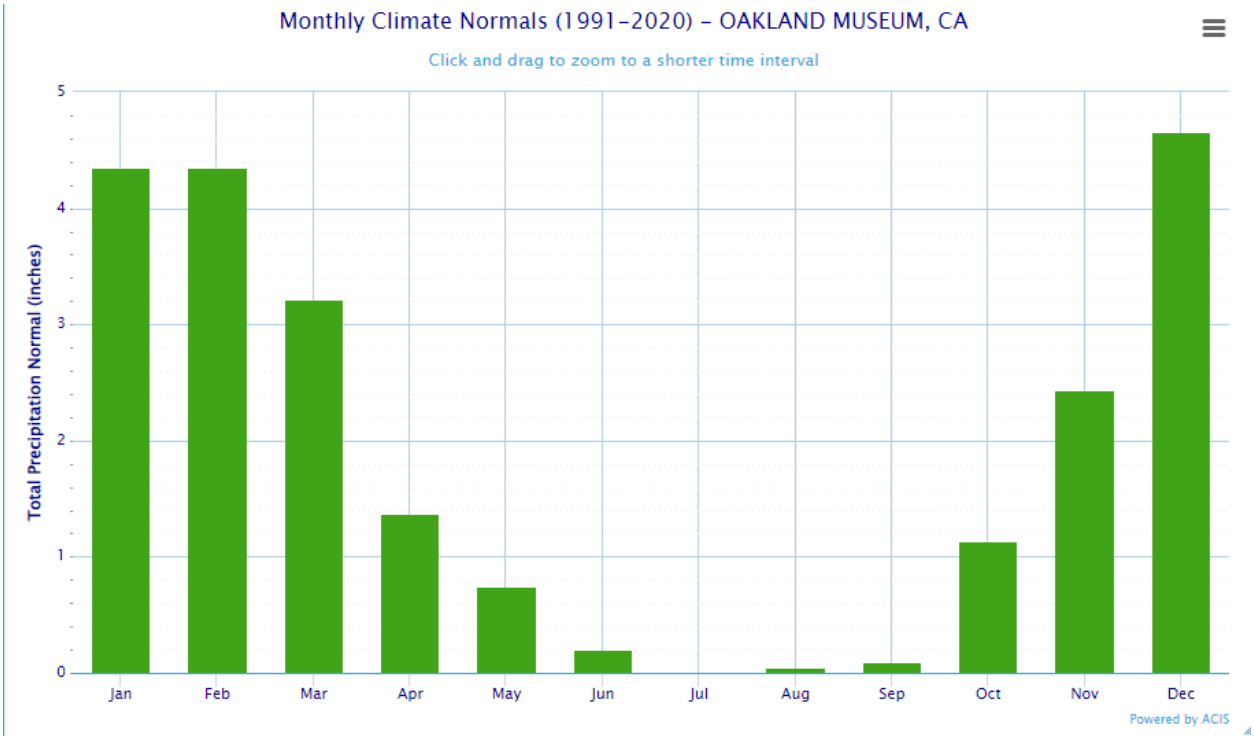


Source: Western Regional Climate Center, www.wrcc.dri.edu/. Retrieved 4/26/2023.

Tri-City Planning Area – Oakland Museum NWS Station

According to the NWS, the Tri-City Planning Area sees 22.61 inches per year of precipitation at the Oakland Museum Station. Most rainfall occurs between October and April. Figure 4-24 shows the monthly precipitation averages for the Planning Area.

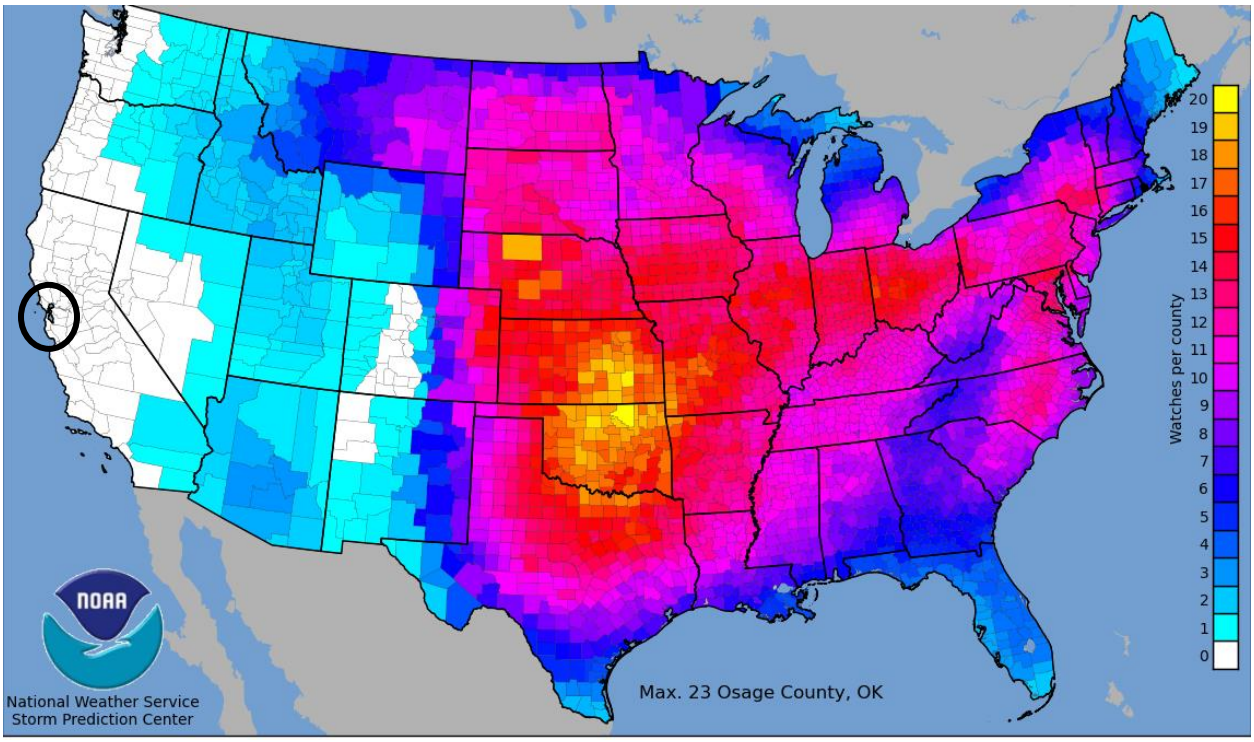
Figure 4-24 Tri-City Planning Area— Precipitation Averages 1991-2020



Source: National Weather Service XMAC site. Retrieved 4/26/2023.

The NOAA Storm Prediction Center tracks thunderstorm watches in the United States on a county basis. Figure 4-25 shows thunderstorm watches in the Planning Area and the United States for a 20-year period between 1993 and 2012. Though dated 2012, this is the most recent version of this map.

Figure 4-25 Tri-City Planning Area– Average Thunderstorm Watches per Year (1993 to 2012)



Source: NOAA Storm Prediction Center. Retrieved on 5/2/2023

Hail

Hail events in the Planning Area are rare; however, hail can occur throughout the Planning Area during storm events. Hail is formed when water droplets freeze and thaw as they are thrown high into the upper atmosphere by the violent internal forces of thunderstorms. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 miles per hour (mph). Severe hailstorms can be quite destructive, causing damage to roofs, buildings, automobiles, vegetation, and crops.

Location and Extent of Hail

While rare, hail events can occur in any location of the Trio-City Planning Area. All portions of the Planning Area are at risk to hail. There is no scale in which to measure hail, other than hail stone size. The National Weather Service classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 4-23 indicates the hailstone measurements utilized by the National Weather Service.

Table 4-23 Hailstone Measurements

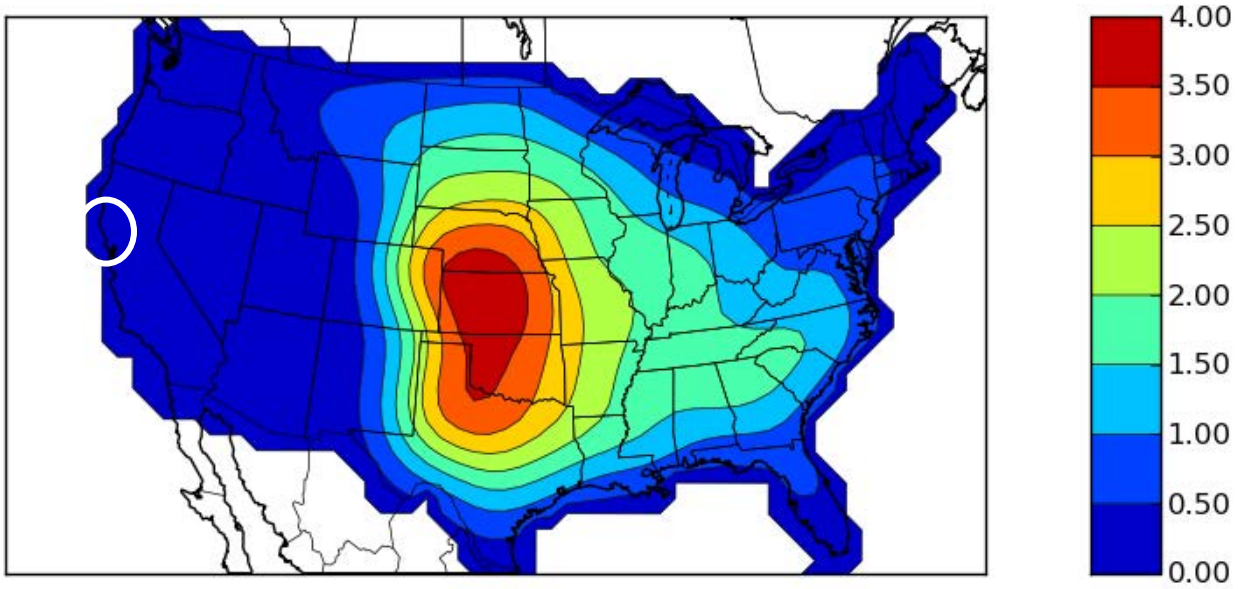
Average Diameter	Corresponding Household Object
.25 inch	Pea
.5 inch	Marble/Mothball
.75 inch	Dime/Penny

Average Diameter	Corresponding Household Object
.875 inch	Nickel
1.0 inch	Quarter
1.5 inch	Ping-pong ball
1.75 inch	Golf-Ball
2.0 inch	Hen Egg
2.5 inch	Tennis Ball
2.75 inch	Baseball
3.00 inch	Teacup
4.00 inch	Grapefruit
4.5 inch	Softball

Source: National Weather Service

The speed of onset of hail can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of thunderstorms that can cause hail in California is often short, ranging from minutes to hours. Hail events last shorter than the duration of the total thunderstorm. The National Weather Service tracks hail events. Figure 4-26 shows the average days each year where hail of greater than 1" in diameter occurred during a 20-year period from 1990 to 2009. As shown in the figure, hail is rare in the Planning Area. Though dated 2009, this is the most recent version of this map.

Figure 4-26 Tri-City Planning Area – Average Hail Days per Year (1990 to 2009)



Source: National Weather Service. Retrieved 5/2/2023.

Lightning

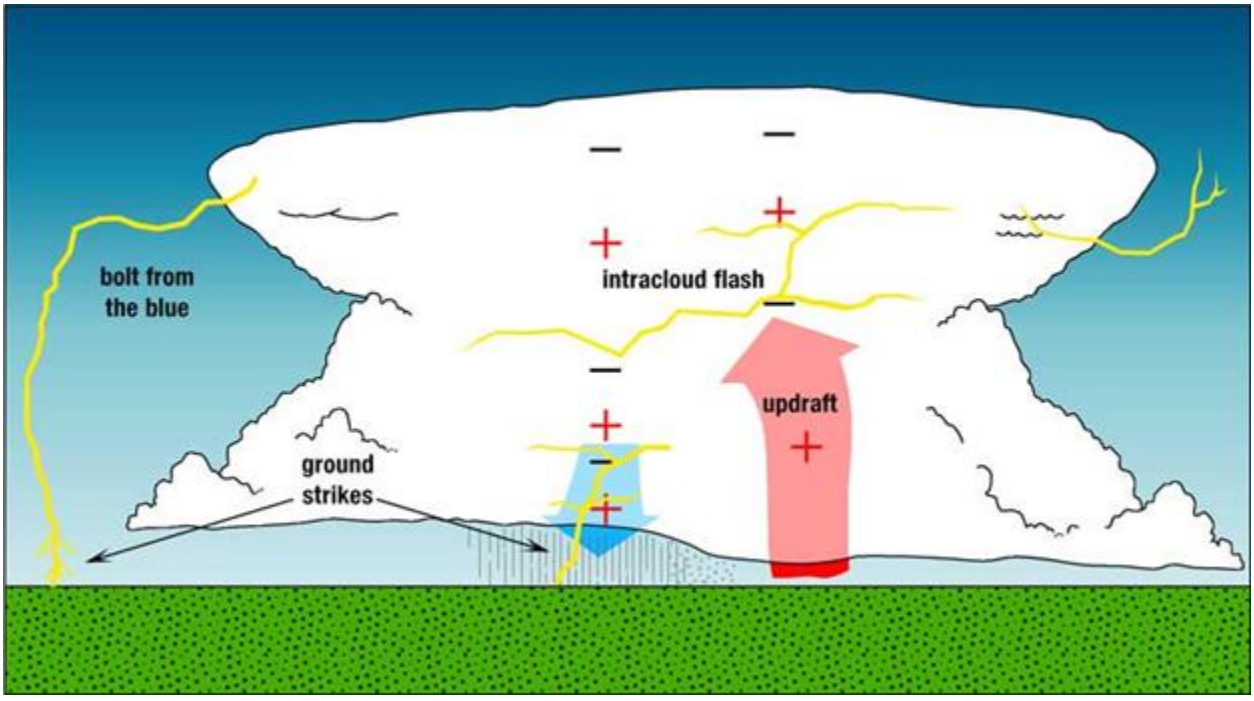
Lightning, while somewhat rare in the Planning Area, can occur throughout the Tri-City Planning Area both during and outside of storm events. Lightning is defined by the NWS as any and all of the various forms of visible electrical discharge caused by thunderstorms. Cloud-to-ground lightning can kill or injure

people by direct or indirect means. Objects can be struck directly, which may result in an explosion, burn, or total destruction. Or, damage may be indirect, when the current passes through or near an object, which generally results in less damage.

Intra-cloud lightning is the most common type of discharge. This occurs between oppositely charged centers within the same cloud. Usually it takes place inside the cloud and looks from the outside of the cloud like a diffuse brightening that flickers. However, the flash may exit the boundary of the cloud, and a bright channel, similar to a cloud-to-ground flash, can be visible for many miles.

Cloud-to-ground lightning is the most damaging and dangerous type of lightning, though it is also less common. Most flashes originate near the lower-negative charge center and deliver negative charge to earth. However, a large minority of flashes carry positive charge to earth. These positive flashes often occur during the dissipating stage of a thunderstorm's life. Positive flashes are also more common as a percentage of total ground strikes during the winter months. This type of lightning is particularly dangerous for several reasons. It frequently strikes away from the rain core, either ahead or behind the thunderstorm. It can strike as far as 5 or 10 miles from the storm in areas that most people do not consider to be a threat (see Figure 4-27). Positive lightning also has a longer duration, so fires are more easily ignited. And, when positive lightning strikes, it usually carries a high peak electrical current, potentially resulting in greater damage.

Figure 4-27 Cloud to Ground Lightning



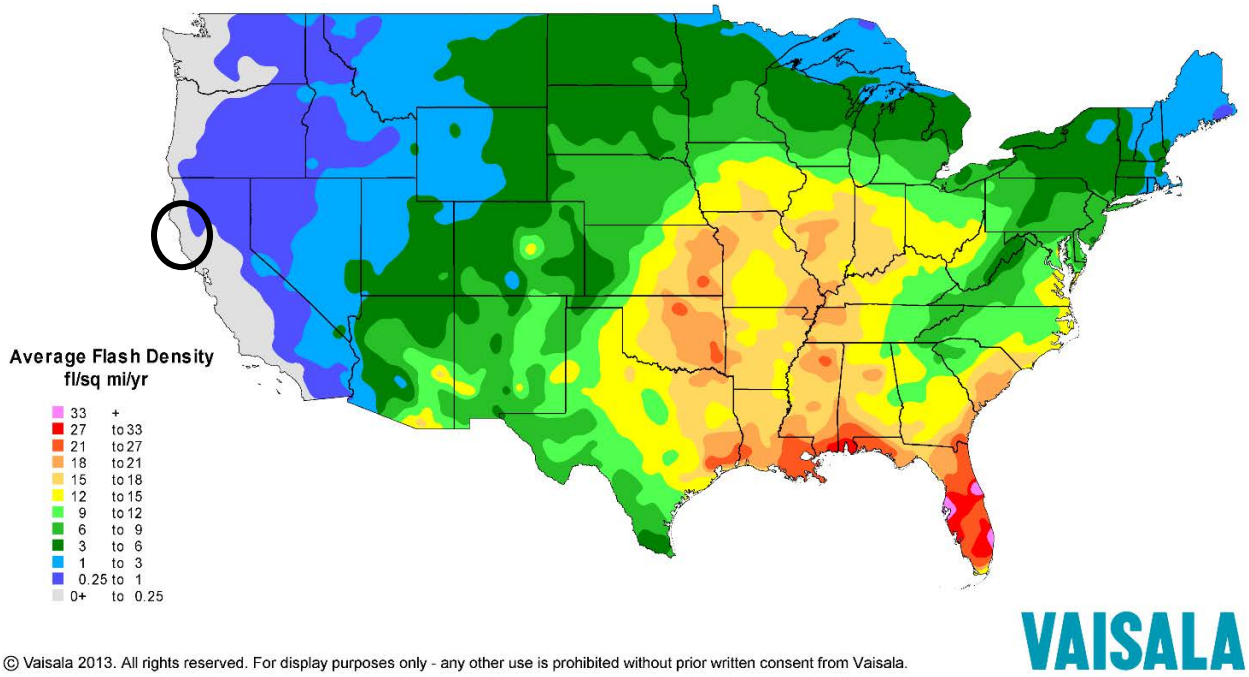
Source: National Weather Service

Location and Extent of Lightning

Lightning events can occur in any location of the Tri-City Planning Area and are often associated with thunderstorms, but also may occur outside of rain, often referred to as dry lightning events. All portions of the Planning Area are at risk to lightning. The speed of onset of thunderstorms (that cause lightning) can

be short, and the duration is often short as well, generally ranging from minutes to hours. Vaisala maintains the National Lightning Detection Network. It tracks cloud to ground lightning incidences in the United States. Figure 4-28 shows lightning incidences in the Planning Area and the rest of the United States from 1997 to 2012. Though dated 2012, this is the most recent version of this map.

Figure 4-28 Tri-City Planning Area – Lightning Incidence Map 1997 to 2012



© Vaisala 2013. All rights reserved. For display purposes only - any other use is prohibited without prior written consent from Vaisala.

Source: Vaisala National Lightning Detection Network. Retrieved 5/2/2023.

Past Occurrences

Disaster Declaration History

A search of FEMA and Cal OES disaster declarations turned up multiple events. Heavy rains and storms have caused flooding in Alameda County. Events where heavy rain and storms (including the resultant flooding) resulted in a state or federal disaster declaration are shown in Table 4-24.

Table 4-24 Alameda County – Disaster Declarations from Heavy Rain and Storms 1950-2023

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	20	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (three)

Source: FEMA, Cal OES

NCDC Events

The NCDC data recorded 85 coastal flood, flash flood, flood, hail, heavy rain, high surf, and lightning incidents for Alameda County since 1955, respectively. Many of these events also affected the Tri-City Planning Area. A summary of these events is shown in Table 4-25.

*Table 4-25 Alameda County NCDC Heavy Rain and Storm Events 1/1/1955-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Coastal Flood	3	0	0	0	0	$0	$0
Flash Flood	12	0	0	0	0	$100,000	$0
Flood	43	0	0	0	0	$44,325,500	$0
Hail	14	0	0	0	0	$0	$0
Heavy Rain	5	0	2	0	1	$60,000	$30,000
High Surf	1	0	0	0	0	$0	$0
Heavy Snow	1	0	0	0	0	$0	$0
Winter Storm	6	0	0	0	0	$0	$0
Total	**85**	**0**	**2**	**0**	**1**	**$44,485,500**	**$30,000**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

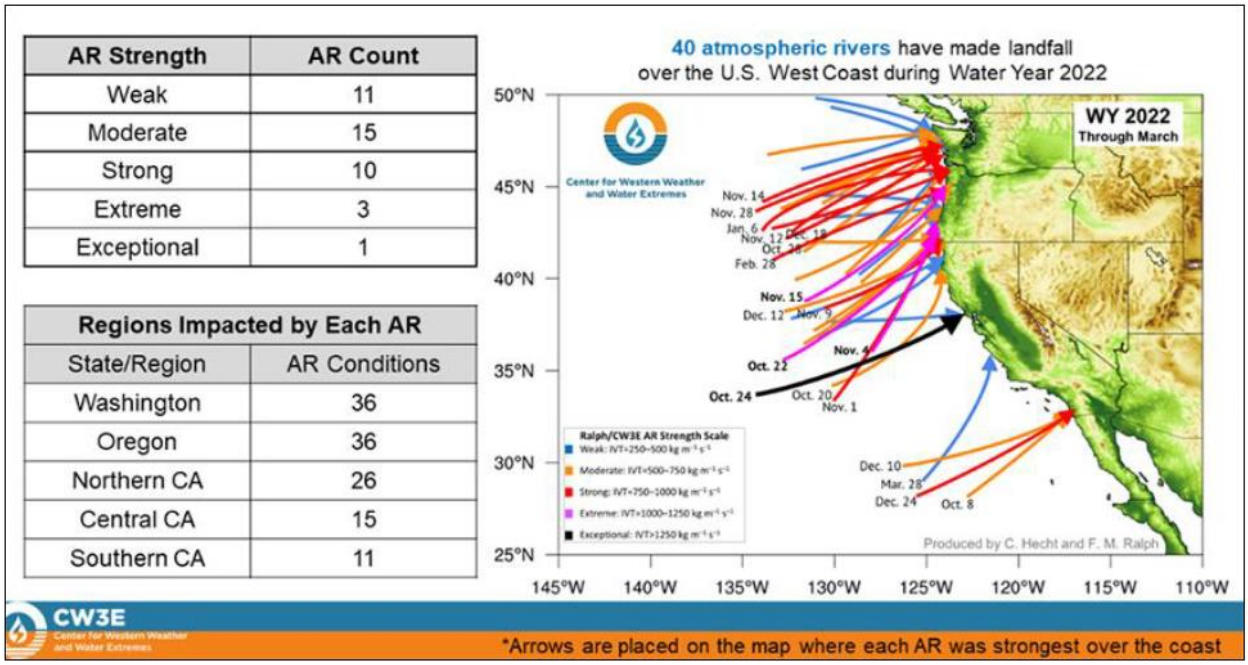
Planning Committee Events

A special type of heavy rain that can affect the Tri-City Planning Area is known as atmospheric river rains. Atmospheric rivers can be weak to exceptional in strength. An example of this is shown in Figure 4-29. These are from the winter of 2022/2023.

Figure 4-29 2022 Atmospheric Rivers by Strength and Count

AR Strength	AR Count
Weak	11
Moderate	15
Strong	10
Extreme	3
Exceptional	1

Regions Impacted by Each AR	
State/Region	AR Conditions
Washington	36
Oregon	36
Northern CA	26
Central CA	15
Southern CA	11



Source: CW3E

The Planning Committee noted that there are annual events of heavy rains and storms causing issues in the Planning Area. These are discussed in the Flood (Section 4.3.11) Localized Flood (Section 4.3.12), and Landslide (Section 4.3.13) past occurrences. In 2020, a lightning siege caused multiple fires in the area surrounding the Planning Area, which burned over 6,900 acres. During this event, the resulting smoke caused significant visibility issues. This is discussed in greater detail in the Past Occurrences section in Wildfire (under Planning Committee events in Section 4.3.17) below. More specific past occurrences can be found in each jurisdiction's respective annex to this LHMP Update.

Likelihood of Future Occurrences

Highly Likely – Based on NCDC data and Planning Committee input, 85 coastal flood, flash flood, flood, hail, heavy rain, high surf, and lightning incidents over a 72-year period (1955-2022) equates to a severe storm event every year. As noted, this database likely doesn't capture all heavy rain, hail, lightning, and severe storm events. Severe weather, including heavy rains and storms, is a well-documented seasonal occurrence that will continue to occur often in the Tri-City Planning Area.

Climate Change and Heavy Rains and Storms

According to the 2021 CAS, while average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. However, it is unlikely that hail will become more common in the Planning Area. The amount of lightning is not projected to change.

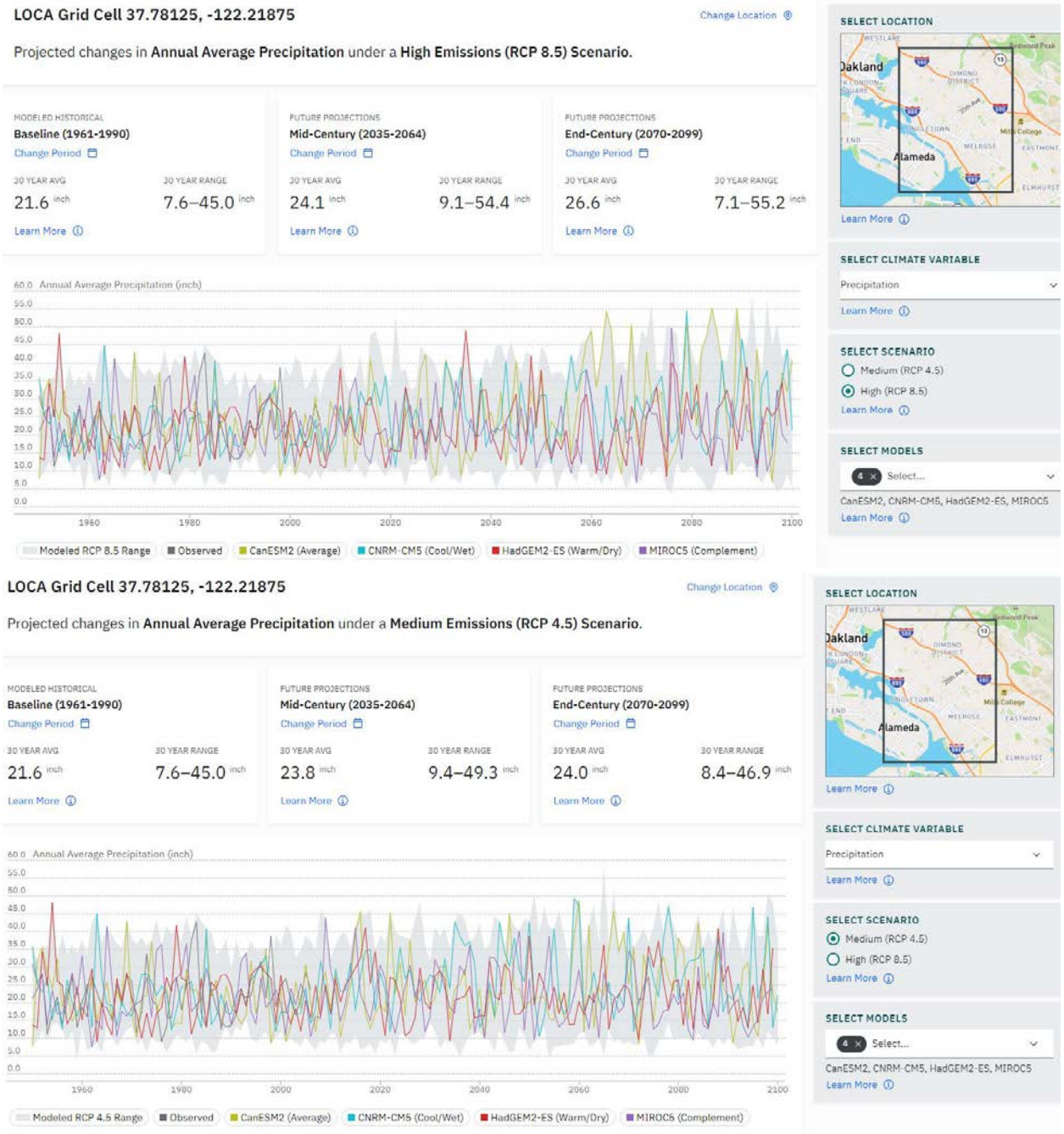
Cal-Adapt noted that, on average, the projections show little change in total annual precipitation in California. Furthermore, among several models, precipitation projections do not show a consistent trend

during the next century. The Mediterranean seasonal precipitation pattern is expected to continue, with most precipitation falling during winter from North Pacific storms. One of the four climate models projects slightly wetter winters, and another projects slightly drier winters with a 10 to 20 percent decrease in total annual precipitation. However, even modest changes would have a significant impact because California ecosystems are conditioned to historical precipitation levels and water resources are nearly fully utilized. Future precipitation estimates for the Planning Area are shown in Figure 4-30, which consists of two charts:

- The upper chart shows annual averages of observed and projected precipitation values for the selected area on the map under the RCP 8.5 scenario. The gray line (1950 – 2005) is observed data. The colored lines (2006 – 2100) are projections from 10 LOCA downscaled climate models selected for California. The light gray band in the background shows the least and highest annual average values from all 32 LOCA downscaled climate models.
- The lower chart shows annual averages of observed and projected precipitation values for the selected area on map under the RCP 4.5 scenario. The gray line (1950 – 2005) is observed data. The colored lines (2006 – 2100) are projections from 10 LOCA downscaled climate models selected for California. The light gray band in the background shows the least and highest annual average values from all 32 LOCA downscaled climate models.

These models have been selected by California state agencies as priority models for research contributing to California's Fourth Climate Change Assessment.

Figure 4-30 Tri-City Planning Area – Future Precipitation Estimates in High and Low Emission Scenarios



Source: Cal-Adapt. Retrieved 5/2/2023.

Vulnerability Assessment

Vulnerability—Medium

According to historical hazard data, heavy rains and storms, including lightning, are an annual occurrence in the Tri-City Planning Area. Heavy rains can cause both localized flooding and flooding in the

floodplains. Atmospheric river storms are of great concern as they can dump large amounts of water in single storms, or in back-to-back storms as seen above in 2022, in the winter storms of 2022/2023, as well as the winter storms of 2023/2024. Impacts can be felt by both the population of the Planning Area as well as the structures that have been built in the Planning Area.

The whole of the Tri-City Planning Area is at some measure of vulnerability to heavy rain and storms. An assessment of a community's vulnerability to heavy rains and storms begins with an understanding of local exposure to heavy rain and storms. This is included in the discussion of the Assets at Risk to this hazard.

Assets at Risk

Assets at risk from heavy rain and storms include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All populations in the Tri-City Planning Area have some measure of risk to heavy rains and storms. Those populations that work or recreate outside and unhoused individuals are more vulnerable to impacts from heavy storm events. Heavy rains and storms occur every year and do not generally cause significant adverse impacts to individuals; it is the secondary hazard, flooding, that poses the biggest impact to people. Populations at risk to flooding resulting from heavy rains and storm events include those who live in floodplains (discussed in further detail in the Flood: 1%/0.2% Annual Chance in Section 4.3.11) and those who live in and near localized flooding areas floodplains (discussed in further detail in the Flood: Localized Stormwater Flooding in Section 4.3.12).

Structures

Structures in the Tri-City Planning Area have some risk to heavy rains and storms. Structures built to modern building codes are built to withstand heavy rains and storms (including thunderstorm winds and lightning). During a heavy storm, localized flooding may cause water intrusion into buildings from the outside. Trees can be downed causing impacts to structures. Older homes and buildings may be at increased risk to heavy rains and storms. Power outages during severe storm events can occur, impacting the use of structures until the power is back online.

Critical Facilities and Infrastructure, and Community Lifelines

Heavy rain and storms can affect critical facilities and infrastructure, and community lifelines during large events. Power outages may occur taking facilities offline. High winds can down power lines and trees impacting facilities. Water intrusion into facilities and infrastructure can impact operations. Local roads, streets, and bridges can be impacted resulting in closures restricting traffic flow in the Planning Area. In certain areas, large storms can cause erosion and localized landslides which can impact affected facilities. Many critical facilities are built to modern design standards that take heavy rains and storms into account

when siting and building these structures, and others may need to be retrofitted to better withstand these events.

Community lifelines likely to have some vulnerability to heavy rains and storms include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of heavy rains and flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies taxing these resources.
- **Food, Hydration and Shelter** – Those displaced by heavy rains and flooding and the unsheltered may have needs for food and water.
- **Health and Medical** – Injuries can occur during storm events. Patient movement from accident scenes by EMS may have to be rerouted around inundated and closed streets. Public health can be at risk from contaminated floodwaters caused by heavy rains.
- **Energy** –Significant storms can cause power outages throughout the Planning Area. Downed trees can fall on electric lines in the Planning Area, causing power outages. High winds and other lightning strikes can cause transformers and other infrastructure to be damaged. Fuel supplies can be temporarily cut off, until flooding subsides.
- **Communications** – Communication systems may be damaged during severe storm events. An influx of service calls to dispatch centers for reporting of flooding, power outages, downed trees, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about road and closures, washouts, and debris or flooding on roads.
- **Transportation** – Highways, local roads, and bridges may be impacted by heavy rains and flooding causing road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents.
- **Hazardous Material** – Hazardous material facilities can be affected by heavy rains and flooding. Releases during these times can contaminate the environment, affecting drinking water and natural systems.
- **Water Systems** – Water, drainage, and wastewater systems can experience storm related impacts, including excessive water intrusion which can affect the operations of these systems.

Short-term, heavy rains and storms can cause both widespread flooding as well as extensive localized drainage issues throughout the Tri-City Planning Area. As storms continue to increase in intensity, existing drainage and stormwater systems may be overwhelmed at least temporarily contributing to an increase in flooding related impacts. While components of these lifelines may be damaged or otherwise impacted, it is unlikely that large storm events would overwhelm and take out any of these lifelines in the Tri-City Planning Area as a whole.

Natural, Historic, and Cultural Resources

Large storm events and associated flooding can affect natural, historic, and cultural resources. Silt and sediment can damage natural areas. Trees can be uprooted and downed by high winds. Extended periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. While some natural systems can be adversely impacted during these large storms, heavy rain events can also provide benefits. Groundwater and wetland areas can be recharged and water supplies replenished. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures affected by large storm events, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme storm and flood events.

Economic Assets and Community Activities of Value

Heavy rain and storm events can cause direct damage to economic assets such as businesses and commercial centers. During extreme events, the economy may slow as people stay home or inside. Business revenue may be reduced during extended storm events. Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors. Events may be cancelled or rescheduled.

Impacts from Heavy Rains and Storms

Impacts from heavy rains and storms include damage to property, critical facilities and infrastructure, and the natural landscape. This includes: erosion, downed trees, damaged utility structures and infrastructure; power outages; road damage and blockages; and lightning strikes to critical infrastructure and people. Lightning can also cause wildfires and urban fires to occur. Landslides occur when the soil on slopes becomes oversaturated and fails. Climate change may cause these impacts to worsen.

Actual damage associated with the primary effects of severe storms and heavy rains has been somewhat limited. It is the secondary hazards caused by these severe weather events, such as floods, landslides, and erosion that have had the greatest impact on the Planning Area. The risk and vulnerability associated with these secondary hazards are discussed in other sections of this Plan (Section 4.3.11 Flood: 1%/0.2% Annual Chance, Section 4.3.12 Flood: Localized Stormwater, Section 4.3.8 Dam Failure, Section 4.3.13Landslide, and Section 4.3.14 Levee Failure).

Future Development

Heavy rains and storms are taken into account in future development as discussed in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.5. Severe Weather: High Winds and Tornadoes

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

High Winds

High winds can cause significant property and resource damage, threaten public safety, and have adverse economic impacts from facility closures and power loss. High winds, as defined by the NWS glossary, are sustained wind speeds of 40 mph or greater lasting for 1 hour or longer, or winds of 58 mph or greater for any duration. These winds may occur as part of a seasonal climate pattern or in relation to other severe weather events such as thunderstorms.

Straight-line (i.e., non-tornadic) winds may also exacerbate existing weather conditions by increasing the effect on temperature and decreasing visibility due to the movement of particulate matters through the air, as in dust and snowstorms. The winds may also exacerbate fire conditions by drying out the ground cover, propelling fuel around the region, and increasing the ferocity of exiting fires, as well as contributing to fire weather conditions resulting in red flag days. Winds can push automobiles off roads, damage roofs and structures, cause power outages, and cause secondary damage due to flying debris and hazardous trees.

Location and Extent

The entire Tri-City Planning Area is subject to significant, non-tornadic (straight-line) winds. Each area of the Planning Area is at risk to high winds. Magnitude of winds is measured often in speed and damages. The speed of onset of both thunderstorm winds and high winds outside of thunderstorm events can be short or prolonged, but accurate weather prediction mechanisms often let the public know of upcoming events. Duration of thunderstorm winds in California is often short, ranging from minutes to hours, but can occur for longer periods. The Beaufort scale is an empirical measure that relates wind speed to observed conditions at sea or on land. Its full name is the Beaufort wind force scale. Figure 4-31 shows the Beaufort wind scale.

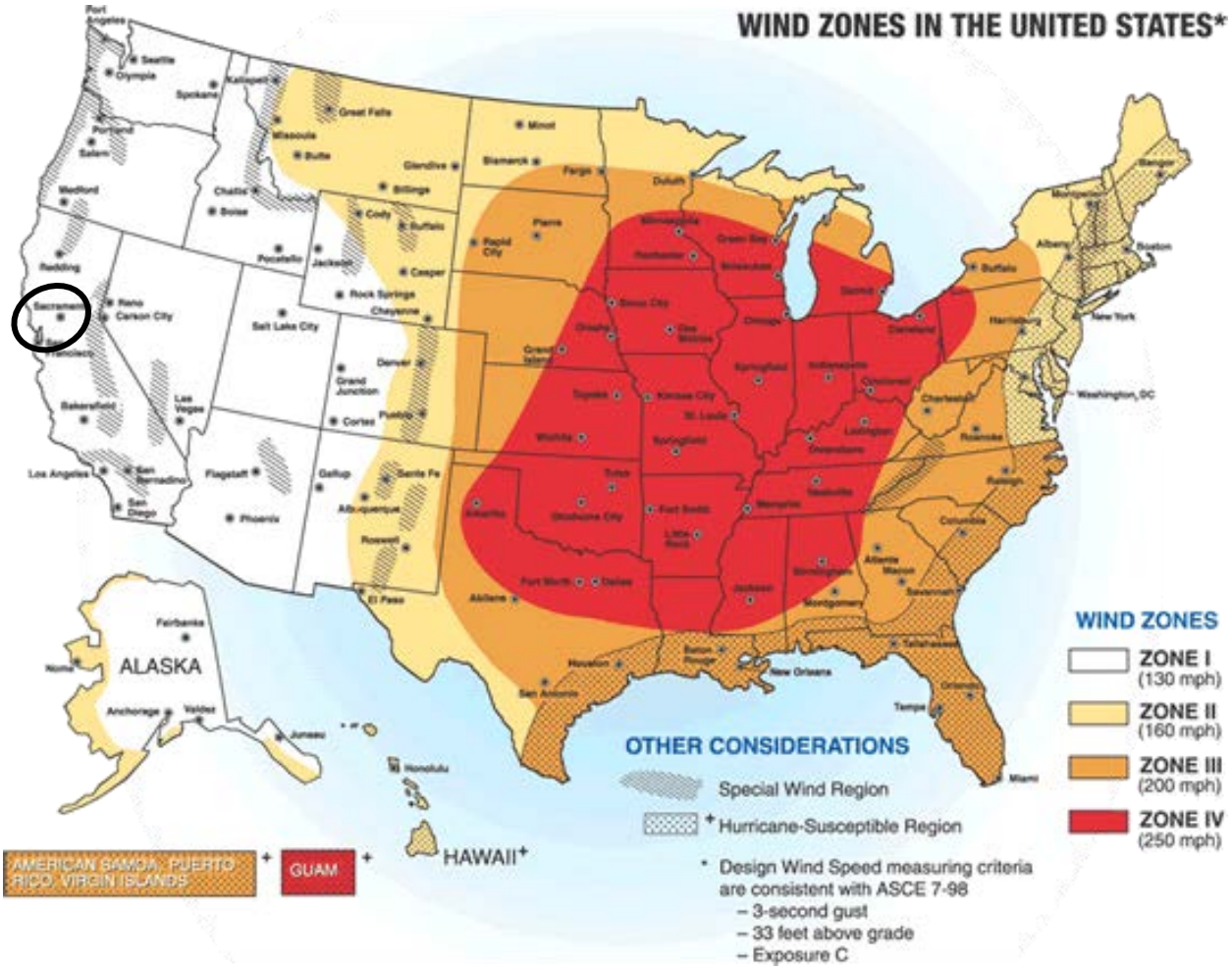
Figure 4-31 Beaufort Wind Scale

Beaufort Number	Wind Speed (miles/hour)	Wind Speed (km/hour)	Wind Speed (knots)	Description	Wind Effects on Land
0	< 1	< 1	< 1	Calm	Calm. Smoke rises vertically.
1	1-3	1-5	1-3	Light Air	Wind motion visible in smoke.
2	4-7	6-11	4-6	Light Breeze	Wind felt on exposed skin. Leaves rustle.
3	8-12	12-19	7-12	Gentle Breeze	Leaves and smaller twigs in constant motion.
4	13-18	20-28	11-16	Moderate Breeze	Dust and loose paper are raised. Small branches begin to move.
5	19-24	29-38	17-21	Fresh Breeze	Small trees begin to sway.
6	25-31	39-49	22-27	Strong Breeze	Large branches are in motion. Whistling is heard in overhead wires. Umbrella use is difficult.
7	32-38	50-61	28-33	Near Gale	Whole trees in motion. Some difficulty experienced walking into the wind.
8	39-46	62-74	34-40	Gale	Twigs and small branches break from trees. Cars veer on road.
9	47-54	75-88	41-47	Strong Gale	Larger branches break from trees. Light structural damage.
10	55-63	89-102	48-55	Storm	Trees broken and uprooted. Considerable structural damage.
11	64-72	103-117	56-63	Violent Storm	Widespread damage to structures and vegetation.
12	> 73	> 117	> 64	Hurricane	Considerable and widespread damage to structures and vegetation. Violence.

Source: National Weather Service

Figure 4-32 depicts wind zones for the United States. The map denotes that the Tri-City Planning Area falls into Zone I, which is characterized by high winds of up to 130 mph (above Beaufort Number 12).

Figure 4-32 Wind Zones in the United States



Source: FEMA

Diablo Winds

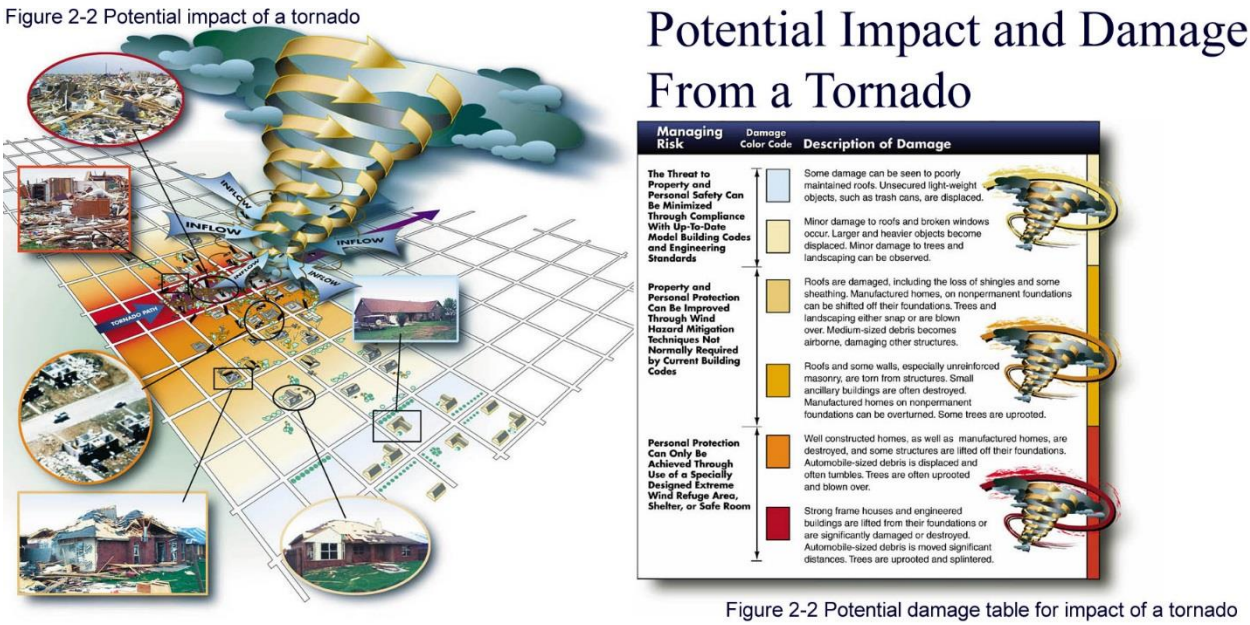
Though not included on the map above as a special wind region, the Tri-City Planning Area did note that they are subject to diablo winds on a seasonal basis. Diablo wind is a name that is often used for the hot, dry wind from the northeast that typically occurs in the San Francisco Bay Area of Northern California, during the spring and fall. The Diablo wind is created by the combination of strong inland high pressure at the surface, strongly sinking air aloft, and lower pressure off the California coast. The air descending from aloft as well as from the Coast Ranges compresses as it sinks to sea level where it warms as much as 20°F and loses relative humidity. While the Diablo wind pattern occurs in both the spring and fall, it is most dangerous in the fall, when vegetation is at its driest such as what occurred during the devastating 1991 Tunnel Fire.

Tornadoes

Tornadoes and funnel clouds can also occur during severe storms events. Tornadoes are another severe weather hazard that, though rare in the East Bay, can affect anywhere within the Tri-City Planning Area,

primarily during the storm season in the late fall, winter, and early spring. Tornadoes form when cool, dry air sits on top of warm, moist air. Tornadoes are rotating columns of air marked by a funnel-shaped downward extension of a cumulonimbus cloud whirling at destructive speeds of up to 300 mph, usually accompanying a thunderstorm. Tornadoes are the most powerful storms that exist. They can have the same pressure differential across a path only 300 yards wide or less as 300-mile-wide hurricanes. Figure 4-33 illustrates the potential impact and damage from a tornado.

Figure 4-33 Potential Impact and Damage from a Tornado



Source: FEMA: Building Performance Assessment: Oklahoma and Kansas Tornadoes

Location and Extent

Tornadoes, while rare, can occur in any part of the Tri-City Planning Area. Prior to February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita scale. Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. Table 4-26 shows the wind speeds associated with the original Fujita scale ratings and the damage that could result at different levels of intensity. Table 4-27 shows the wind speeds associated with the Enhanced Fujita Scale ratings.

Table 4-26 Original Fujita Scale

Fujita (F) Scale	Fujita Scale Wind Estimate (mph)	Typical Damage
F0	< 73	Light damage. Some damage to chimneys; branches broken off trees; shallow-rooted trees pushed over; sign boards damaged.
F1	73-112	Moderate damage. Peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos blown off roads.

Fujita (F) Scale	Fujita Scale Wind Estimate (mph)	Typical Damage
F2	113-157	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars overturned; large trees snapped or uprooted; light-object missiles generated; cars lifted off ground.
F3	158-206	Severe damage. Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted; heavy cars lifted off the ground and thrown.
F4	207-260	Devastating damage. Well-constructed houses leveled; structures with weak foundations blown away some distance; cars thrown, and large missiles generated.
F5	261-318	Incredible damage. Strong frame houses leveled off foundations and swept away; automobile-sized missiles fly through the air in excess of 100 meters (109 yards); trees debarked; incredible phenomena will occur.

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/f-scale.html

Table 4-27 Enhanced Fujita Scale

Enhanced Fujita (EF) Scale	Enhanced Fujita Scale Wind Estimate (mph)
EF0	65-85
EF1	86-110
EF2	111-135
EF3	136-165
EF4	166-200
EF5	Over 200

Source: National Oceanic and Atmospheric Administration Storm Prediction Center, www.spc.noaa.gov/faq/tornado/ef-scale.html

It is difficult to predict a tornado or the conditions that preclude a tornado far in advance. Tornadoes can strike quickly with very little warning. In California it is rare for tornadoes to exceed an EF3 magnitude. Most tornadoes that touch down are not long lived and cause limited damages.

Past Occurrences

Disaster Declaration History

There have been no past federal or state disaster declarations due to high winds or tornadoes, as detailed in Table 4-5.

NCDC Events

The NCDC data recorded 358 high wind incidents for Alameda County since 1955. This includes 5 (all F0) tornado events in Alameda County. A summary of these events is shown in Table 4-28.

*Table 4-28 Alameda County NCDC High Wind and Tornado Events 1/1/1950-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
High Wind	88	1	0	1	0	$3,210,000	$0
Strong Wind	263	4	0	8	0	$3,753,800	$0
Thunderstorm Wind	2	0	0	0	0	$50,000	$0
Tornado	5	0	0	0	0	$275,000	$0
Total	**358**	**5**	**0**	**9**	**0**	**$7,288,800**	**$ 0**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning area and outside of Alameda County.

Planning Committee Events

The Planning Committee noted that high wind events are a common occurrence throughout the Planning Area. They further indicated that some of the most severe high wind events occur outside of storms. These high winds, including the local Diablo type winds, contribute to the potential for catastrophic wildfires as seen in the 1991 Tunnel Fire. It is often high winds, in conjunction with heat and low humidity and compounded by drought conditions, that cause wildfire risk in the Planning Area to increase. These conditions can also cause red flag days and PSPS events in the Planning Area as previously described. More specific past occurrences can be found in each jurisdiction's respective annex to this LHMP Update.

Likelihood of Future Occurrences

Highly Likely – Based on NCDC data and Planning Committee input, 358 wind incidents over a 67-year period (1955-2022) equates to a severe wind event every year. High winds are a well-documented seasonal occurrence that will continue to occur annually in the Tri-City Planning Area.

Climate Change and High Winds

According to the 2021 CAS, while average annual rainfall may increase or decrease slightly, the intensity of individual thunderstorm events is likely to increase during the 21st century. This may bring stronger thunderstorm winds. The CAS does not discuss non-thunderstorm winds or tornadoes.

Vulnerability Assessment

Vulnerability—Medium

The Tri-City Planning Area is subject to potentially destructive high winds and tornadoes. Regional Diablo winds are a significant concern. High winds are common throughout the area and can happen during most times of the entire year and outside of a severe storm event. Tornadoes are rare. High winds and tornadoes can be a significant public safety and economic concern.

Vulnerability of the community is discussed in multiple sections that detail how this hazard can affect the Planning Area. These sections include assets at risk, impacts, and how future development can be affected by this hazard.

Assets at Risk

Assets at risk from winds and tornadoes include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All populations are at some vulnerability to high winds and tornadoes. Certain vulnerable populations are at the greatest risk to the effects of high winds and tornadoes. These include:

- The unsheltered.
- Citizens who reside in mobile homes.
- Citizens in buildings with no tornado shelter or below ground floors.
- Those with access and functional needs.
- Those working or caught outdoors during a wind or tornado event.

Structures

All structures in the Tri-City Planning Area have some measure of risk from high wind and tornadoes. Though most structures are built to withstand winds, Diablo wind speeds can still cause damages in the Planning Area. Though rare, a tornado could cause damage to virtually all facilities in the tornado touchdown path. This would affect homes, businesses, commercial property, as well as government and critical facilities. During a wind or tornado event, power lines in the Planning Area can be damaged by falling trees caused by wind. A tornado could also damage power lines. High winds are a cause for PSPS events to be declared, causing power outages to occur. High winds and tornadoes could cause sparks from electric wires and other sources, which could lead to wildfire ignition. Once ignited, high winds can also cause wildfires to rapidly spread and become out of control. High wind conditions can cause wildfires to move into more urban areas destroying structures and whole subdivisions, as seen in recent wildfire events in the West.

Critical Facilities and Infrastructure, and Community Lifelines

Though most critical facilities are built to withstand winds, diablo and other type wind speeds can still cause damage in the Tri-City Planning Area. Though rare, a tornado could cause damage to virtually all facilities in the tornado touchdown path. Winds can cause PSPS events and lead to out of control wildfires, which can damage critical facilities and impact their abilities to perform their critical roles in the community.

Community lifelines likely to have some vulnerability from wind and tornado include:

- **Safety and Security** – Winds and tornadoes can increase fire spread and also lead to down trees and blocked roads, which causes issues for firefighters, police, dispatch, and EMS in the Planning Area.

- **Food, Hydration, Shelter** – Significant damage caused by tornadoes can increase the need for those who need shelter. This is true for the unsheltered populations as well as for those whose homes may be damaged or rendered unusable.
- **Health and Medical** – Winds and tornadoes can cause injuries or deaths to residents. Trees may be downed during these times, causing EMS to need to reroute ambulance or emergency services around areas where roads may be closed while tree materials are removed.
- **Energy** – Downed trees and other wind impacts may cause power grid issues. If a tornado were to strike a power station or large transmission lines, power outages may occur in the Planning Area.
- **Communications** – 911, dispatch, and emergency responder communications see marked increase during times of high winds and tornadoes.
- **Transportation** – Transportation routes may be blocked by downed trees, downed power wires, or downed poles and signs.
- **Hazardous Materials** – Hazardous materials facilities may be compromised during periods of high winds and tornadoes. Trucks carrying hazardous materials may be overturned on roads in the Planning Area during high wind and tornado events.
- **Water Systems** – Above ground water infrastructure may be damaged by high winds and tornadoes.

Backup power sources to these critical facilities that comprise the community lifelines should be in place to reduce possible impacts from these lifelines going offline. During periods of high wind and tornadoes, the electric system could be overwhelmed, causing brownouts and power outages to occur. Power outages and PSPS events can also occur during times of high winds, causing the electric grid to temporarily go offline. It is unlikely that whole lifelines would be overwhelmed by this hazard.

Natural, Historic, and Cultural Resources

Natural resources, such as trees, are vulnerable to winds. Increased levee and streambank erosion can occur during periods of high water and high winds. High wave action during significant wind events can cause coastal erosion and impact marsh lands and habitat areas. Soil erosion can also occur during high winds. Most all natural, historic, or cultural resources are at risk to tornadoes. Tornadoes can tear apart habitats, causing fragmentation across ecosystems and can damage and destroy historic structures and cultural resources.

Economic Assets and Community Activities of Value

During periods of high winds and tornadoes, the economy may slow temporarily as people stay home or inside. Diabo strength winds can damage economic assets in the Planning Area. Should high winds or tornadoes damage businesses and commercial centers, long term economic issues may occur.

All community activities of value have some measure of vulnerability to high wind and tornado. High winds and tornadoes can cause life safety issues. Activities may be cancelled, postponed, or rescheduled due to high wind and tornado events.

Impacts from Severe Weather: High Wind and Tornado

Wind and tornadoes can cause damage to property and loss of life. While most tornado damage is caused by violent winds, the majority of injuries and deaths generally result from flying debris. Property damage can include damage to buildings, fallen trees, and power lines. Local industries may also be damaged or

destroyed. Access roads and streets may be blocked by debris, delaying necessary emergency response. Winds can push automobiles off roads, damage roofs and structures, cause power outages, and cause secondary damage due to flying debris and hazardous trees. High winds can also contribute to the spread and intensity of wildfires. Climate change may affect this hazard and cause winds to increase in velocity and more tornadoes to affect the Planning Area.

Future Development

High winds and tornadoes are taken into account in future development in each of the jurisdictions of the Tri-City Planning Area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.6. Climate Change

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Climate change is the distinct change in measures of weather patterns over a long period of time, ranging from decades to millions of years. More specifically, it may be a change in average weather conditions such as temperature, rainfall, snow, ocean and atmospheric circulation, or in the distribution of weather around the average. While the Earth's climate has cycled over its 4.5-billion-year age, these natural cycles have taken place gradually over millennia, and the Holocene, the most recent epoch in which human civilization developed, has been characterized by a highly stable climate – until recently.

This LHMP Update is concerned with human-induced climate change that has been rapidly warming the Earth at rates unprecedented in the last 1,000 years. Since industrialization began in the 19th century, the burning of fossil fuels (coal, oil, and natural gas) at escalating quantities has released vast amounts of carbon dioxide and other greenhouse gases responsible for trapping heat in the atmosphere, increasing the average temperature of the Earth. Secondary impacts include changes in precipitation patterns, the global water cycle, melting glaciers and ice caps, and rising sea levels. According to the Intergovernmental Panel on Climate Change (IPCC), climate change will "increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems" if unchecked.

Through changes to oceanic and atmospheric circulation cycles and increasing heat, climate change affects weather systems around the world. Climate change increases the likelihood and exacerbates the severity of extreme weather – more frequent or intense storms, floods, droughts, and heat waves. Consequences for human society include loss of life and injury, damaged infrastructure, long-term health effects, loss of agricultural crops, disrupted transport and freight, and more. Climate change is not a discrete event but a long-term hazard, the effects of which communities are already experiencing.

Climate change adaptation is a key priority of the State of California. The 2023 State of California Multi-Hazard Mitigation Plan noted that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

In the Tri-City Planning Area and regionally, each year it seems to get a bit warmer. It was also noted that 2017 was one of the wettest years ever. Post 2017 saw many years of very dry weather. 2021 was noted by NASA to be one of the hottest on record. 2023 is trending to be the same. California's Adaptation Planning Guide: Understanding Regional Characteristics has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. The Tri-City Planning Area falls in the Bay Area Region. The Bay Area is a heavily urbanized region (over 7 million people). The predominant feature of this region is San Francisco Bay and the miles of shoreline, both on the Pacific coast and along the bay, extending north to Sonoma County, inland to the Delta, and south to San Jose. The urbanized areas are concentrated primarily around the bay. To the north and south, the region is characterized by low coastal mountains. Sonoma and Napa counties produce wine grapes valued over $850 million in 2010 (California Farm Bureau Federation, 2012). To the east, Solano and Contra Costa counties are on the western edge of the low-lying California Delta. Table 4-29 provides a summary of Cal-Adapt Climate Projections for the Bay Area Region.

Table 4-29 Bay Area Region – Cal Adapt Climate Projections

Effect	Ranges
Temperature Change, 1990-2100	January: 4°F to 5°F increase in average temperatures July: 5°F to 6°F increase in average temperatures (Modeled high temperatures – average of all models; high carbon emissions scenario)
Precipitation	Precipitation varies widely in this region, with annual totals over 40 inches in northern Sonoma County to roughly 15 inches in the eastern portions of Solano and Contra Costa counties. A moderate decline in annual rainfall, 1 to 3 inches by 2050 and 4 to 5 inches by 2090, is projected throughout the region. (Community Climate System Model 3 (CCSM3) climate model; high carbon emissions scenario)
Sea Level Rise	By 2100, sea levels may rise up to 55 inches, posing considerable threats to coastal areas and particularly to low-lying areas adjacent to San Francisco Bay. The number of acres vulnerable to flooding is expected to increase 20 to 30 percent in most parts of the Bay Area, with some areas projected for increases of over 40 percent. Coastal areas are estimated to experience an increase of approximately 15 percent in the acreage vulnerable to flooding.
Heat wave	Along the coast, particularly to the south, heat wave is defined as five days over 72°F to 77°F; in other areas the threshold is in the mid- to upper 90s. Over most of the region a limited increase in the number of heat waves is expected by 2050 with only the eastern areas expecting more than one or two more per year. By 2100, between six and 10 more heat waves can be expected per year.
Wildfire	There is little change in projected fire risk in this region, save for the slight increases expected in western Marin County. (Geophysical Fluid Dynamics Laboratory (GFDL) climate model; high carbon emissions scenario)

Source: Cal-Adapt

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the Tri-City Planning Area, surrounding counties, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known, but is feared to be tens to hundreds of years.

Past Occurrences

Disaster Declaration History

Climate change has never been directly linked to any declared disasters, as shown in Table 4-5.

NCDC Events

The NCDC does not track climate change events.

Planning Committee Events

The Planning Committee noted the following for the entire Tri-City Planning Area:

- Each year temperatures get hotter and extreme heat events become more taxing on the Planning Area.
- Tree Die back is increasing in and around the Planning Area.
- There has been an increase in red flag days. This is problematic as red flag days limit fuels management work. As a result of drought (as exacerbated by climate change) there is more dead biomass to process and less burn days to do so. In addition to an increase in red flag days which limits processing, recent weather patterns are providing less days with adequate air quality to allow burning.
- Lakes and reservoirs are seeing an increase in nutrient loading and blue green algae.
- The strength of storms is increasing.

Specific events recalled by Planning Committee members for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrence

Highly Likely – Climate change is virtually certain to continue without immediate and effective global action. According to NASA, 2021 was one of the hottest years on record with 2023 trending the same way. Without significant global action to reduce greenhouse gas emissions, the IPCC concludes in its Sixth Assessment Synthesis Report (2022) that average global temperatures are likely to exceed 1.5°C by the end of the 21st century, with consequences for people, assets, economies and ecosystems, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges.

Climate Scenarios

The United Nations IPCC developed several greenhouse gas (GHG) emissions scenarios based on differing sets of assumptions about future economic growth, population growth, fossil fuel use, and other factors. The emissions scenarios range from "business-as-usual" (i.e., minimal change in the current emissions trends) to more progressive (i.e., international leaders implement aggressive emissions reductions policies). Each of these scenarios leads to a corresponding GHG concentration, which is then used in climate models to examine how the climate may react to varying levels of GHGs. Climate researchers use many global climate models to assess the potential changes in climate due to increased GHGs.

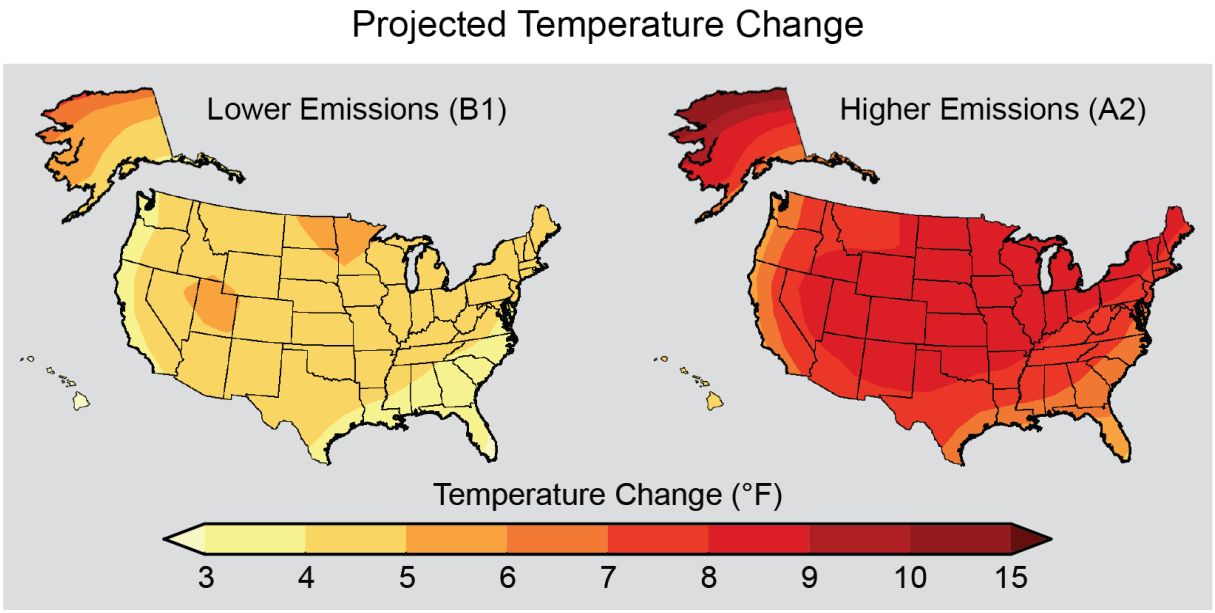
Key Uncertainties Associated with Climate Projections

- Climate projections and impacts, like other types of research about future conditions, are characterized by uncertainty. Climate projection uncertainties include but are not limited to:
  - ✓ Levels of future greenhouse gas concentrations and other radiatively important gases and aerosols,
  - ✓ Sensitivity of the climate system to greenhouse gas concentrations and other radiatively important gases and aerosols,
  - ✓ Inherent climate variability, and
  - ✓ Changes in local physical processes (such as afternoon sea breezes) that are not captured by global climate models.

Even though precise quantitative climate projections at the local scale are characterized by uncertainties, the information provided can help identify the potential risks associated with climate variability/climate change and support long term mitigation and adaptation planning.

Maps show projected change in average surface air temperature in the later part of this century (2071-2099) relative to the later part of the last century (1970-1999) under a scenario that assumes substantial reductions in heat trapping gases and a higher emissions scenario that assumes continued increases in global emissions. These are shown in Figure 4-34.

Figure 4-34 Projected Temperature Change – Lower and Higher Emissions Scenario



Source: National Climate Assessment

According to the California Natural Resource Agency (CNRA), climate change is already affecting California and is projected to continue to do so well into the foreseeable future. Current and projected changes include increased temperatures, sea level rise, a reduced winter snowpack altered precipitation patterns, and more frequent storm events. Over the long term, reducing greenhouse gases can help make these changes less severe, but the changes cannot be avoided entirely. Unavoidable climate impacts can result in a variety of secondary consequences including detrimental impacts on human health and safety, economic continuity, ecosystem integrity and provision of basic services.

The CNRA's 2021 CAS delineated how climate change may impact and exacerbate natural hazards in the future, including wildfires, extreme heat, floods, and drought.

- Climate change is expected to lead to increases in the frequency, intensity, and duration of extreme heat events and heat waves in the Planning Area and the rest of California, which are likely to increase the risk of mortality and morbidity due to heat-related illness and exacerbation of existing chronic health conditions. Those most at risk and vulnerable to climate-related illness are the elderly, individuals with chronic conditions such as heart and lung disease, diabetes, and mental illnesses, infants, the socially or economically disadvantaged, and those who work outdoors.
- Higher temperatures will melt the Sierra snowpack earlier and drive the snowline higher, resulting in less snowpack to supply water to California users.
- Droughts are likely to become more frequent and persistent in the 21st century.
- Intense rainfall events, periodically ones with larger than historical runoff, will continue to affect California with more frequent and/or more extensive flooding.
- Storms and snowmelt may coincide and produce higher winter runoff from the landward side, while accelerating sea-level rise will produce higher storm surges during coastal storms. Together, these

changes may increase the probability of floods and levee and dam failures, along with creating issues related to saltwater intrusion.

- Warmer weather, reduced snowpack, and earlier snowmelt can be expected to increase wildfire through fuel hazards and ignition risks. These changes can also increase plant moisture stress and insect populations, both of which affect forest health and reduce forest resilience to wildfires. An increase in wildfire intensity and extent will increase public safety risks, property damage, fire suppression and emergency response costs to government, watershed and water quality impacts, vegetation conversions and habitat fragmentation.

Vulnerability Assessment

Vulnerability—High

Climate change is the distinct change in measures of weather patterns over a long period of time, ranging from decades to millions of years. More specifically, it may be a change in average weather conditions such as temperature, rainfall, snow, ocean and atmospheric circulation, or in the distribution of weather around the average. While climate change on its own is a hazard, its effect on exacerbating other hazards is the primary concern.

Climate Change Impacts

The discussion on impacts to the Tri-City Planning Area and Alameda County come from three sources:

- Alameda County Climate Change and Health Profile Reports (CCHPRs)
- California Adaptation Planning Guide
- Proceedings of the National Academy of Sciences

Impacts from the Planning Committee were discussed in the Past Occurrences section above.

Note: All other vulnerability sections of this Plan discuss:

- People and Populations
- Structures
- Critical Facilities and Infrastructure, and Community Lifelines
- Natural, Historic, and Cultural Resources
- Economic Assets
- Community Activities of Value

Due to the complexity of climate change and the way the data sources handle some or all of these listed issues, rather than grouping the data in the bulleted list above, the source material is presented in the same way it is presented in their original documents. Each document addresses, part or all, of the bulleted list above. Additionally, each jurisdiction in the Tri-City Planning Area has their own climate plans, which are unique to their jurisdiction and are discussed in their respective annexes to this Base Plan.

Alameda County Climate Change and Health Profile Report Impacts (2017)

According to the Alameda CCHPRs, all Californians are vulnerable to the health impacts of climate change. Even if one is fortunate to live, work, study, or play in a place without direct contact with wildfires, flooding, or sea level rise, no one can entirely avoid excessive heat or the indirect effects of extreme weather events. Based on medical reviews of individuals who died during heat waves and other extreme weather events, those who are particularly vulnerable to the direct effects of climate change include the very old and very young, individuals who have chronic medical conditions and psychiatric illness, people taking multiple medications, people without means for evacuation (no access to public transit or private cars), people who are socially isolated, medically fragile people, and people living in institutions. Acclimatization to heat may help reduce risks from heat waves in the healthy general population but may not be sufficient to protect those with underlying medical conditions.

Researchers have examined the pathways in which increased temperatures and hydrologic extremes can impact health and generally recognize three main pathways: direct exposures, indirect exposures, and socioeconomic disruption. Based on the review of weather-related natural disasters and historical patterns and scientific judgment, public health researchers have suggested the nature and direction of health harms or benefits.

- **Extreme Weather-Related Injury, Mental Health, and Displacement Extreme weather events (storms, flooding)** – These events can cause fatal and nonfatal injuries from drowning, being struck by objects, fire, explosions, electrocution, or exposure to toxic materials. A widespread weather-related natural disaster may destroy or ruin housing, schools and businesses and cause temporary or permanent displacement. Individuals and families may experience post-traumatic stress, depression, and increased risk of suicide.
- **Vector-borne Illnesses** – Climatic changes alter the range, biogeography, and growth of microbes and the vectors of food, water, and vector-borne illnesses. This includes the changes in aquatic environments that could increase harmful algal blooms and lead to increases in foodborne and waterborne illnesses.
- **Food Insecurity** – Climate change is expected to have global impacts on food production and distribution systems. This can cause food prices to increase, which makes food less affordable and increases food insecurity, obesity, and malnutrition in economically constrained households.
- **Sea Level Rise, Mold, and Indoor Air Quality** – Through sea level rise, saltwater may intrude into coastal aquifers thus reducing quality and quantity of water supply. Water intrusion into buildings can result in mold contamination leading to indoor air quality problems.
- **Socioeconomic Disruption** – Widespread social and economic disruption includes damage to the infrastructure for the delivery of health services and for general economic well-being. Health care facilities, water treatment plants, and roads for emergency responders and transportation for health care personnel can be damaged in climate-related extreme weather events. Increased burden of disease and injury will test the surge capacity of health care facilities. Economic disruption can lead to income loss, income insecurity, food insecurity, housing insecurity, and mental health problems, which in turn may increase substance abuse, suicide and other health problems. Energy production and distribution is also threatened by heat and wildfires through loss of efficiency, generating capacity, and fires disrupting transmission lines. California's ports that provide the gateway to goods for California, national, and international markets are at risk from sea level rise and coastal storms.

In addition to the bulleted points above, drought, extreme heat, and wildfire are also exacerbated by climate change. This will be discussed further in Section 4.3.9 (Drought), Section 4.3.2 (Extreme Heat), and Section 4.3.17 (Wildfire). Sea level rise is a byproduct of climate change. It is discussed in Section 4.3.7. All Californians are vulnerable to the health impacts of climate change. Even if one is fortunate to live, work, study, or play in a place without direct contact with wildfires, flooding, or sea level rise, no one can entirely avoid excessive heat or the indirect effects of extreme weather events.

California Adaptation Planning Guide Impacts (2020)

The California Adaptation Planning Guide (APG) prepared by California OES and CNRA was developed to provide guidance and support for local governments and regional collaboratives to address the unavoidable consequences of climate change. The APG: Defining Local and Regional Impacts focuses on understanding the ways in which climate change can affect a community. According to this APG, climate change impacts (temperature, precipitation, sea level rise, ocean acidification, and wind) affect a wide range of community structures, functions and populations in the Planning Area. These impacts further defined by regional and local characteristics are discussed by secondary impacts and seven sectors found in local communities: Public Health, Socioeconomic, and equity impacts; Ocean and Coastal Resources; Water Management; Forest and Rangeland; Biodiversity and Habitat; Agriculture; and Infrastructure. The APG: Understanding Regional Characteristics identified the following impacts specific to the North Coast region in which the Tri-City Planning Area is part of:

- Increased temperatures
- Reduced precipitation
- Sea level rise – coastal inundation and erosion
- Public health – heat and air pollution
- Reduced agricultural productivity (e.g., wine grapes)
- Inland flooding
- Reduced tourism

California's Adaptation Guide: Understanding Regional Characteristics provides input on adaptation considerations for the North Coast Region. As detailed in this guide, climate change has the potential to disrupt many features that characterize the region, including ecosystems health, snowpack, and the tourist economy. Specific regional impacts include the following:

Agriculture. Each of the products will be affected by climate change differently. The Planning Area should collaborate closely with local agricultural organizations to best support and prepare for changes in this economic sector.

Ecosystems and Biodiversity. Exacerbated by new development in the region, climate change can cause habitats to shift, creating conditions that stress ecosystems and endemic species. Continued changes in hydrologic flow regimes and increased temperatures will further stress these systems' regional habitats supporting many special-status species.

Snowpack and Flooding. Climate-related decrease in snowpack can have significant consequences on the areas that depend on this water. In addition, a decrease in snowpack can increase impacts from flooding,

landslide, and loss of economic base related to a drop in tourism. Increases in flood events can further stress the region and increase flood related impacts and damages.

Water Management. Depending on location, parts of this region are projected to experience between 6 inches and 15 inches less rainfall by 2100. Specifics for the Planning Area were not given in this report. Reduced rainfall, combined with reductions in snowpack and existing diversions, could result in an altered flow regime in the region. This change would be particularly challenging due to its impact on fish. Reduced flow, altered timing of flows, and periodic extreme events can result in reduced water quality, habitat destruction, and/or isolation of habitats. The Planning Area will need to carefully assess local aquatic ecosystems for vulnerability to these changes.

Wildfire. The Bay Area Region is already challenged through past fire suppression combined with the large number of structures that have been built throughout the WUI areas. Climate change is projected to result in large increases in wildfire frequency and size which will further compound the wildfire problem. In addition, potential impacts following fires, such as heavy rains causing landslide and erosion in post-burn areas can have significant consequences on waterways and entire watersheds.

Proceedings of National Academy of Sciences Impacts (2017)

In addition to the APG, a report from the Proceedings of the National Academy of Sciences (PNAS) stated that some of the recent fire impacts may have been attributed to climate change. The PNAS report posits that climate influences wildfire potential primarily by modulating fuel abundance in fuel-limited environments, and by modulating fuel aridity in flammability-limited environments. Increased forest fire activity across the western United States in recent decades has contributed to widespread forest mortality, carbon emissions, periods of degraded air quality, and substantial fire suppression expenditures. Those most vulnerable to high levels of ozone and particulate matter include people who work or spend a lot of time outdoors, such as residents of this region who spend a lot of time working or recreating outdoors.

Future Development

The Tri-City Planning Area could see population fluctuations as a result of climate impacts relative to those experienced in other regions, and these fluctuations are expected to affect Planning Area. While there are currently no formal studies of specific migration patterns expected to impact the Planning Area, climate-induced migration was recognized within the UNFCCC Conference of Parties Paris Agreement of 2015 and is expected to be the focus of future studies. Future development issues in the Tri-City Planning Area are expected to be as follows:

- **Climate change will stress water resources**. Water is an issue in every region, but the nature of the potential impacts varies. Drought, related to reduced precipitation, increased evaporation, and increased water loss from plants, is an important issue in many U.S. regions, especially in the West. Floods, water quality problems, and impacts on aquatic ecosystems and species are likely to be amplified by climate change. The ability to secure and provide water for new development requires on-going monitoring and assurances. It is recommended that the ability to provide a reliable water supply from the appropriate water purveyor, continue to be in the conditions for project approval, and such assurances shall be verified and in place prior to issuing building permits.

- **Similarly, protecting and enhancing water supply will also need to be addressed**. California's Sustainable Groundwater Management Act (SGMA) will contribute to addressing groundwater and aquifer recharge needs. Good groundwater management in the Planning Area and the surrounding counties will provide a buffer against drought and climate change and contribute to reliable water supplies regardless of weather patterns. California depends on groundwater for a major portion of its annual water supply, and sustainable groundwater management is essential to a reliable and resilient water system. Protection of critical recharge areas should be addressed across the Planning Area. Further, these plans should include provisions that guide development or curtail development in areas that would harm or compromise recharge areas.
- **Climate change will affect land uses and planning**. Climate change coupled with shifting demographics and market conditions, could impact both the location of desired developments and the nature of development. The value of open space, urban greening, green infrastructure, tree canopy expansion and pressure to preserve it will likely increase, due in part to its restorative, recreational, environmental, and habitat, and physical and mental health benefits but also for its ability to sequester carbon and cool the surrounding environment.

How climate change is specifically taken into account in future development in each of the jurisdictions of the Tri-City Planning area will differ. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.7. Coastal Flooding and Sea Level Rise

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Historically, cities, towns and villages were often settled around ports and waterways along the nation's coastlines, providing individuals and families opportunities for trade, jobs and transportation, recreation and relaxation. These areas are extremely important to our nation, with great economic, historic and cultural significance. Although the coastal areas of the United States comprise only one-fifth of the land area of the contiguous 48 states, they account for more than half of the nation's population and housing supply. In 1990, over 133 million Americans lived in the 673 counties along the Atlantic and Pacific Oceans, the Gulf of Mexico and the Great Lakes. Since 1960, population in these areas increased by 41 percent. The continued increase in coastal population leads to increased coastal development, which places greater numbers of people and structures at risk from coastal hazards.

Coastal flooding can result from a variety of different causes including storm surges created by tidal influences; storms like hurricanes and tropical cyclones, and even strong rain and wind storm events; rising sea levels due to climate change (discussed below) and to a much lesser extent by possible tsunamis events (discussed in Section 4.3.7). Additionally, sea-level rise is also predicted to lead to rising water tables. High water tables can lead to the infiltration of sewer systems, destabilization of structure foundation

integrity, seepage of historical soil contaminates, water discharge into creeks and ponds causing additional flooding, and increase risk of soil liquefaction (discussed in Section 4.3.10) during earthquakes.

In the past decade, there have been groundbreaking studies and an increased public awareness on the worldwide effects of climate change associated with global warming. Studies continue to document that global warming is continuing at progressive rates, which has been demonstrated by warmer and colder seasonal temperatures and patterns of more severe seasonal storm events. Sea-level rise has accelerated in recent decades due, in part, to increasing ice loss in the world's polar regions. Latest data from the World Meteorological Organization shows that global mean sea-level reached a new record high in 2021, rising an average of 4.5 millimeter per year over the period 2013 to 2021. It is projected that sea levels will continue to rise as precipitation continues to increase and ice caps continue to melt. There are number of areas in the Tri-City Planning Area that are at risk of coastal flooding and will be dramatically impacted by sea level rise.

King Tides

Coastal flooding and sea level rise are exacerbated during periods of extreme tides. Tides are long-period waves that roll around the planet as the ocean is "pulled" back and forth by the gravitational pull of the moon and the sun as these bodies interact with the Earth in their monthly and yearly orbits. According to NOAA, during full or new moons—which occur when the Earth, sun, and moon are nearly in alignment—average tidal ranges are slightly larger. This occurs twice each month. The moon appears new (dark) when it is directly between the Earth and the sun. The moon appears full when the Earth is between the moon and the sun. In both cases, the gravitational pull of the sun is "added" to the gravitational pull of the moon on Earth, causing the oceans to bulge a bit more than usual. This means that high tides are a little higher and low tides are a little lower than average. These are called spring tides, a common historical term that has nothing to do with the season of spring. Rather, the term is derived from the concept of the tide "springing forth." Spring tides occur twice each lunar month all year long, without regard to the season. Spring tides are also sometimes called (non-scientifically) king tides.

Location and Extent

The coastal areas of the Tri-City Planning Area at risk for coastal flooding will also be affected by sea level rise (especially during periods of extreme tides). These include areas with low-lying elevations (some at sea level) and areas that are now filled and were once marshland. Coastal flooding areas in FEMA DFIRM VE zones are shown on Figure 4-107. Duration of coastal flooding generally lasts as long as the storm that causes it and is relatively short, with a quick speed of onset. There is no scientific scale to measure coastal flooding, as floods are generally measured in depths, extent, and velocity of flooding. Coastal flooding and potential CoSMoS sea level rise scenarios are shown on Figure 4-35, Figure 4-36, and Figure 4-37. Extents by scenario are detailed in Table 4-30. Duration of sea level rise is thought to be long. The speed of onset is slow. There is no scientific scale for sea level rise, other than the actual physical measurement of sea level and depth.

Figure 4-35 Tri-City Planning Area – Sea Level Rise Existing Conditions Scenarios

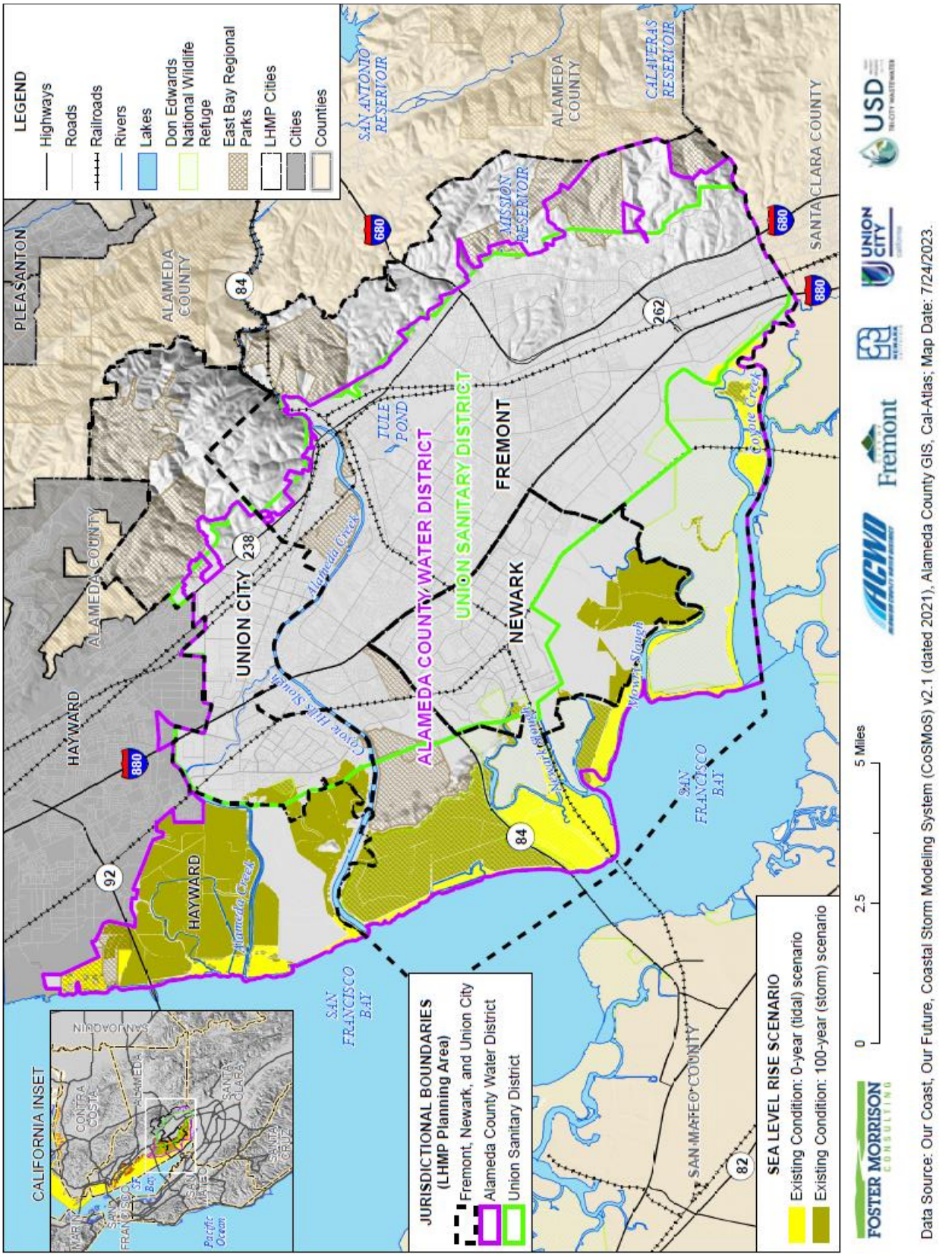


Figure 4-36 Tri-City Planning Area – Sea Level Rise 1 Meter Scenarios

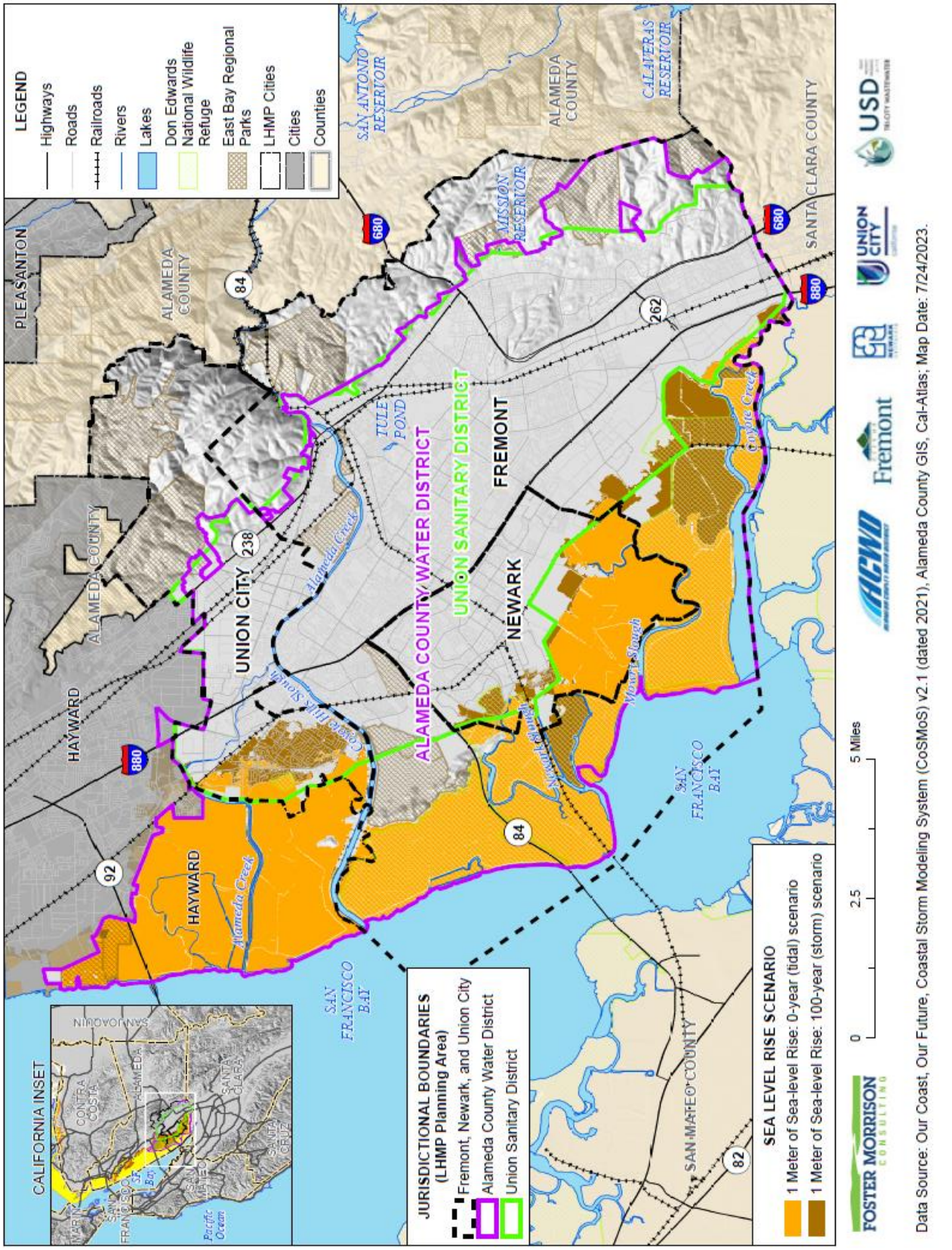


Figure 4-37 Tri-City Planning Area – Sea Level Rise 2 Meter Scenarios

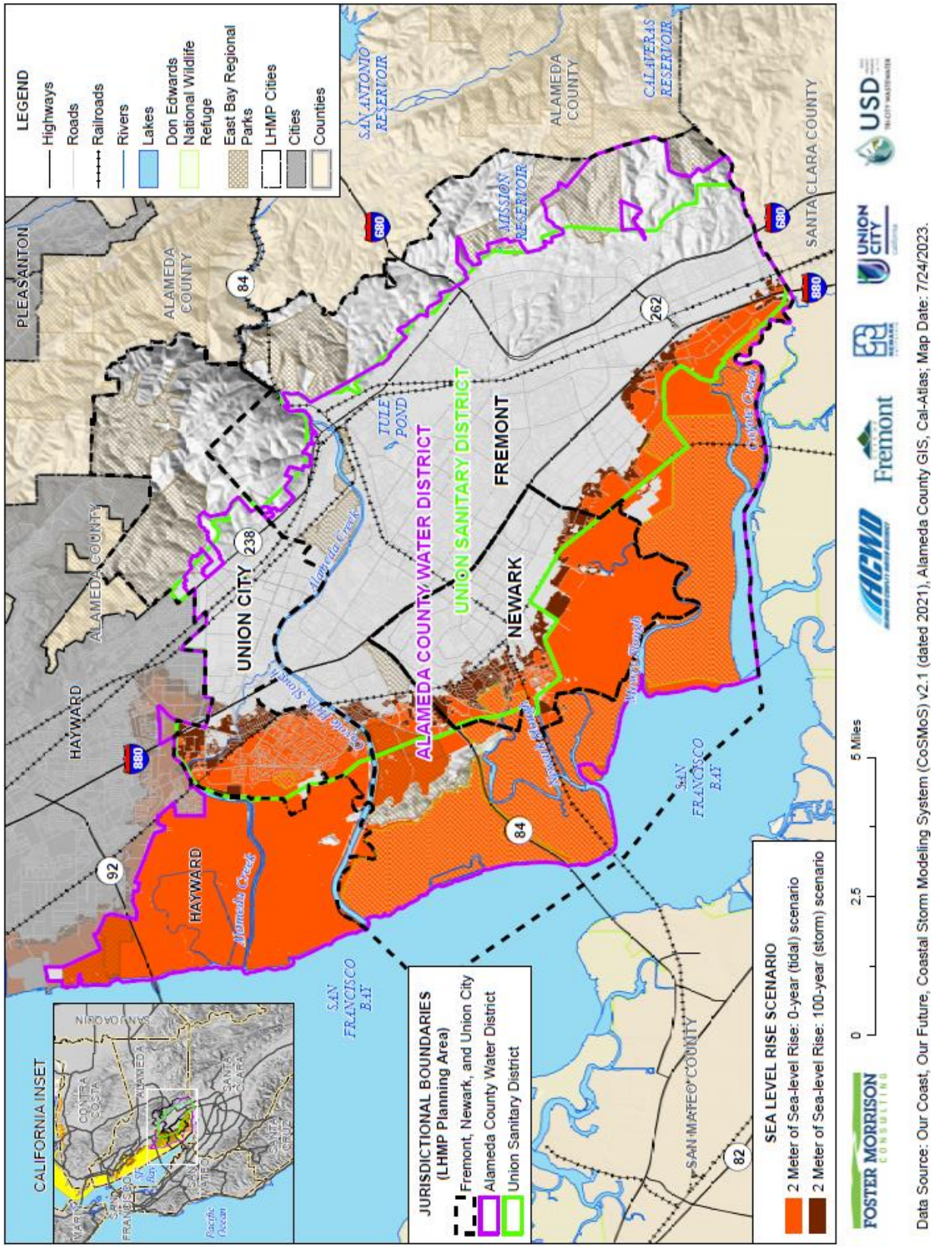


Table 4-30 Tri-City Planning Area – Sea Level Rise Scenarios Geographical Extents

Jurisdiction / Sea Level Rise Scenario/	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Existing Condition: 0-year (tidal) scenario	9,278.33	11.44%	0	0.00%	9,278.33	26.92%
Existing Condition: 100-year (storm) scenario	12,783.91	15.77%	21.73	0.05%	12,762.18	37.03%
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	15,560.96	19.19%	23.58	0.05%	15,537.38	45.09%
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario	18,617.54	22.96%	224.24	0.48%	18,393.31	53.37%
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	21,830.37	26.92%	1,562.55	3.35%	20,267.82	58.81%
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario	22,910.88	28.25%	2,312.14	4.96%	20,598.74	59.77%
Newark						
Existing Condition: 0-year (tidal) scenario	58.99	0.40%	0.62	0.01%	58.38	1.13%
Existing Condition: 100-year (storm) scenario	1,448.71	9.86%	19.9	0.21%	1,428.81	27.74%
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	3,317.94	22.59%	272.87	2.86%	3,045.08	59.12%
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario	4,167.98	28.38%	568.96	5.97%	3,599.02	69.87%
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	4,612.32	31.40%	847.62	8.89%	3,764.69	73.09%
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario	5,845.21	39.80%	1,737.72	18.22%	4,107.49	79.74%
Union City						
Existing Condition: 0-year (tidal) scenario	0	0.00%	0	0.00%	0	0.00%
Existing Condition: 100-year (storm) scenario	341.62	2.05%	1.78	0.02%	339.84	4.64%
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	624.38	3.75%	161.38	1.73%	463	6.32%
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario	3,000.58	18.00%	2,331.53	24.96%	669.04	9.13%
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	3,617.15	21.70%	2,871.64	30.74%	745.51	10.17%
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario	4,409.28	26.45%	3,484.04	37.30%	925.24	12.63%

Jurisdiction / Sea Level Rise Scenario/	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Alameda County Water District						
Existing Condition: 0-year (tidal) scenario	5,278.13	4.94%	0.62	0.00%	5,277.51	12.32%
Existing Condition: 100-year (storm) scenario	15,410.24	14.43%	50.55	0.08%	15,359.69	35.85%
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	22,176.50	20.76%	477.77	0.75%	21,698.72	50.65%
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario	28,597.27	26.77%	3,151.28	4.93%	25,445.99	59.40%
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	32,976.82	30.87%	5,374.62	8.40%	27,602.20	64.43%
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario	36,111.20	33.81%	7,631.65	11.93%	28,479.55	66.48%
Union Sanitary District						
Existing Condition: 0-year (tidal) scenario	54.17	0.07%	0	0.00%	54.17	0.38%
Existing Condition: 100-year (storm) scenario	356.18	0.46%	2.19	0.00%	353.98	2.50%
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	712.67	0.92%	164.85	0.26%	547.81	3.87%
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario	4,093.19	5.28%	2,628.53	4.15%	1,464.66	10.34%
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	7,390.77	9.54%	4,824.69	7.62%	2,566.08	18.12%
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario	10,227.14	13.20%	7,054.70	11.14%	3,172.44	22.41%

Source: CoSMoS 2021

Past Occurrences

Disaster Declaration History

There have been 19 state and 19 federal disaster declarations due to flooding and heavy rains and storms in Alameda County as shown in Table 4-31. These events are known to have caused some measures of coastal flooding, as compounded by sea level rise, affecting the Tri-City Planning Area. No disaster declarations have occurred specific to sea level rise.

Table 4-31 Alameda County Disaster Declarations 1950-2023 from Flood

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	19	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (twice)

Source: Cal OES, FEMA

NCDC Events

The NCDC does not track sea level rise. There are NCDC events for coastal flooding, which are shown in Table 4-32 for Alameda County.

*Table 4-32 Alameda County NCDC Coastal Flood Events 1/1/1950-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Coastal Flood	3	0	0	0	0	$0	$0
High Surf	1	0	0	0	0	$0	$0
Total	**4**	**0**	**0**	**0**	**0**	**$ 0**	**$ 0**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

Planning Committee Events

The Planning Committee noted that coastal flooding is an annual event, with some past damages and that sea level rise is adding to the concern of coastal flooding. The Planning Committee is concerned that sea level rise will exacerbate these damages in the future. Past events include:

2017 – Hayward Shoreline (near the Planning Area), Site 3 Marsh Levee, 2 sections of the levee were damaged. 1) Approx 30' long by 3' wide section of trail was lost. 2) Approx 25' long by 3' wide section of trail was lost. Repair with rip rap and rock fill. Trail restoration was needed.

More specific past occurrences can be found in each jurisdiction's respective annex to this LHMP Update

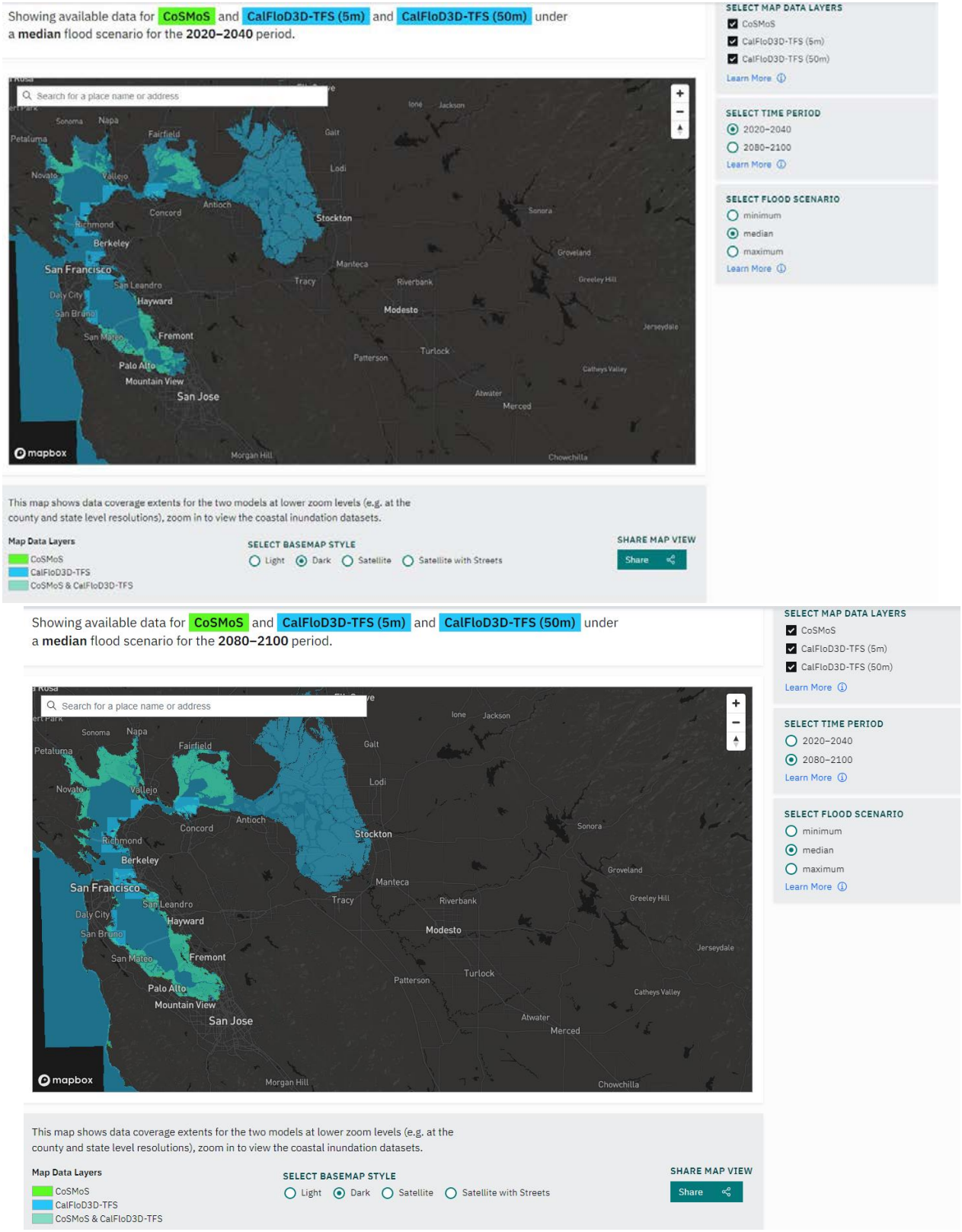
Likelihood of Future Occurrence (for both Coastal Flooding and Sea Level Rise)

Highly Likely – Coastal flooding occurs in the Planning Area during large storm events. Studies continue to document that global warming is continuing at progressive rates, which has been demonstrated by warmer and colder seasonal temperatures and patterns of more severe seasonal storm events. It is projected that sea levels will continue to rise as precipitation continues to increase and ice caps continue to melt. This will compound the coastal flooding issues. Therefore, the Planning Committee regards the likelihood of future occurrence of coastal flooding and sea level rise as highly likely.

Climate Change and Coastal Flooding and Sea Level Rise

Global models indicate that California will see substantial sea level rise (and coastal flooding) during this century, with the exact magnitude depending on such factors as, global emissions, rate at which oceans absorb heat, melting rates and movement of land-based ice sheets, and local coastal land subsidence or uplift. Cal-Adapt's "Sea Level Rise" map tool displays areas that may be vulnerable to inundation during an extreme storm event (coastal flooding) coupled with sea level rise. Information from that tool for the Tri-City Planning Area is shown in Figure 4-38. The upper map shows expected sea level rise between 2020 and 2040, while the lower map shows expected sea level rise between 2080 and 2100.

Figure 4-38 Tri-City Planning Area – Coastal Flooding and Sea Level Rise Threatened Areas



Source: Cal Adapt Sea Leve Rise – Coast Inundation Scenarios. Retrieved 5/5/2023

According to the California Adaptation Planning Guide, Understanding Regional Characteristics, with all of the coastal development in the Bay Area Region, sea level rise is likely to be the greatest threat to the Bay Area from climate change significantly affecting development, infrastructure, transportation infrastructure, populations, and the environment.

Vulnerability Assessment

Vulnerability—High

Coastal flooding and global climate change, sea level rise, and the need to nurture sustainable community development have become widely recognized issues that need to be addressed by Bay Area communities. The Tri-City Planning Area is impacted by these issues in its long-term operations and has an important role to play in contributing to the sustainability of the region. Complicating this situation is the realization that coastal flooding and sea level rise is affecting California's and the Bay Area's ecosystems in ways that are still too complex to fully understand.

Many coastal areas experience periodic minor-to-moderate shallow coastal flooding events typically as a result of meteorological factors that include high tides, winds, and rain. These events often affect roadways, buildings, natural resources and critical infrastructure. Properties located in low lying areas, including those in DFIRM VE flood zones, are most at risk, not just to long term inundation by the sea but more frequent coastal flooding during storm events. The Planning Area has a significant history of coastal flooding during "normal" rain events. The saying "Today's flood is tomorrow's high tide" is particularly applicable to areas that are frequently inundated due to seasonal rain events. More frequent tidal, rain events, and storm surge flooding of low-lying areas would cause more frequent flooding of the coastal shorelines. This can disrupt travel and damage roads, highways, levees, trails, natural resource areas, bridges, and other structures in coastal areas.

An assessment of a community's vulnerability to climate change begins with an understanding of local exposure to coastal flooding and sea level rise. This is included in the discussion of the Tri-City's Assets at Risk to this hazard.

Assets at Risk to Coastal Flooding and Sea Level Rise

Assets at risk from coastal flood and sea level rise include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

Methodology and Results

GIS was used to analyze Tri-City Planning Area assets potentially at risk to sea level rise (and coastal flooding). Alameda County Assessor's data was obtained for the Planning Area and was intersected with CoSMoS v2.1 2021 sea level rise scenario data to determine Planning Area assets that fall into defined sea level rise scenario areas. Affected Planning Area assets are described below. ***Note***, the sea level rise

scenario data used to evaluate exposure does not account for the nearshore dynamic processes; as such, areas expected to be flooded are conservative estimates of the potential impact to these areas.

Six Sea Level Rise Scenarios for the Planning Area were analyzed for this LHMP Update. This includes three different sea level rise predictions presented under two conditions: a tidal scenario and a 100-year storm scenarios. These 6 scenarios are:

- Existing Condition: 0-year (tidal) scenario
- Existing Condition: 100-year (storm) scenario
- 1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario
- 1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario
- 2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario
- 2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario

People and Populations

All people and populations in the Tri-City Planning Area located in areas subject to coastal flooding and sea level rise are at some risk to these hazards. This includes those that reside and recreate in coastal areas, including FEMA DFIRM VE Zones and within areas inundated by the CosMoS sea level rise scenarios. Certain vulnerable populations located within areas prone to coastal flooding and sea level rise may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

Planning Area residents that live in these coastal flooding and sea level rise areas are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to Fremont's residential populations located in these hazard areas, the CoSMoS sea level rise scenarios were overlayed on the parcel layer, and linked to the Assessor Data. Those residential parcel centroids that intersect the scenario inundation areas were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction in the Tri-City Planning Area. Analysis results are shown in Table 4-33.

Table 4-33 Tri-City Planning Area – Improved Residential Parcels and Population by Sea Level Rise Scenario by Jurisdiction

Sea Level Rise Scenario/Jurisdiction	Improved Residential Parcels	Population at Risk
Existing Conditions –0-year (tidal) scenario		
City of Fremont	0	0
City of Newark	0	0
City of Union City	0	0
Existing Conditions – 100-year (storm) Scenario		
City of Fremont	0	0
City of Newark	0	0

Sea Level Rise Scenario/Jurisdiction	Improved Residential Parcels	Population at Risk
City of Union City	2	6
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario		
City of Fremont	0	0
City of Newark	0	0
City of Union City	569	1,918
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario		
City of Fremont	0	0
City of Newark	758	2,517
City of Union City	5,157	17,379
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario		
City of Fremont	38	114
City of Newark	758	2,517
City of Union City	6,151	20,729
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario		
City of Fremont	781	2,335
City of Newark	3,067	10,182
City of Union City	7,773	26,195

Source: Cosmos 2021, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau Average Household Factor – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37.

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums as well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

For the special districts of ACWD and USD, analysis of their service territory populations in the CoSMos Sea Level Rise scenarios was also performed. This is derived from the table above. This analysis can be found in their respective annexes to this Base Plan.

Structures

Certain structures in the Tri-City Planning Area are at risk to coastal flooding and sea level rise and primarily include those structures located in areas prone to coastal flooding and sea level rise as shown in the CosMoS scenarios, (and the FEMA DFIRM VE flood zones which are discussed in more detail in the Flood: 1%/0.2% Annual Chance section below). GIS was used to determine the possible impacts of coastal flooding and sea level rise on parcels and structures within the Tri-City Planning Area. Table 4-34 is a summary table for the all jurisdictions in the Planning Area. Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values

in each jurisdiction are shown for each of the six sea level rise scenarios. More specific tables broken down by scenario and property use are shown in each respective jurisdictional annex to this Base Plan.

Table 4-34 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Sea Level Rise Scenarios by Jurisdiction

Sea Level Rise Scenario/ Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Existing Conditions –0-year (tidal) scenario						
Fremont	77	0	$1,363,724	$0	$0	$1,363,724
Newark	2	0	$0	$0	$0	$0
Union City	0	0	$0	$0	$0	$0
Alameda County Water District (Service Territory)	64	0	$177,014	$0	$0	$177,014
Union Sanitary District (Service Territory)	1	0	$146,517	$0	$0	$146,517
Existing Conditions – 100-year (storm) Scenario						
Fremont	117	1	$1,373,889	$237,402	$237,402	$1,848,693
Newark	19	-	$2,430,244	$0	$0	$2,430,244
Union City	17	2	$1,331,224	$799,083	$399,542	$2,529,849
Alameda County Water District (Service Territory)	202	9	$17,739,545	$5,185,859	$6,145,318	$29,070,722
Union Sanitary District (Service Territory)	25	2	$2,923,290	$799,083	$399,542	$4,121,915
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario						
Fremont	134	1	$1,373,889	$237,402	$237,402	$1,848,693
Newark	91	4	$72,875,566	$15,650,137	$15,650,137	$104,175,840
Union City	672	605	$112,615,579	$255,773,869	$167,287,216	$535,676,664
Alameda County Water District (Service Territory)	987	633	$222,126,910	$306,337,106	$220,590,875	$749,054,891

Sea Level Rise Scenario/ Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Union Sanitary District (Service Territory)	718	606	$132,473,334	$267,952,722	$179,466,069	$579,892,125
1 Meter (3.1 feet) of Sea Level Rise: 100-year (storm) scenario						
Fremont	164	2	$3,967,433	$417,594	$507,690	$4,892,717
Newark	1,203	783	$483,575,703	$773,730,050	$512,281,394	$1,769,587,147
Union City	5,457	5,250	$905,421,320	$2,069,443,158	$1,137,764,150	$4,112,628,628
Alameda County Water District	6,925	6,065	$1,448,612,356	$2,937,707,735	$1,773,701,043	$6,160,021,134
Union Sanitary District	6,608	6,022	$1,335,783,257	$2,838,257,116	$1,646,032,048	$5,820,072,421
2 Meter (6.2 feet) of Sea Level Rise: 0-year (tidal) scenario						
Fremont	497	205	$726,320,850	$1,085,899,930	$1,517,834,454	$3,330,055,234
Newark	1,599	1,073	$710,944,847	$1,266,914,275	$1,057,205,839	$3,035,064,961
Union City	6,523	6,279	$1,202,102,005	$2,722,377,094	$1,553,721,686	$5,478,200,785
Alameda County Water District (Service Territory)	8,754	7,615	$2,721,117,776	$5,199,726,160	$4,287,340,448	$12,208,184,384
Union Sanitary District (Service Territory)	8,355	7,556	$2,596,569,500	$5,088,730,075	$4,145,403,255	$11,830,702,830
2 Meter (6.2 feet) of Sea Level Rise: 100-year (storm) scenario						
Fremont	1,477	1,084	$1,520,381,398	$2,865,783,635	$3,322,885,071	$7,709,050,104
Newark	3,898	3,170	$1,336,138,118	$2,497,079,905	$1,975,028,267	$5,808,246,290
Union City	8,342	7,999	$1,709,503,199	$3,811,837,203	$2,380,382,662	$7,901,723,064
Alameda County Water District (Service Territory)	13,871	12,319	$4,650,599,158	$9,303,102,200	$7,840,741,065	$21,794,442,423
Union Sanitary District (Service Territory)	13,441	12,260	$4,515,796,435	$9,192,106,115	$7,698,803,872	$21,406,706,422

Source: Cosmos 2021, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure, and Community Lifelines

Coastal flooding and sea level rise presents a threat to critical facilities and infrastructure and community lifelines. Critical infrastructure plays an immensely important role in our communities. According to the 2021 *Critical Infrastructure at Risk – Sea Level Rise Planning Guidance for California's Coastal Zone* by the California Coastal Commission, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. The following GIS analysis identifies critical facilities and infrastructure at risk to coastal flooding and sea level rise, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Coastal flooding and sea level rise present a threat to life and property, including community lifelines in the Tri-City Planning Area. Community lifelines that would be vulnerable to coastal flooding and sea level rise include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of coastal flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. This would be true in a coastal flood event.
- **Health and Medical** – There may be injuries and deaths from a coastal flood. Patient movement from accident scenes by EMS may also have to be rerouted.
- **Energy** – Coastal flooding and sea level rise could impact large areas of electric infrastructure, causing widespread power outages.
- **Communications** – Communication infrastructure can be inundated by a coastal flood event or sea level rise causing damage and an interruption in service. As well, an influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about road and lane closures, washouts, debris on roads, or other issues.
- **Transportation** – Highways and local roads may see extensive flooding. This can cause lane and road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents and impact evacuation routes.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these times can be comingled with flood waters, contaminate drinking water, as well as create additional exposures to the environment.
- **Water Systems** – Any water (and wastewater) system located close to the coast may be affected by coastal flooding and sea level rise. The Planning Area's stormwater drainage system (close to the coast) and facilities may also be affected. Saltwater intrusion can cause significant impacts to these systems.

Generally, coastal flooding events are temporary events with flood waters receding back to pre-storm levels at the conclusion of the storm. Given the limited areas within the Planning Area prone to coastal flooding and the short duration of these events, community lifelines are not likely to be overwhelmed. However,

sea level rise can create a permanent impact (or reduction) to the built environment causing many coastal areas to be uninhabitable as the water levels rise over time. Given the slow nature of sea level rise and limited areas prone to this hazard, the Tri-City Planning Area should be able to address these concerns proactively ensuring that these community lifelines are not overwhelmed and remain operational.

Natural, Historic, and Cultural Resources

According to sealevelrise.org, rising sea levels can disrupt coastal wetlands by drowning plant species, increasing salt levels in the soil and water, and outpacing wetland's migration further inland. This puts important ecosystems in danger, threatens habitats, and leaves communities exposed to dangerous storm surge. Without wetlands and other critical ecosystems, many species could lose their homes or become extinct. A major coastal flood event could have a devastating impact on the Tri-City Planning Area. Large flood events can affect natural, historic, and cultural resources. Any of these resources that fall in the sea level rise scenarios shown on Figure 4-35, Figure 4-36, and Figure 4-37 would be vulnerable. This includes the Don Edwards San Francisco Bay National Wildlife Refuge owned by the US Fish and Wildlife Service.

Economic Assets and Community Activities of Value

Any economic asset located within areas prone to coastal flooding and sea level rise could be affected. While impacts to these assets may be more limited or short term during a coastal flood event, sea level rise can create a permanent impact (or reduction) to the built environment causing many coastal areas to be uninhabitable as the water levels rise over time. This could cause those businesses and economic assets within these areas to temporarily shut down, close or relocate. Community activities of value located in coastal areas may also have to be canceled or rescheduled. Specific economic assets and community activities of value at risk to this hazard are discussed in the respective jurisdictional annexes to this Base Plan.

Impacts from Coastal Flooding and Sea Level Rise

All of the Tri-City Planning Area lands located in coastal areas are exposed to at least some level of inundation from coastal flooding and sea level rise. According to the 2020 Adapting to Rising Tides Short Report, coastal flooding is expected to worsen from sea level rise. It was noted that in the Tri-City Planning Area coastal flooding and sea level rise impacts include:

- A projected rise in sea level of between 15 and 55 inches will impact the Planning Area's shoreline through increased sand and bank erosion as well as the loss of land, directly affecting piers, levees, boat launches, developed wetland areas, and other shoreline facilities.
- More frequent coastal floods: Rising sea levels will lead to more frequent flooding of existing flood-prone areas, including more frequent overtopping and overbank flooding of riverine systems that already flood when rainfall coincides with high tides due to the increased backwater effect. In addition, gravity drained and pumped systems that discharge stormwater into flood control channels can have reduced performance, causing backups and flooding of streets.
- More extensive, longer-duration coastal flooding: As sea levels rise, storm events will flood larger areas for longer periods of time and that there will be new overtopping and overbank flooding of riverine systems that that do not currently cause flooding.

- Shoreline erosion and overtopping from coastal flooding: Sea level rise may cause shoreline protection, such as levees, berms and revetments, to be damaged or fail to due to increased tidal and wave energy. There is also the potential that shoreline protection will be overtopped during storm events when there are extreme tide levels and wind-driven waves, flooding inland areas, including homes and community services that are currently protected.
- Elevated groundwater and increased salinity intrusion: As sea levels rise, groundwater and salinity levels are also predicted to rise. This may cause damage to below grade living spaces, finished basements, and electrical/mechanical equipment that is below or at-grade. In addition, increasing groundwater levels may increase liquefaction susceptibility, and require the use of pumping of stormwater for flood management, which will increase both operations and maintenance costs.
- Permanent inundation: Sea level rise can cause areas that are not currently exposed to regular high tide inundation to be flooded, resulting in the need to either protect or move people and infrastructure, and the loss of trails, beaches, vistas, and other shoreline recreation areas. In addition, increased tidal scour due to increased tidal prism in riverine systems can trigger changes in channel geometry and sediment transport processes.
- As sea level rises, so will the groundwater table and salinity levels, which can impact the vegetation and habitat in shoreline parks, increase the areas subject to liquefaction in earthquakes and require the use of pumping of stormwater for flood management, increasing both operations and maintenance costs.

The Planning Committee noted that coastal flooding and sea level rise are exacerbated during king tides. King tides are simply the very highest tides. They are naturally occurring, predictable events. King tides of today may give an idea of future normal conditions that may occur due to sea level rise. High tides may coincide with heavy rain causing coastal flooding, coastal bluff erosion, and landslides, such as were experienced during the 1998 and 2016 El Nino storms. The 2023 California State Hazard Mitigation Plan noted that coupled with increased frequency, severity, and duration of high tide and storm events related to climate change, sea-level rise will exacerbate these extreme events along the coast. These events may expose the coast to severe flooding and erosion; damage to coastal structures, real estate, public access, and coastal habitats; and seawater intrusion into delta areas and coastal aquifers. El Niño events exacerbate storms and coastal inundation above that already occurring due to sea-level rise and normal coastal weather and tidal patterns.

Specific impacts to jurisdictions in the Tri-City Planning Area are discussed in their respective annexes to this Plan Update.

Future Development

How coastal flooding and sea level rise are taken into account in future development in each of the jurisdictions of the Tri-City Planning area will differ. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.8. Dam Failure

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped or fail. Overtopping is the primary cause of earthen dam failure in the United States.

Dam failures can also result from any one or a combination of the following causes:

- Earthquake
- Inadequate spillway capacity resulting in excess overtopping flows
- Internal erosion caused by embankment or foundation leakage, or piping or rodent activity
- Improper design
- Improper maintenance
- Negligent operation
- Failure of upstream dams on the same waterway

In general, there are three types of dams: concrete arch or hydraulic fill, earth and rockfill, and concrete gravity. Each type of dam has different failure characteristics. A concrete arch or hydraulic fill dam can fail almost instantaneously; the flood wave builds up rapidly to a peak then gradually declines. An earth-rockfill dam fails gradually due to erosion of the breach; a flood wave will build gradually to a peak and then decline until the reservoir is empty. A concrete gravity dam can fail instantaneously or gradually with a corresponding buildup and decline of the flood wave.

The CA DWR Division of Safety of Dams (DSOD) has jurisdiction over impoundments that meet certain capacity and height criteria. Embankments that are less than six feet high and impoundments that can store less than 15 acre-feet are non-jurisdictional. Additionally, dams that are less than 25 feet high can impound up to 50 acre-feet without being jurisdictional. Cal DWR, DSOD assigns hazard ratings to large "jurisdictional sized" dams within the State. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that identify the potential hazard to life and property:

- **Extremely High Hazard** – Expected to cause considerable loss of human life or would result in an inundation area with a population of 1,000 or more.
- **High Hazard** – Expected to cause loss of at least one human life.

- **Significant Hazard** – No probable loss of human life but can cause economic loss, environmental damage, impacts to critical facilities, or other significant impacts.
- **Low Hazard** – No probable loss of human life and low economic and environmental losses. Losses are expected to be principally limited to the owner's property.

Location and Extent

According to data provided by Cal DWR and Cal OES, there are 23 dams in Alameda County that were constructed for flood control, storage, treatment impoundments, electrical generation, and recreational purposes. Of the 23 dams in Alameda County, 11 were rated as Extremely High Hazard, 7 are rated as High Hazard, 3 as Significant Hazard, 2 as Low Hazard. Figure 4-39 identifies the dams in the County surrounding Tri-City, which are also detailed in Table 4-35.

Figure 4-39 Tri-City Planning Area Dam Inventory

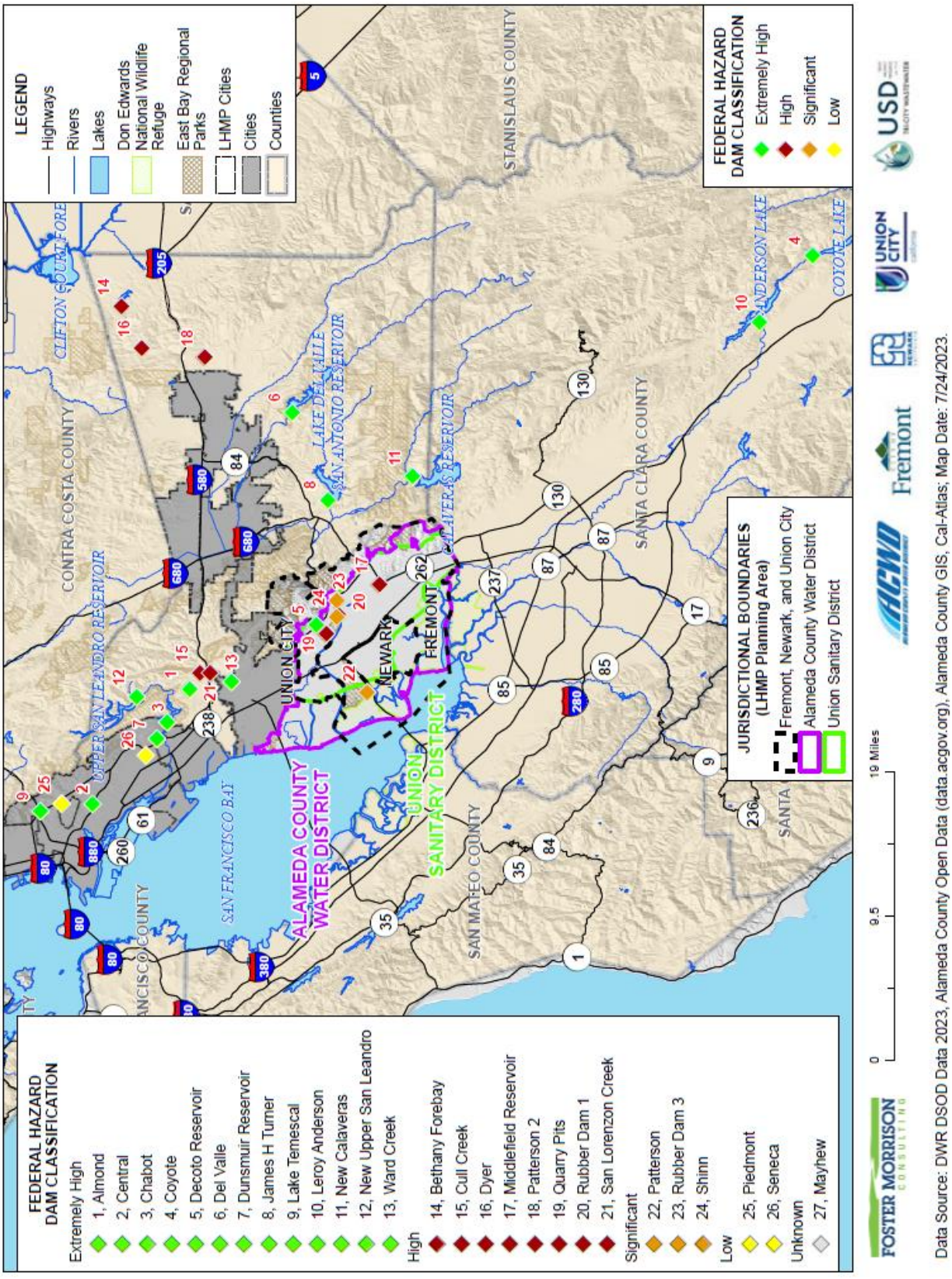


Table 4-35 Tri-City Planning Area Dam Inventory

Name	Significance	Owner	Dam Type	Structural Height (ft)	Maximum Storage (acre-ft)
Almond	Extremely High	East Bay Municipal Utility District	Earthen Embankment	30	20
Bethany Forebay	High	CA DWR	Earthen Embankment	95	5,000
Central	Extremely High	East Bay Municipal Utility District	Earthen Embankment	55	485
Chabot	Extremely High	East Bay Municipal Utility District	Hydraulic Fill	142	10,281
Coyote	Extremely High	Santa Clara Valley Water District	Earthen Rockfill	140	22,451
Cull Creek	High	Alameda County Public Works	Earthen Embankment	55	140
Decoto Reservoir	Extremely High	Alameda County Water District	Earthen Embankment	33	46
Del Valle	Extremely High	CA DWR	Earthen Embankment	222	77,100
Dunsmuir Reservoir	Extremely High	East Bay Municipal Utility District	Reinforced Concrete Tank	43	197
Dyer	High	CA DWR	Earthen Embankment	30	525
James H Turner	Extremely High	City and County of San Francisco	Earthen Embankment	193	50,500
Lake Temescal	Extremely High	East Bay Regional Park District	Earthen Embankment	116	200
Leroy Anderson	Extremely High	Santa Clara Valley Water District	Earthen Embankment	235	91,300
Middlefield Reservoir	High	Alameda County Water District	Earthen Embankment	147	22
New Calaveras	Extremely High	City and County of San Francisco	Earthen Embankment	210	96,850
New Upper San Leandro	Extremely High	East Bay Municipal Utility District	Earthen Embankment	182	42,000
Patterson	Significant	Alameda County Water District	Earthen Embankment	100	56
Patterson 2	High	CA DWR	Earthen Embankment	39	104
Piedmont	Low	East Bay Municipal Utility District	Earthen Embankment	64	60
Quarry Pits	High	Alameda County Water District	Earthen Embankment	26	3,360
Rubber Dam 3	Significant	Alameda County Water District	Earthen Embankment	17	154

Name	Significance	Owner	Dam Type	Structural Height (ft)	Maximum Storage (acre-ft)
San Lorenzon Creek	High	Alameda County Public Works	Inflatable	65	380
Seneca	Low	East Bay Municipal Utility District	Earthen Embankment	40	92
Shinn	Significant	Alameda County Water District	Earthen Embankment	45	390
Ward Creek	Extremely High	Alameda County Public Works	Earthen Embankment	71	13

Source: Cal OES, National Performance of Dams Program

*One acre foot equals 325,000 gallons

Once a list of dams was established, dam inundation layers were obtained from DSOD and Cal OES in GIS. Dams with an inundation area in the Tri-City Planning Area are shown on Figure 4-40 (for extremely high hazard dams outside the Planning Area), Figure 4-41 (for extremely high hazard dams inside the Planning Area), Figure 4-42 (for high hazard dams inside the Planning Area), and Figure 4-43 (for significant hazard dams inside the Planning Area). Geographic flood extents as shown on the dam inundation maps are detailed by dam in Table 4-36 for extremely high hazard dams, in Table 4-37 for high hazard dams, and in Table 4-38 for significant hazard dams.

There is no scale with which to measure dam failure, only a scale to measure dam failure vulnerability based on size of dam and proximity to development. Dam failure may range from a small breach to a total failure. While a dam may fill slowly with runoff from winter storms, a dam break can have a very quick speed of onset. The duration of dam failure is not long – only as long as it takes to empty the reservoir of water the dam held back.

While a dam may fill slowly with runoff from winter storms, a dam break has a very quick speed of onset. The duration of dam failure is generally not long – only as long as it takes to empty the reservoir of water the dam held back. For dam overtopping, the speed of onset is somewhat slower than that of a dam break, and the duration is longer (as evidenced in the 2017 Oroville Dam event). The Tri-City Planning Area would be affected for as long as the flood waters from the dam failure takes to drain downstream.

Figure 4-40 Tri-City Planning Area – Extremely High Hazard Dam Inundation Areas from Dams Originating Outside the Tri-City Planning Area

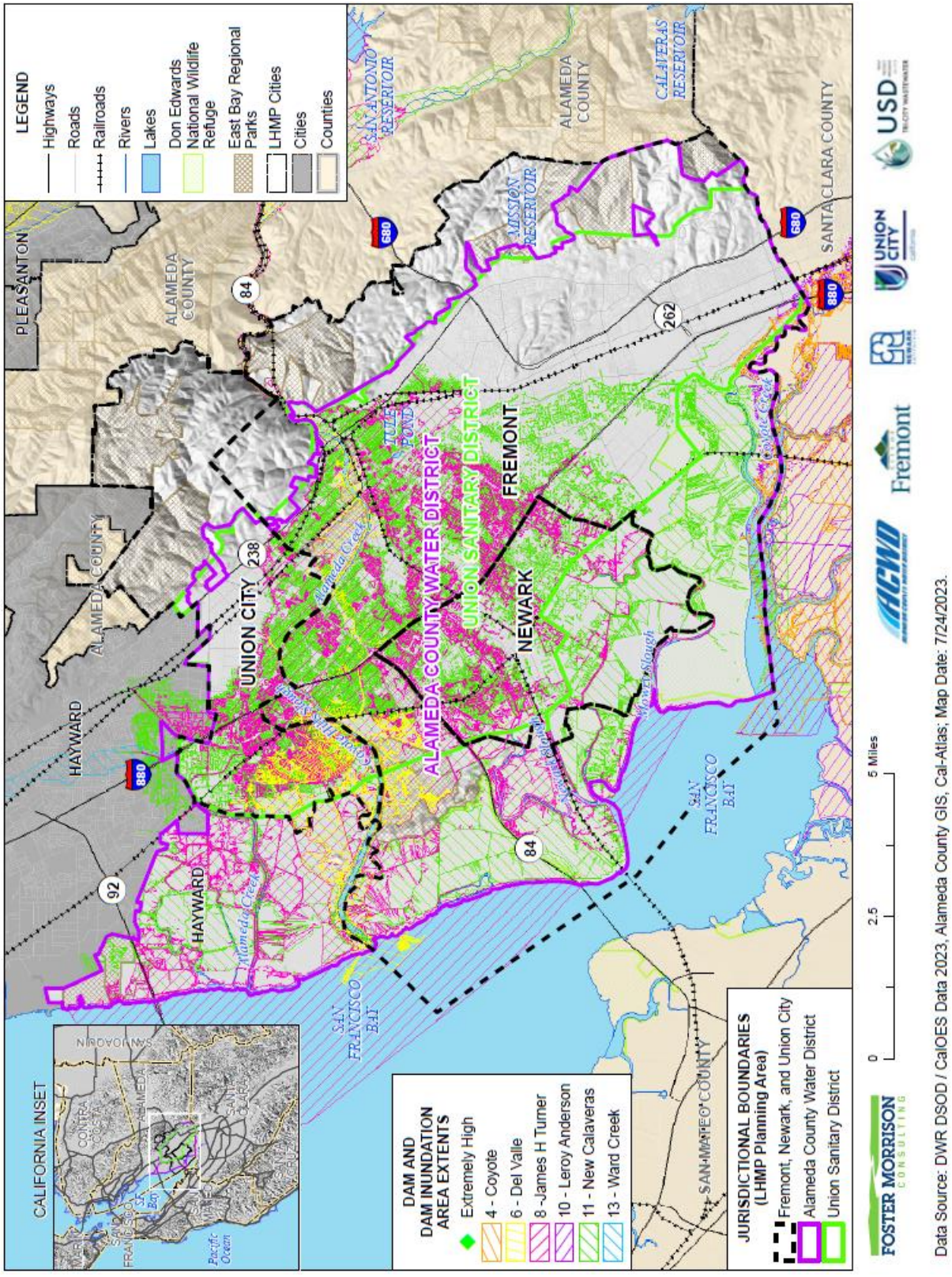


Figure 4-41 Tri-City Planning Area – Extremely High Hazard Dam Inundation Areas from Dams Originating Inside the Tri-City Planning Area

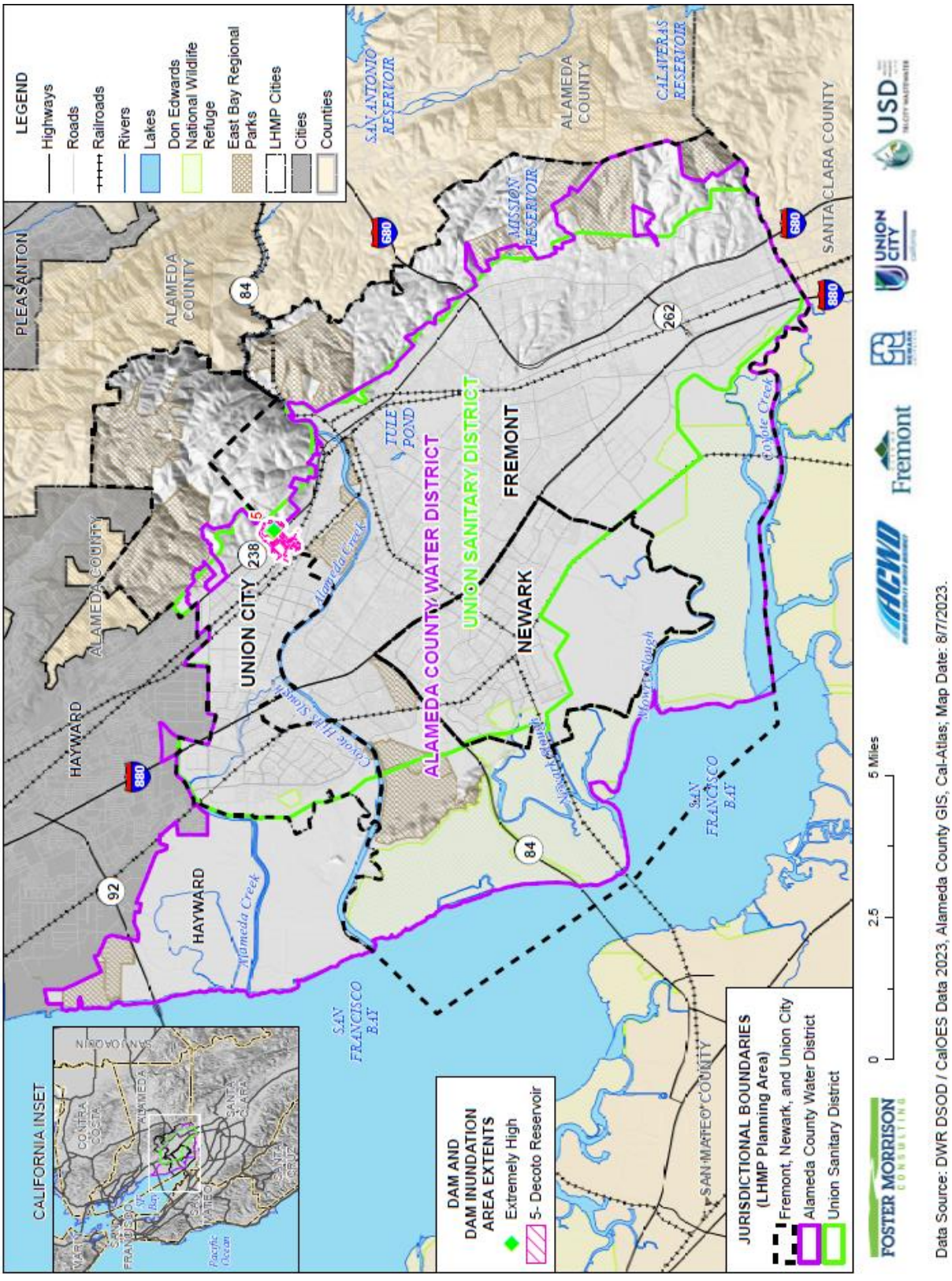


Table 4-36 Tri-City Planning Area –Geographical (Extremely High Hazard) Dam Inundation Extents

Jurisdiction /Extremely High Dam Inundation Areas	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Coyote	647.32	0.80%	3.51	0.01%	643.81	1.87%
Decoto Reservoir	24.45	0.03%	18.7	0.04%	5.75	0.02%
Del Valle	1,940.12	2.39%	127.89	0.27%	1,812.23	5.26%
James H Turner	28,028.75	34.57%	17,798.17	38.17%	10,230.58	29.69%
Leroy Anderson	949.66	1.17%	10.52	0.02%	939.14	2.73%
New Calaveras	29,686.50	36.61%	16,514.82	35.42%	13,171.68	38.22%
Newark						
James H Turner	1,873.37	12.75%	982.87	10.31%	890.5	17.29%
New Calaveras	6,541.84	44.54%	3,593.36	37.68%	2,948.48	57.24%
Union City						
Decoto Reservoir	40.2	0.24%	23.01	0.25%	17.19	0.23%
Del Valle	442.26	2.65%	94.4	1.01%	347.86	4.75%
James H Turner	6,403.72	38.42%	5,542.35	59.33%	861.37	11.76%
New Calaveras	5,954.92	35.73%	4,881.54	52.26%	1,073.37	14.65%
Alameda County Water District						
Coyote	580.47	0.54%	3.51	0.01%	576.96	1.35%
Decoto Reservoir	61.92	0.06%	39.12	0.06%	22.8	0.05%
Del Valle	2,985.60	2.80%	210.49	0.33%	2,775.12	6.48%
James H Turner	36,601.78	34.27%	24,309.03	38.00%	12,292.75	28.69%
Leroy Anderson	877.27	0.82%	10.52	0.02%	866.75	2.02%
New Calaveras	47,694.44	44.65%	25,041.52	39.15%	22,652.92	52.88%
Ward Creek	1.45	0.00%	1.16	0.00%	0.29	0.00%
Union Sanitary District						
Coyote	119.73	0.15%	3.51	0.01%	116.22	0.82%

Jurisdiction /Extremely High Dam Inundation Areas	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Decoto Reservoir	64.56	0.08%	41.71	0.07%	22.84	0.16%
Del Valle	1,416.19	1.83%	220.27	0.35%	1,195.93	8.45%
James H Turner	29,783.26	38.43%	24,309.06	38.38%	5,474.21	38.66%
Leroy Anderson	150.75	0.19%	10.52	0.02%	140.23	0.99%
New Calaveras	31,348.54	40.45%	24,661.21	38.93%	6,687.33	47.23%
Ward Creek	1.45	0.00%	1.16	0.00%	0.29	0.00%

Source: Cal OES/DSOD

Figure 4-42 Tri-City Planning Area – High Hazard Dam Inundation Areas from Dams Originating Inside the Tri-City Planning Area

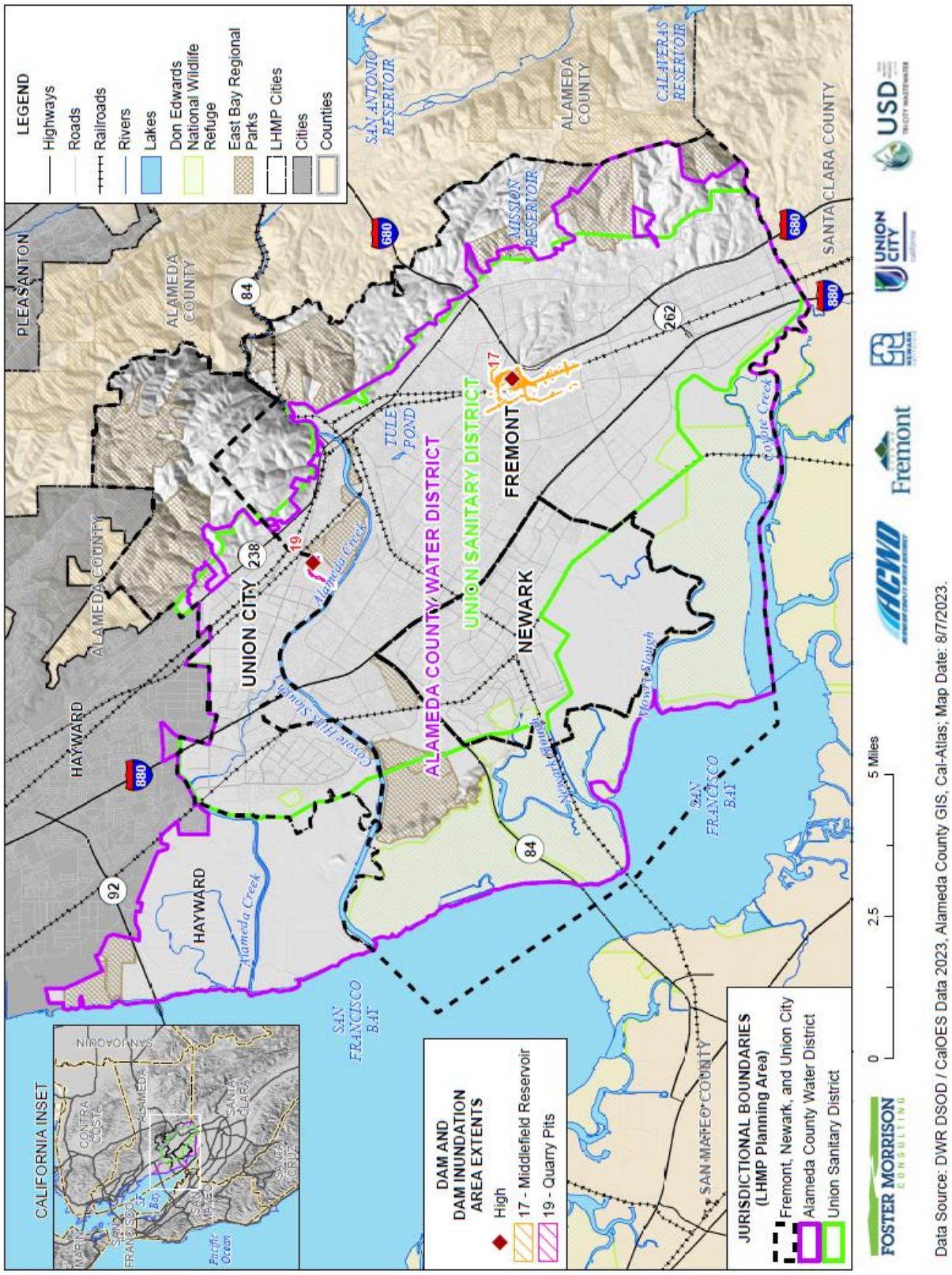


Table 4-37 Tri-City Planning Area –Geographical (High Hazard) Dam Inundation Extents

Jurisdiction / High Dam Inundation Areas	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Middlefield Res	72.16	0.09%	58.66	0.13%	13.5	0.04%
Quarry Pits	7.25	0.01%	0	0.00%	7.25	0.02%
Union City						
Quarry Pits	7.18	0.04%	0	0.00%	7.18	0.10%
Alameda County Water District						
Middlefield Res	72.16	0.07%	58.66	0.09%	13.5	0.03%
Quarry Pits	14.43	0.01%	0	0.00%	14.43	0.04%
Union Sanitary District						
Middlefield Res	72.16	0.09%	58.66	0.09%	13.5	0.10%
Quarry Pits	14.43	0.02%	0	0.00%	14.43	0.10%

Source: Cal OES/DSOD

Figure 4-43 Tri-City Planning Area – Significant Hazard Dam Inundation Areas from Dams Originating Inside the Tri-City Planning Area

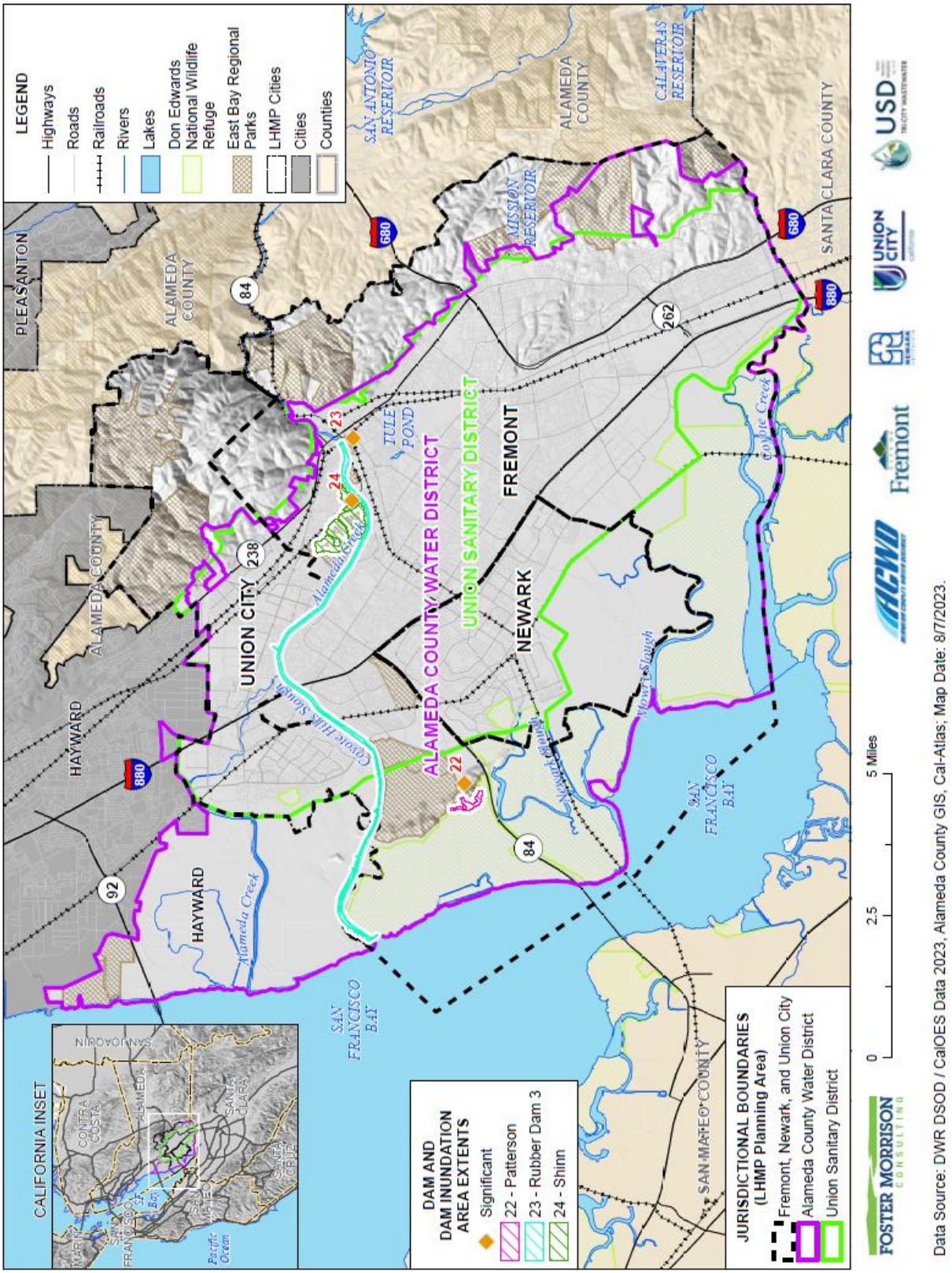


Table 4-38 Tri-City Planning Area –Geographical (Significant Hazard) Dam Inundation Extents

Jurisdiction / Significant Dam Inundation Areas	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Patterson	35.85	7.0%	0	0.0%	35.85	7.0%
Rubber Dam 3	185.84	36.4%	0	0.0%	185.84	36.4%
Shinn	288.97	56.6%	0	0.0%	288.97	56.6%
Union City						
Rubber Dam 3	0.78	100.0%	0	0.0%	0.78	100.0%
Alameda County Water District						
Patterson	35.85	6.4%	0	0.0%	35.85	6.4%
Rubber Dam 3	232.47	41.7%	0	0.0%	232.47	41.7%
Shinn	288.97	51.9%	0	0.0%	288.97	51.9%
Union Sanitary District						
Rubber Dam 3	152.61	34.6%	0	0.0%	152.61	34.6%
Shinn	288.97	65.4%	0	0.0%	288.97	65.4%

Source: Cal OES, DSOD

Past Occurrences

Disaster Declaration History

There have been no disasters declarations related to dam failure in Alameda County as shown in Table 4-5.

NCDC Events

There have been no NCDC dam failure events in Alameda County.

National Performance of Dams Program Events

The National Performance of Dams Program at Stanford University tracks dam failures. A search of the National Performance of Dams Program database showed no past dam failure events affecting the Tri-City Planning Area.

Planning Committee Events

The Planning Committee noted no past dam failure events to affect the Tri-City Planning Area. However, two events that were close calls were noted:

- **1918 Calaveras Dam Failure**—The San Francisco Public Utilities Commission-owned Calaveras Dam, located in Alameda County, failed during construction in 1918. A landslide damaged the upstream shell of the dam and destroyed the dam's outlet tower. This event occurred prior to the incorporation of the cities.
- **2015 Rubber Dam 3 Failure**—In 2015, the inflatable dam on Alameda Creek (Rubber Dam 3) failed due to vandalism, releasing nearly 50 million gallons of water from the community's water into the San Francisco Bay. The water was supposed to go into the Niles Cone Groundwater Basin where residents and businesses from the Cities of Newark, Union City and Fremont could access drinking water. No damages occurred from the release of the water.

Likelihood of Future Occurrences

Unlikely– There have been few recorded events of dam failure or other issues of concern. Based on past occurrences and the rigorous monitoring and inspection requirements for dams, a dam failure may occur in the future that would impact the Tri-City Planning Area is unlikely. The Planning Committee noted that it could be considered to be occasional based on aging dam systems and variety of dam owners, some with limited resources to properly maintain dams.

Climate Change and Dam Failure

Increases in precipitation in areas upstream of dams could increase the potential for dam failure and uncontrolled releases on the dam that could affect the Planning Area.

Vulnerability Assessment

Vulnerability—High

Dam failure flooding can occur as the result of a partial or complete collapse of an impoundment. Dam failures often result from prolonged rainfall and flooding. An earthquake event can also contribute to a dam failure. The primary danger associated with dam failure is the high velocity flooding of those properties downstream of the dam. A dam failure can range from a small, uncontrolled release to a catastrophic failure. Vulnerability to dam failures is generally confined to the areas subject to inundation downstream of the facility. Secondary losses would include loss of the multi-use functions of the facility and associated revenues that accompany those functions. Dam failure flooding would vary by community depending on which dam fails and the nature and extent of the dam failure and associated flooding.

Vulnerability of the community is discussed in multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include assets at risk, impacts, and how future development can be affected by this hazard.

Assets at Risk from Dam Failure

Assets at risk from dam failure include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources, economic assets, and community activities of value). These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

Methodology and Results

In order to analyze people and populations, structures, and critical facilities at risk in dam inundation areas, GIS was used to quantify those values. The 2023 Alameda County Parcel/Assessor Data was provided by City of Fremont GIS and was used as the basis for the inventory of assessed values for both improved and unimproved parcels within the Tri-City Planning Area. The dam inundation areas, obtained from DSOD and Cal OES, were then overlaid on the parcel layer. For the purposes of this analysis, if the dam inundation layer intersected any portion of a parcel polygon, the entire parcel was considered to be in the dam inundation area. The parcels were segregated and analyzed in this fashion for the entire Planning Area.

People and Populations

All people and populations located in dam inundation areas are vulnerable to dam failure. Certain vulnerable populations may be at increased risk to dam failure, especially during a large event with minimal advance notice. These vulnerable populations may include: the unhoused, those with limited mobility, and those that lack the resources to leave the area.

Planning Area residents that live in these dam inundation areas are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To future evaluate the impact to the Tri-City's Planning Area's residential populations located in these hazard areas, a separate analysis was performed to determine residential populations in the dam inundation areas. The DSOD and Cal OES dam inundation areas were overlayed on the parcel layer and linked to the Assessor Data. Those residential parcel centroids that intersect the dam inundation areas were counted and multiplied by the Census Bureau average household factors for each jurisdiction. This is shown in Table 4-39. As shown, the Planning Area has high numbers of residents at risk to the James Turner and New Calaveras dams. Risk is smaller from the Del Valle, Decoto, and Middlefield dam, but is still sizable.

Table 4-39 Tri-City Planning Area – Improved Residential Parcels and Population by Dam Inundation Area and City Jurisdictions

Dam Inundation Area/Dams	City of Fremont		City of Newark		City of Union City	
	Improved Residential Parcels	Population	Improved Residential Parcels	Population	Improved Residential Parcels	Population
Extremely High Hazard Dams Inside Planning Area						
Decoto	278	831	0	0	186	627
Extremely High Hazard Dams Outside Planning Area						
New Calaveras	50,281	150,340	12,073	40,082	13,119	44,211
Coyote	0	0	0	0	0	0
Del Valle	1,889	5,648	0	0	3,234	9,670

Dam Inundation Area/Dams	City of Fremont		City of Newark		City of Union City	
	Improved Residential Parcels	Population	Improved Residential Parcels	Population	Improved Residential Parcels	Population
James Turner	39,163	117,097	6,783	22,520	11,478	38,681
Leroy Anderson	0	0	0	0	0	0
Ward Creek	0	0	0	0	0	0
High Hazard Dams						
Middlefield	183	547	0	0	0	0
Quarry Pits	0	0	0	0	1	3
Significant Hazard Dams						
Patterson	0	0	0	0	0	0
Rubber Dam 3	0	0	0	0	0	0
Shinn	0	0	0	0	0	0

Source: Cal OES, DSOD, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), 2020 US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37.

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums as well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

For the special districts of ACWD and USD, analysis of their service territory populations in the dam failure inundation areas is performed. This is derived from the table above. This analysis can be found in their respective annexes to this Base Plan.

Structures

Most structures in the Tri-City Planning Area have some measure of risk to dam failure. Dam failure flooding can affect the built environment of the entire Tri-City Planning Area. Structures in dam inundation areas are at risk and depending on flood depths, can range from slight damage to totally inundated. Analysis by extremely high hazard dam, high hazard dam, and significant hazard dam follows.

Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values that fall within dam inundation areas in the Planning Area are presented below by hazard class and by dam. The results are presented in tables below by:

- Extremely High Hazard Dams Originating Inside the Planning Area (Table 4-40)
- Extremely High Hazard Dams Originating Outside the Planning Area (Table 4-41, Table 4-42, Table 4-43, Table 4-44, Table 4-45, and Table 4-46)
- High Hazard Dams Originating Inside the Planning Area (Table 4-47 and Table 4-48)
- Significant Hazard Dams Originating Inside the Planning Area

Extremely High Hazard Dams Originating Inside the Tri-City Planning Area

Table 4-40 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Decoto Reservoir Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	314	281	$89,386,815	$196,156,707	$108,571,568	$394,115,090
Newark	0	0	$0	$0	$0	$0
Union City	229	187	$39,450,960	$93,979,383	$47,640,756	$181,071,099
Alameda County Water District (Service Territory)	539	467	$127,680,257	$288,114,630	$155,201,594	$570,996,481
Union Sanitary District (Service Territory)	542	468	$128,837,775	$290,136,090	$156,212,324	$575,186,189

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Extremely High Hazard Dams Originating Outside the Tri-City Planning Area

Table 4-41 City of Fremont – Count and Value of Parcels (and Structures) in New Calaveras Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	54,625	51,415	$12,156,391,286	$25,367,306,222	$15,246,062,650	$52,769,760,158
Newark	13,807	12,412	$3,441,935,461	$6,747,526,662	$4,676,583,742	$14,866,045,865
Union City	14,168	13,434	$2,884,960,639	$6,479,108,991	$3,877,243,193	$13,241,312,823
Alameda County Water District (Service Territory)	82,677	77,293	$18,528,197,410	$38,618,694,625	$23,829,033,000	$80,975,925,035
Union Sanitary District (Service Territory)	82,276	77,249	$18,413,592,760	$38,591,624,600	$23,801,878,725	$80,807,096,085

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-42 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Coyote Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	62	12	$108,413,503	$165,757,548	$226,884,071	$501,055,122
Newark	0	0	$0	$0	$0	$0
Union City	0	0	$0	$0	$0	$0
Alameda County Water District (Service Territory)	60	12	$108,413,503	$165,757,548	$226,884,071	$501,055,122
Union Sanitary District (Service Territory)	26	12	$108,413,503	$165,757,548	$226,884,071	$501,055,122

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-43 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Del Valle Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	2,324	1,921	$729,556,612	$1,781,036,922	$1,333,534,362	$3,844,127,896
Newark	0	0	$0	$0	$0	$0
Union City	3,355	3,247	$545,803,250	$1,266,137,336	$640,768,228	$2,452,708,814
Alameda County Water District (Service Territory)	5,661	5,156	$1,271,298,057	$3,034,669,915	$1,961,811,676	$6,267,779,648
Union Sanitary District (Service Territory)	5,619	5,165	$1,271,044,378	$3,039,514,795	$1,966,656,556	$6,277,215,729

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-44 Tri-City Planning Area – Count and Value of Parcels (and Structures) in James Turner Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	42,416	39,798	$9,018,348,037	$19,817,271,325	$11,493,797,650	$40,329,417,012

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Newark	7,655	7,030	$2,014,035,274	$3,979,664,752	$3,109,277,591	$9,102,977,617
Union City	12,346	11,704	$2,335,996,238	$5,257,507,533	$3,002,980,600	$10,596,484,371
Alameda County Water District (Service Territory)	62,435	58,524	$13,372,199,132	$29,043,204,554	$17,594,834,950	$60,010,238,636
Union Sanitary District (Service Territory)	62,219	58,520	$13,317,690,728	$29,042,910,180	$17,595,396,046	$59,955,996,954

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-45 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Leroy Anderson Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	83	22	$131,535,059	$200,908,287	$251,567,089	$584,010,435
Newark	0	0	$0	$0	$0	$0
Union City	0	0	$0	$0	$0	$0
Alameda County Water District (Service Territory)	81	22	$131,535,059	$200,908,287	$251,567,089	$584,010,435
Union Sanitary District (Service Territory)	46	22	$131,535,059	$200,908,287	$251,567,089	$584,010,435

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-46 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Ward Creek Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	0	0	$0	$0	$0	$0
Newark	0	0	$0	$0	$0	$0
Union City	0	0	$0	$0	$0	$0

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Alameda County Water District (Service Territory)	5	4	$5,281,147	$1,905,723	$1,905,723	$9,092,593
Union Sanitary District (Service Territory)	5	4	$5,281,147	$1,905,723	$1,905,723	$9,092,593

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

High Hazard Dams Originating Inside the Tri-City Planning Area

Table 4-47 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Middlefield Reservoir Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	424	335	140,553,833	251,078,397	187,491,620	579,123,850
Newark	0	0	$0	$0	$0	$0
Union City	0	0	$0	$0	$0	$0
Alameda County Water District (Service Territory)	424	335	140,553,833	251,078,397	187,491,620	579,123,850
Union Sanitary District (Service Territory)	424	335	140,553,833	251,078,397	187,491,620	579,123,850

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table 4-48 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Quarry Pits Dam Inundation Area by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	9	0	$0	$0	$0	$0
Newark	0	0	$0	$0	$0	$0
Union City	8	1	417,376	973,879	486,940	1,878,195

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Alameda County Water District (Service Territory)	17	1	417,376	973,879	486,940	1,878,195
Union Sanitary District (Service Territory)	17	1	417,376	973,879	486,940	1,878,195

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Significant Hazard Dams Originating Inside the Tri-City Planning Area

After a review of significant hazard dams and their risk to the Planning Area, it was found that no improved parcels are affected by the significant hazard dam inundation areas. Only 5 unimproved parcels with no associated values (in the City of Fremont) fell in this area. Therefore, no tabular analysis was performed.

Critical Facilities and Infrastructure, and Community Lifelines

Dam failure presents a threat to critical facilities and infrastructure, and community lifelines. The following GIS analysis identifies critical facilities and infrastructure at risk to dam inundation flooding, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Dam failure flooding presents a threat to life and property, including community lifelines in the Tri-City Planning Area. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Community lifelines that would be at risk to dam failure flooding include:

- **Safety and Security** – Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. This would be especially true in a dam failure event. Search and rescue and swiftwater teams may be called on to perform riskier duties during times of heavy rains and flooding.
- **Food, Hydration, Shelter** – a dam failure would displace many residents in the Planning Area. Some would need shelter, as well as food and water.
- **Health and Medical** – There is the potential for multiple injuries and deaths from a catastrophic dam failure taxing health and medical facilities. Casualty and patient movement from the inundation areas and unrelated incidents by EMS may be significantly impacted and have to be rerouted. Public health facilities can also be at risk from flooding caused by dam failures.

- **Energy** – Dam failure could impact large areas of above ground electric infrastructure, causing widespread power outages. Dam failure could also affect fueling stations, as well as electric car charging stations.
- **Communications** – An influx of service calls to dispatch centers for reporting of flooding, power outages, and rescues or other issues can occur resulting in communication networks going down for extended periods of time. Messaging systems need to be deployed during these events to let the public know about road closures, washouts, debris on roads, or lane closures. Calls to and from family and friends during a hazard event can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts.
- **Transportation** – Highways and local roads may see extensive flooding. Bridges can be damaged or destroyed. This can cause lane closures or road closures and limit available routes altogether. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Evacuation efforts may be difficult and further put people at risk of death or injury.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these events can contribute to the dangers of floodwaters and cause contamination of potable water sources, as well as additional exposure to the environment.
- **Water Systems** – Any water (or wastewater) system located in a dam inundation area may be affected by dam failure flooding. The Planning Area's stormwater drainage system and facilities may also be affected.

A large dam failure event could overwhelm many critical facilities and infrastructure in the Tri-City Planning Area. As shown on the maps and tables above, there are multiple dams that would affect large swaths of the Planning Area. A failure of many of these dams could, at least temporarily, overwhelm the community lifelines in place in affected areas of the Planning Area.

Natural, Historic, and Cultural Resources

A major dam failure event and associated flooding could have a devastating impact on the Tri-City Planning Area. Large flood events can affect all natural, historic, and cultural resources that lie in the dam inundation areas. There are a number of ways floodwaters associated with a dam failure event can impact natural resources and the environment: Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to these structures within the inundated areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme flood events.

Economic Assets and Community Activities of Value

As shown on the maps and tables above, there are multiple dams that would affect large swaths of the Tri-City Planning Area should they fail. Most economic assets of the Planning Area would be at least temporarily disrupted. Many of these would come back online relatively quickly after a dam failure flood event, but some would take longer to re-engage in business. Some economic assets may be damaged to the point where the business or area would no longer be economically viable to continue to operate. Depending

on the dam that failed, most community activities of value would be affected if they occurred during a dam failure event.

Impacts from Dam Failure

Impacts to the Tri-City Planning Area from dam failure flooding could be extensive and widespread and include loss of life and injury, flooding and damage to property and structures, damage to critical facilities and infrastructure, loss of natural resources, and all other flood related impacts. Additionally, mass evacuations and associated economic losses can also be significant.

Other impacts associated with dam failure are landslides, bank erosion, and destruction of habitat. Dam failures can cause downstream flooding and can transport large volumes of sediment and debris and contaminants from the floodwaters. Other environmental impacts can include contamination from septic system failures and releases of contaminants from hazardous materials facilities, contamination of potable water supplies; changes in configurations of streams; loss of wildlife habitats; and degradation of wetlands. A large dam failure event could have significant and catastrophic impacts.

Future Development

How dam failures are taken into account in future development in each of the jurisdictions of the Tri-City Planning area will differ. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.9. Drought and Water Shortage

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Drought

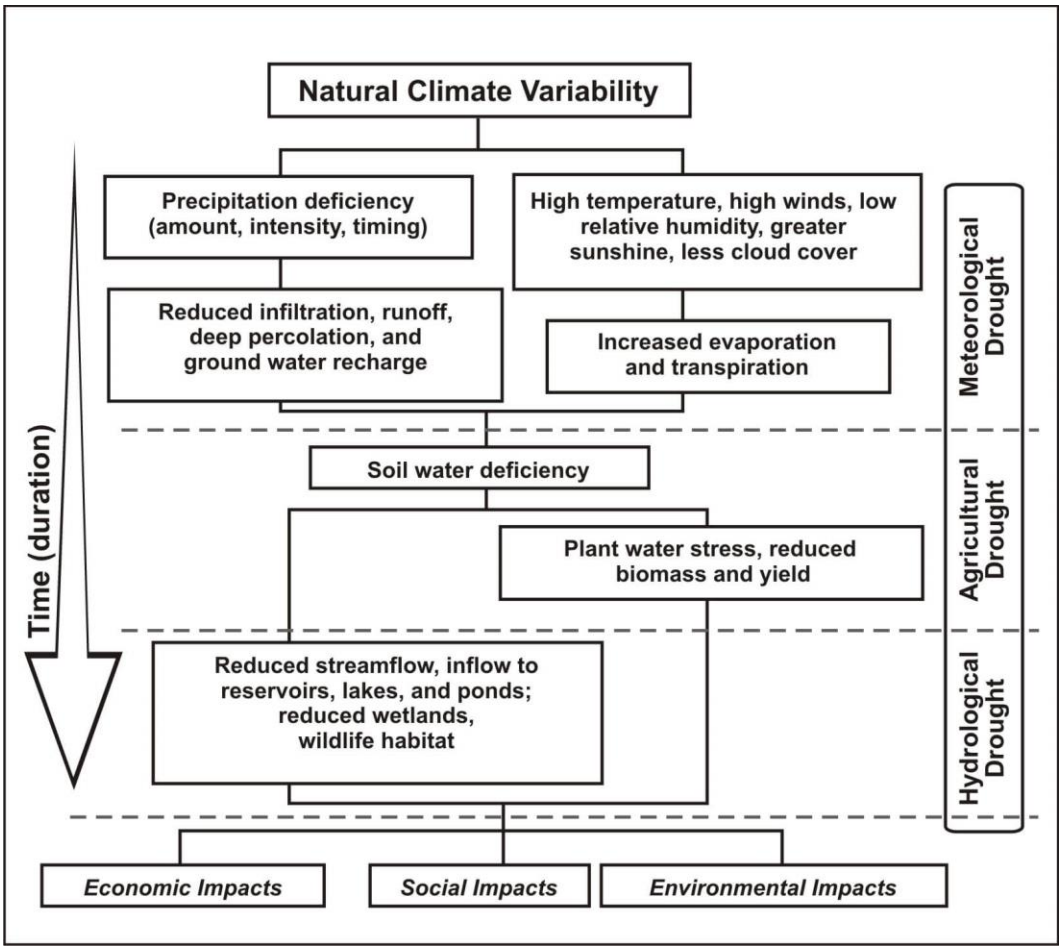
Drought is a gradual phenomenon. Although droughts are sometimes characterized as emergencies, they differ from typical emergency events. Most natural disasters, such as floods or forest fires, occur relatively rapidly and afford little time for preparing for disaster response. Droughts occur slowly, over a multi-year period, and it is often not obvious or easy to quantify when a drought begins and ends.

Drought is a complex issue involving (see Figure 4-44) many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects:

- **Meteorological drought** is usually defined by a period of below average water supply.

- **Agricultural drought** occurs when there is an inadequate water supply to meet the needs of the state's crops and other agricultural operations such as livestock.
- **Hydrological drought** is defined as deficiencies in surface and subsurface water supplies. It is generally measured as streamflow, snowpack, and as lake, reservoir, and groundwater levels.
- **Socioeconomic drought** occurs when a drought impacts health, well-being, and quality of life, or when a drought starts to have an adverse economic impact on a region.

Figure 4-44 Causes and Impacts of Drought



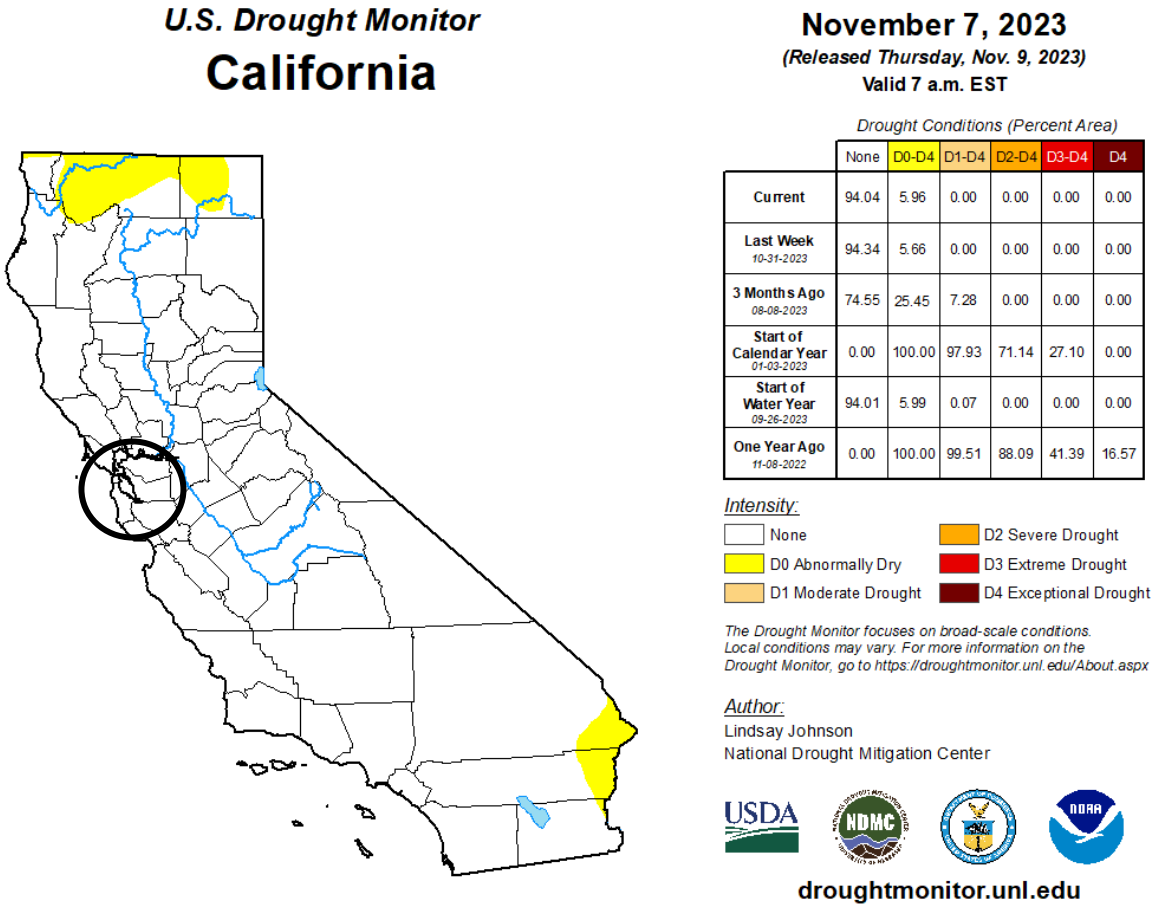
Source: National Drought Mitigation Center (NDMC)

Location and Extent of Drought

Drought is a regional phenomenon that affects the entire Tri-City Planning Area. Drought in the United States is monitored by the National Integrated Drought Information System (NIDIS). A major component of this portal is the U.S. Drought Monitor. The Drought Monitor concept was developed jointly by the NOAA's Climate Prediction Center, the NDMC, and the USDA's Joint Agricultural Weather Facility in the late 1990s as a process that synthesizes multiple indices, outlooks and local impacts, into an assessment that best represents current drought conditions. The final outcome of each Drought Monitor is a consensus of federal, state, and academic scientists who are intimately familiar with the conditions in their respective regions. A snapshot of the current 2023 drought conditions in California and the Tri-City Planning Area

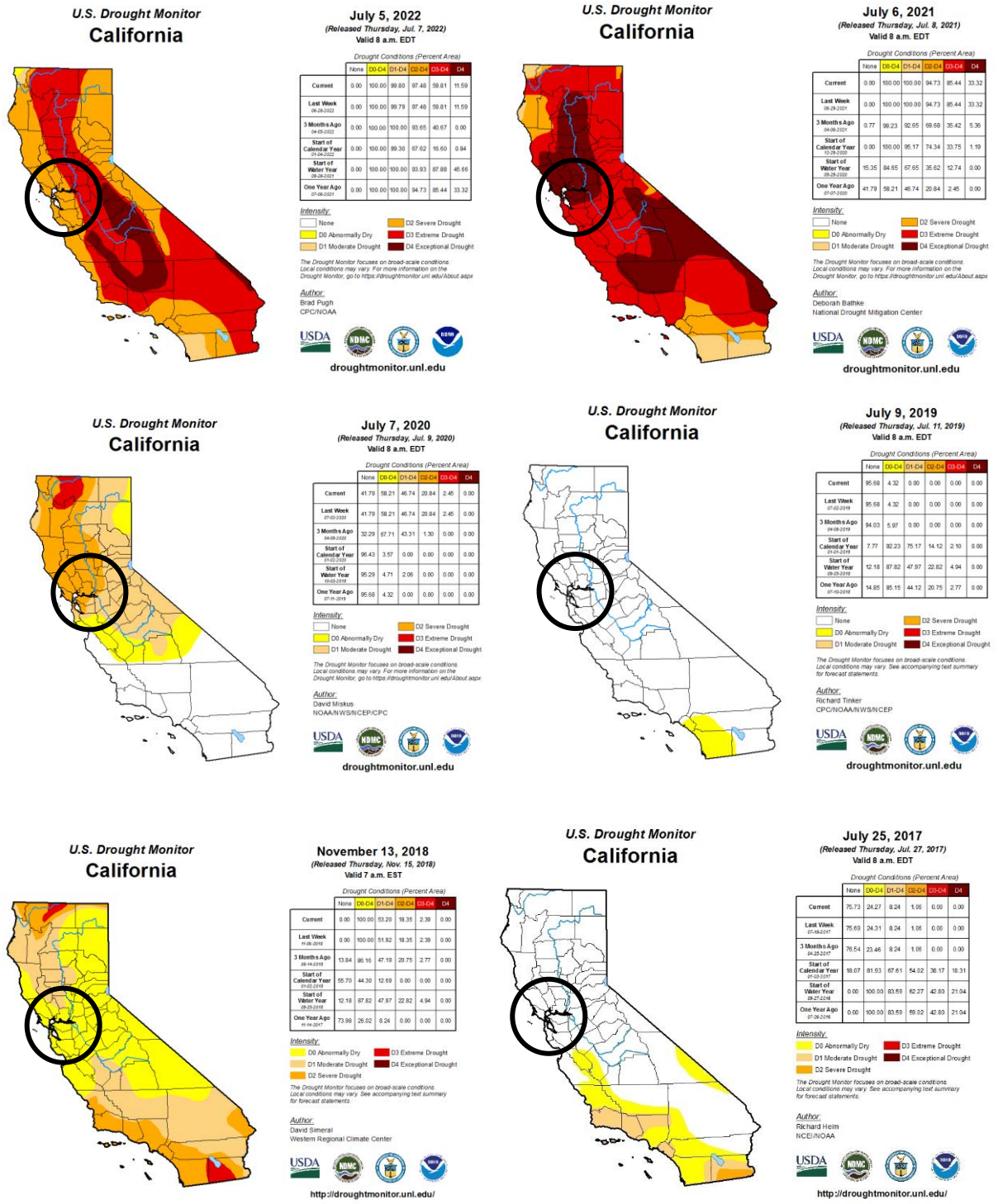
can be found in Figure 4-45. Snapshots from 2017, 2018, 2019, 2020, 2021, 2022, and 2023 are shown in Figure 4-46. As seen in these figures and related data, the Planning Area has been in and out of drought over the past eight years since the last drought started in 2014.

Figure 4-45 Tri-City Planning Area – Current Drought Status



Source: US Drought Monitor

Figure 4-46 Previous Drought Status in the Planning Area



Source: US Drought Monitor

Cal DWR says the following about drought:

One dry year does not normally constitute a drought in California. California's extensive system of water supply infrastructure—its reservoirs, groundwater basins, and inter-regional conveyance facilities—mitigates the effect of short-term dry periods for most water users. Defining when a drought begins is a function of drought impacts to water users. Hydrologic conditions constituting a drought for water users in one location may not constitute a drought for water users elsewhere, or for water users having a different water supply. Individual water suppliers may use criteria such as rainfall/runoff, amount of water in storage, or expected supply from a water wholesaler to define their water supply conditions.

The drought issue in California is further compounded by water rights. Water is a commodity possessed under a variety of legal doctrines. The prioritization of water rights between domestic uses, farming and federally protected fish habitats in California further contributes to this issue.

As shown on the previous figures, drought is tracked by the US Drought Monitor. The Drought Monitor includes a scale to measure drought intensity:

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)

Drought has a slow onset and long duration. Drought is not initially recognized as a problem because it normally originates in what is considered good weather, which typically includes a dry late spring and summer in Mediterranean climates, such as in California. This is particularly true in Northern California where drought impacts are delayed for most of the population by the wealth of stored surface and ground water. The drought complications normally appear more than a year after a drought begins. The most direct and likely most difficult drought impact to quantify is to local economies, especially agricultural economies. Drought has the potential to affect the entire Tri-City Planning Area.

Water Shortage

Northern California communities, including the Tri-City Planning Area, generally have sufficient groundwater and surface water supplies to mitigate even the severest droughts of the past century. Many other areas of the State, however, also place demands on these water resources during severe drought.

ACWD noted that the supplies of water available to them (as the service provider in the Tri-City Planning Area) are quite robust.

Location and Extent of Water Shortage

Since water shortage generally happens on a regional scale, the entirety of the Tri-City Planning Area is at risk. There is no established scientific scale to measure water shortage. The speed of onset of water shortage tends to be lengthy. The duration of water shortage can vary, depending on the severity of the

drought that accompanies it and the status of the water sources going into the drought. The extent of the drought considers several factors, including the nature, source, and reliability of water. While drought conditions persist, the Planning Area has sufficient water supply from municipal water supplies, which lessens the extent of water shortage impacts in the Planning Area.

Past Occurrences

Disaster Declaration History

There have been two state and one federal disaster declarations for Alameda County. These are shown on Table 4-49.

Table 4-49 Alameda County – State and Federal Drought Disaster Declarations 1950-2021

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	2	1976, 2014	1	1976

Source: Cal OES, FEMA

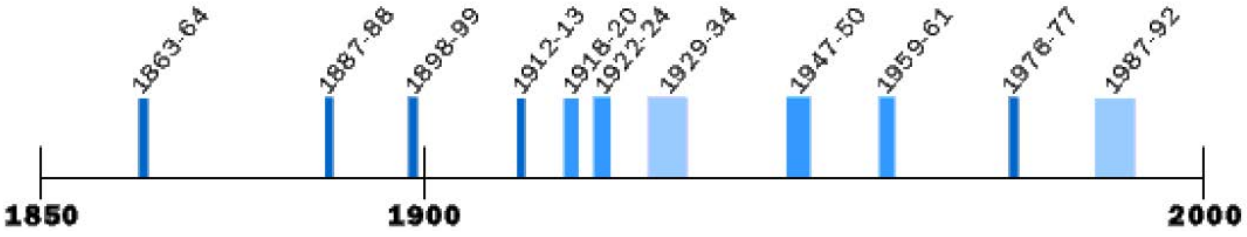
NCDC Events

There have been no NCDC drought events in Alameda County. This is most likely due to a lack of reporting by NCDC spotters in the County.

CA DWR (with Hazard Mitigation Planning Team Events)

Historically, California has experienced multiple severe droughts. According to the DWR, droughts exceeding three years are relatively rare in Northern California, the source of much of the State's developed water supply. Figure 4-47 depicts California's Multi-Year Historical Dry Periods, 1850-2000. The 1929-34 drought established the criteria commonly used in designing storage capacity and yield of large northern California reservoirs. Figure 4-48 compares the 1929-34 drought to the 1976-77, 1987-92, 2007-09, and 2012-2016 droughts.

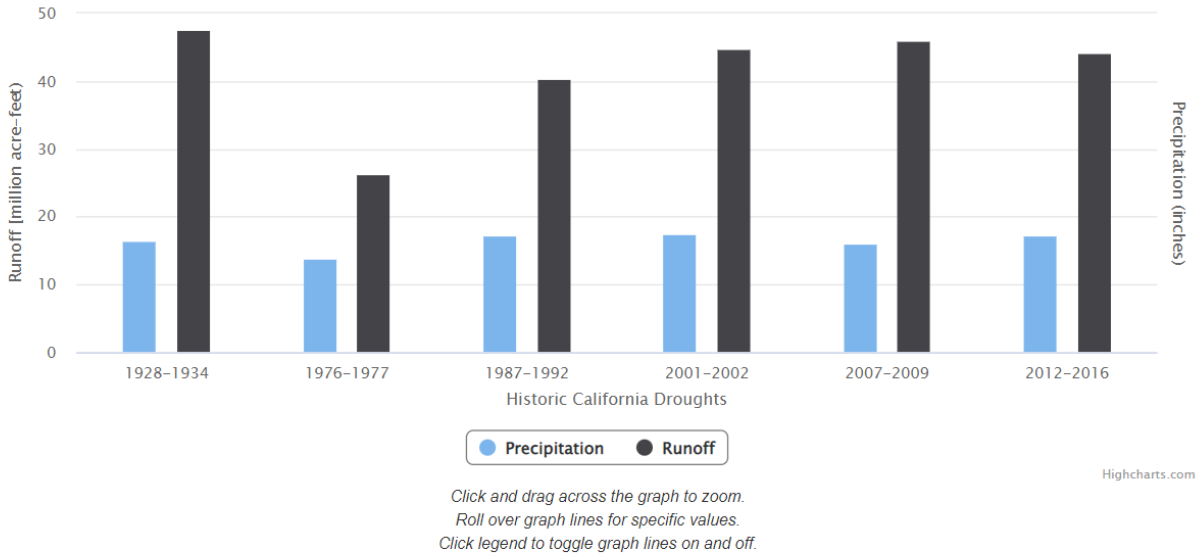
Figure 4-47 California's Multi-Year Historical Dry Periods, 1850-2000



Source: Cal DWR

Notes: Dry periods prior to 1900 estimated from limited data; covers dry periods of statewide or major regional extent

Figure 4-48 Average Annual Runoff and Precipitation for Historic Droughts



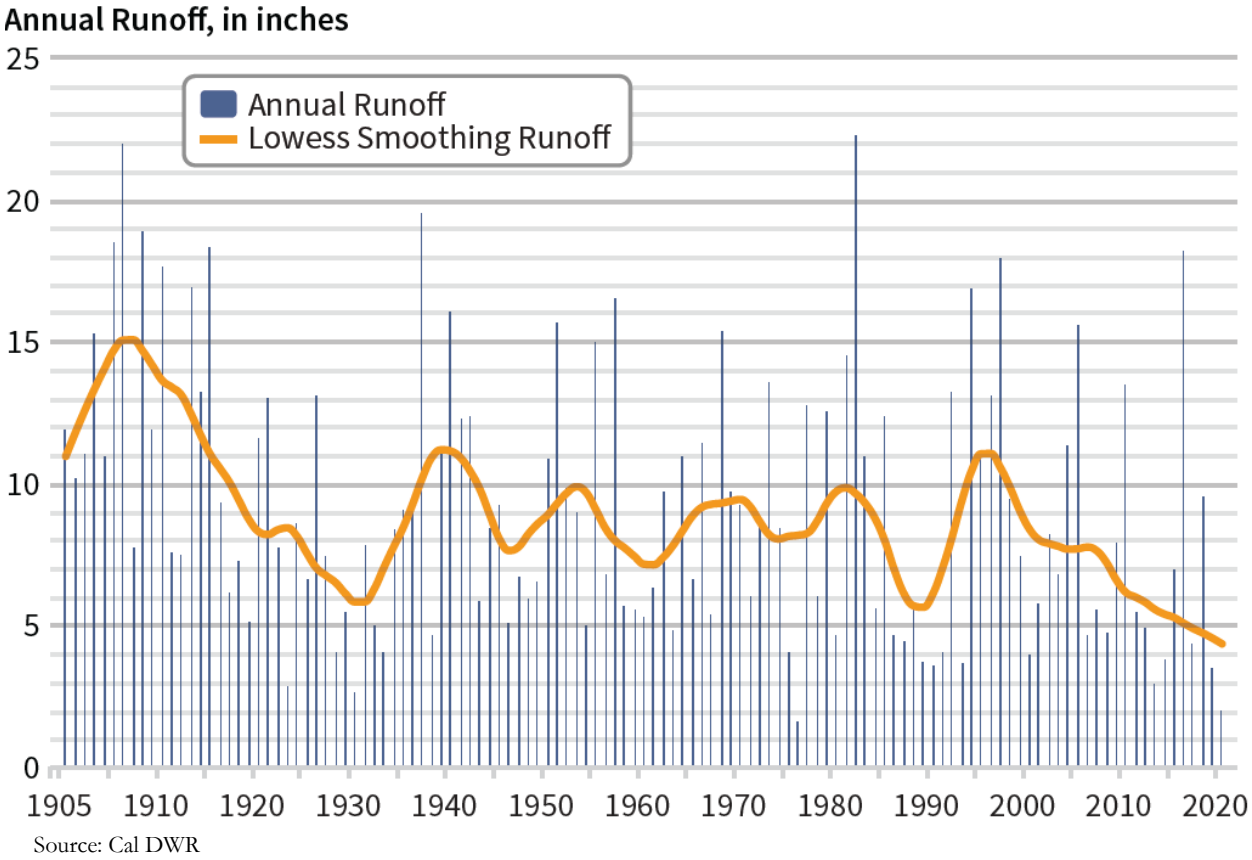
Click and drag across the graph to zoom.
Roll over graph lines for specific values.
Click legend to toggle graph lines on and off.

Runoff and precipitation conditions for California's six historical droughts. The most severe drought both in terms of precipitation and runoff was the drought of 1976-77. However, because it was just a two-year drought, the water supply impacts were not as severe as those associated with the longer duration droughts because shorter droughts can be partially mitigated by surface and groundwater storage.

Source: CA DWR – 2012-2016 California Drought: Historical Perspective (https://ca.water.usgs.gov/california-drought/california-drought-comparisons.html)

Figure 4-49 depicts runoff for the State from 1905 to 2021. This gives a historical context for the 2014-2021 drought to compare against past droughts.

Figure 4-49 Annual California Runoff –1905 to 2021



Source: Cal DWR

The 2018 and 2023 California State Hazard Mitigation Plan discussed the major droughts from 1900 to 2022. The discussion below appends to the tables and figures above.

The 1975-1977 Drought

From November 1975 through November 1977, California experienced one of its most severe droughts. Although people in many areas of the state are accustomed to very little precipitation during the growing season (April to October), they expect it in the winter. In 1976 and 1977, the winters brought only one-half and one-third of normal precipitation, respectively. Most surface storage reservoirs were substantially drained in 1976, leading to widespread water shortages when 1977 turned out to be even drier.

The 1987-1992 Drought

From 1987 to 1992, California again experienced a serious drought due to low precipitation and run-off levels. The hardest-hit region was the Central Coast, roughly from San Jose to Ventura. In 1988, 45 California counties experienced water shortages that adversely affected about 30 percent of the state's population, much of the dry-farmed agriculture, and over 40 percent of the irrigated agriculture. Fish and wildlife resources suffered, recreational use of lakes and rivers decreased, forestry losses and fires increased, and hydroelectric power production decreased. In February 1991, DWR and Cal OES surveyed drought conditions in all 58 California counties and found five main problems: extremely dry rangeland,

irrigated agriculture with severe surface water shortages and falling groundwater levels, widespread rural areas where individual and community supplies were going dry, urban area water rationing at 25 to 50 percent of normal usage, and environmental impacts.

Storage in major reservoirs had dropped to 54 percent of average, the lowest since 1977. The shortages led to stringent water rationing and severe cutbacks in agricultural production, including threats to survival of permanent crops such as trees and vines. Fish and wildlife resources were in critical shape as well. Not since the 1928-1934 drought had there been such a prolonged dry period. In response to those conditions, the Governor established the Drought Action Team. This team almost immediately created an emergency drought water bank to develop a supply for four critical needs: municipal and industrial uses, agricultural uses, protection of fish and wildlife, and carryover storage for 1992. The large-scale transfer program, which involved over 800,000 acre-feet of water, was implemented in less than 100 days with the help and commitment of the entire water community and established important links between state agencies, local water interests, and local governments for future programs.

The 2007-2009 Drought

Water years 2007-2009 were collectively the 15th driest three-year period for DWR's eight-station precipitation index, which is a rough indicator of potential water supply availability to the State Water Project (SWP) and Central Valley Project (CVP). Water year 2007 was the driest single year of that drought and fell within the top 20 percent of dry years based on computed statewide runoff. In June 2008, a state emergency proclamation was issued due to water shortage in selected Central Valley counties. In February 2009, for the first time in its history, the State of California proclaimed a statewide drought. The state placed unprecedented restrictions on CVP and SWP diversions from the Delta to protect listed fish species, a regulatory circumstance that exacerbated the impacts of the drought for water users.

The greatest impacts of the 2007–2009 drought were observed in the CVP service area on the west side of the San Joaquin Valley, where hydrologic conditions combined with reduced CVP exports resulted in substantially reduced water supplies (50 percent supplies in 2007, 40 percent in 2008, and 10 percent in 2009) for CVP south-of Delta agricultural contractors. Small communities on the west side highly dependent on agricultural employment were especially affected by land fallowing due to lack of irrigation supplies, as well as by factors associated with current economic recession. The coupling of the drought and economic recession necessitated emergency response actions related to social services, such as food banks and unemployment assistance.

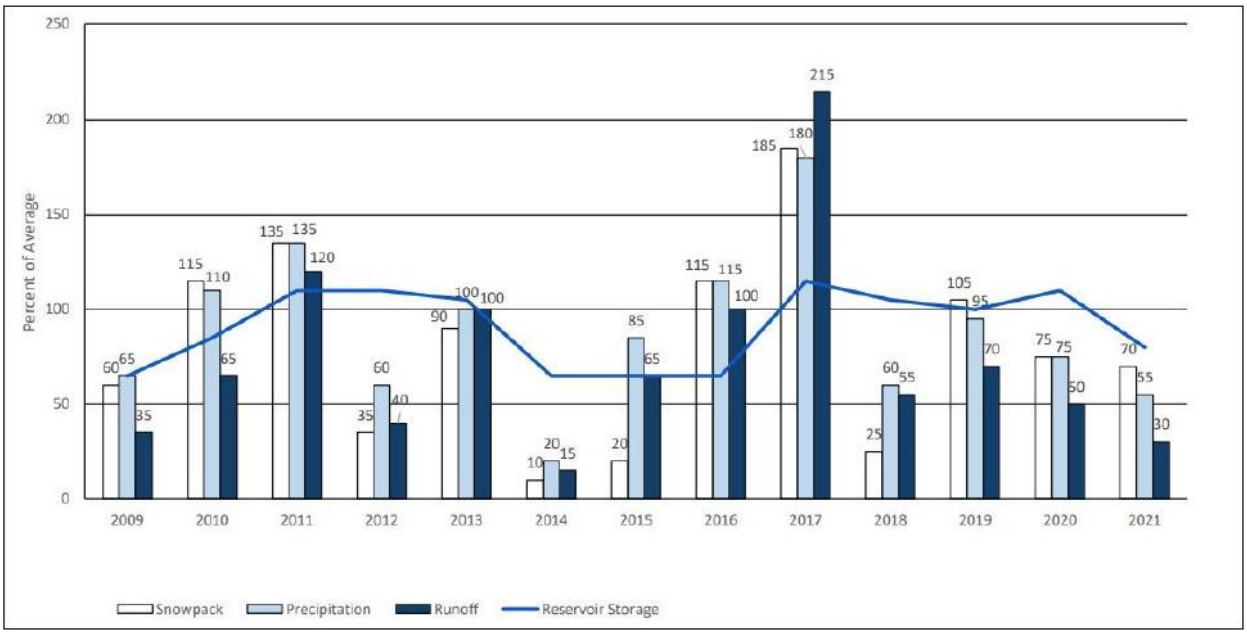
The 2012-2017 Drought (and still ongoing after a pause in 2017)

The statewide drought of 2012-2017, which is still ongoing, will be remembered as one of the most severe and costliest droughts of record in California. The drought that spanned water years 2012 through 2017 included the driest four-year statewide precipitation on record (2012-2015) and the smallest Sierra-Cascades snowpack on record (2015, with 5 percent of average). It was marked by extraordinary heat: 2014, 2015, and 2016 were California's first, second, and third warmest years in terms of statewide average temperatures. By the time the drought was declared officially over in April 2017, the state had expended $6.6 billion in drought response and mitigation programs and had been declared a federal disaster area.

Water Shortage

Figure 4-50 illustrates several indicators commonly used to evaluate water conditions in California. The percent of average values are determined by measurements made in each of the ten major hydrologic regions. The chart describes water conditions in California between 2007 and 2021. The chart illustrates the cyclical nature of weather patterns in California.

Figure 4-50 Water Supply Conditions, 2009 to 2021



Source: 2023 State of California Hazard Mitigation Plan

Likelihood of Future Occurrence

Drought

Likely—Historical drought data for the Tri-City Planning Area indicate there have been 5 significant droughts in the last 86 years. This equates to a drought every 16.8 years on average or a 6.0 percent chance of a drought in any given year. Based on this data and given the multi-year length of droughts and future climate change affects, the Tri-City Planning Area determined that future drought occurrence continues to be likely.

Water Shortage

Occasional — Recent historical data for water shortage indicates that California and the Tri-City Planning Area may at some time be at risk to both short and prolonged periods of water shortage. Based on this it is possible that water shortages will affect the Planning Area in the future during extreme drought conditions. New development, landscaping, and road paving put stress on water resources. The supply of water is currently sufficient, but as population grows and land use patterns shift, it will be necessary to consider the added stress that new development will put on water demand and quality.

Climate Change and Drought and Water Shortage

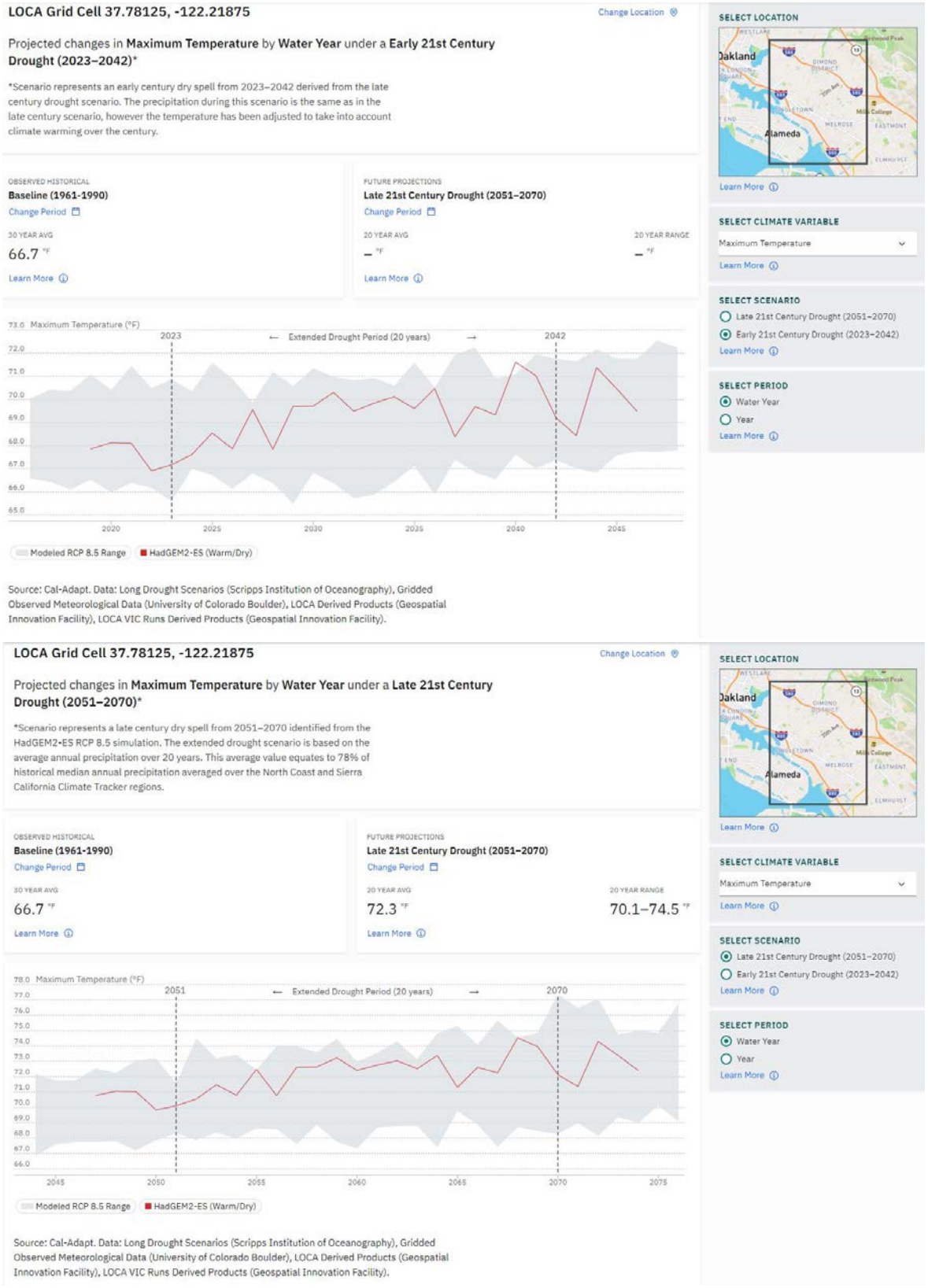
Climate scientists studying California find that drought conditions are likely to become more frequent and persistent over the 21st century due to climate change. The experiences of California during recent years underscore the need to examine more closely the state's water storage, distribution, management, conservation, and use policies. The 2021 CAS stresses the need for public policy development addressing long term climate change impacts on water supplies. The CAS notes that climate change is likely to significantly diminish California's future water supply, stating that: California must change its water management and uses because climate change will likely create greater competition for limited water supplies needed by the environment, agriculture, and cities.

A 2018 report from the Public Policy Institute of California noted that thousands of Californians – mostly in rural, small, disadvantaged communities – already face acute water scarcity, contaminated groundwater, or complete water loss. Climate change would make these effects worse.

Cal-Adapt has modeled future risk of drought. Recent research suggests that extended drought occurrence ("mega-drought") could become more pervasive in future decades. This tool explores data for two 20-year drought scenarios (using the quad that contains the City of Fremont in Figure 4-51) derived from LOCA downscaled meteorological and hydrological simulations – one for the earlier part of the 21st century, and one for the latter part:

- The upper chart represents a mid-century dry spell from 2023-2042 identified from the HadGEM2-ES RCP 8.5 simulation. The extended drought scenario is based on the average annual precipitation over 20 years. This average value equates to 78% of historical median annual precipitation averaged over the North Coast and Sierra California Climate Tracker regions.
- The lower chart represents a late century dry spell from 2051–2070 identified from the HadGEM2-ES RCP 8.5 simulation. The extended drought scenario is based on the average annual precipitation over 20 years. This average value equates to 78% of historical median annual precipitation averaged over the North Coast and Sierra California Climate Tracker regions.

Figure 4-51 Tri-City Planning Area – Future Extended Drought Scenarios



Source: Cal Adapt – Extended Drought Scenarios (retrieved 6/9/2023)

Vulnerability Assessment

Vulnerability—Medium

Based on historical information, the occurrence of drought in California, including the Tri-City Planning Area, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. The vulnerability to drought may vary and include reduction in water supply, turf losses, impacts to natural resources, and an increase in dry fuels and tree dieback.

The whole of the Planning Area is at some measure of vulnerability to drought and water shortage. An assessment of a community's vulnerability to drought and water shortage begins with an understanding of local exposure to climate change. This is included in the discussion of the Planning Area's Assets at Risk to this hazard which follows the discussion on tree mortality.

Tree Mortality and Drought

One of the specific impacts of drought in the Tri-City Planning Area is the increased risk to trees from beetle kill and other insects, pathogens and parasites, and other tree mortality and die back issues. Drought weakens trees and makes them more susceptible to insect infestation and other pathogens. Insects, such as bark beetles and others, frequently attack trees weakened by drought, disease, injuries, or other factors that may stress the tree. These insects and other pathogens can contribute to the decline and eventual death of trees throughout the Planning Area, especially in those areas on the east where the elevations increase.

The tree mortality and dieback problem are a high priority because of the issue of hazardous trees and increased wildfire hazard in the wildland areas and the potential for worsening conditions and expansion into other forested sites in future years. Fuel loading and fire potential are greater in affected eucalyptus, acacia, and conifer stands as compared to healthy stands due to the higher proportion of dead and dying material. Removal of dead and dying trees near structures, powerlines, and roadways is also a high priority because of the immediate falling hazard.

University of California, Berkeley's Department of Environmental Science, Policy, and Management (ESPM) was commissioned in 2021 to investigate the symptoms and possible causes of the dieback. Preliminary results show that the dieback is driven mostly by environmental stressors, including but not limited to drought, predisposing trees to disease caused by opportunistic pathogens. The report includes best management practices to limit the spread of pathogens. It is important to continue investigating the causes of the tree mortality and dieback to help Planning Area jurisdictional staff track changes over time, recognize where other areas may potentially be susceptible to tree mortality, and apply appropriate best management practices.

Under current drought conditions, competition for resources within forested areas will likely continue to intensify with greater stress increasing tree susceptibility to insect damage and disease, and ultimately increase mortality.

In all vegetation types, drought extends the length of the fire season because of its effect on live and dead fuel moisture, with critical low fuel moisture levels occurring early in spring or summer and extending at least through the first significant rains that typically come in late fall.

Assets at Risk

Assets at risk from drought and water shortage include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

The people and populations of the Tri-City Planning Area are not directly affected by drought; although, their turfed areas, trees, and other water dependent resources can all be affected. In extreme drought conditions, however, residents and other populations within the Planning Area may be vulnerability to drought and water shortage issues. Water quality can be impacted causing health problems, especially to vulnerable populations where access to clean water supplies can be more challenging. Drought and water shortage can lead to an increase in wildfires threatening Planning Area residents. Water shortages can have an effect on all of the population in the Planning Area, but often have a greater effect on the unhoused and other vulnerable populations that may be unable to access clean drinking water during shortages. During periods of drought as the costs of water usage may increase, those who are economically disadvantaged may be unable to afford the increased costs of potable water.

Structures

Structures have a limited vulnerability to drought and water shortage. It is the secondary hazard of drought (wildfire) which causes risks to structures. Drought can also stress trees, causing die off. These trees may fall on structures adjacent to them.

Critical Facilities and Infrastructure and Community Lifelines

Most critical facilities and infrastructure have a limited vulnerability to drought and water shortage. Should drought conditions be severe enough to cause water shortage reliability issues, some facilities and infrastructure may be affected. Water and wastewater systems may be impacted during times of reduced water supply and need to employ contingencies to remain functional and fully operational. Other water dependent systems may also be adversely affected. Further, the secondary hazard of drought (increased potential for spread of urban fires and wildfire) can pose a significant risk to critical facilities and infrastructure. Drought can also stress trees, causing die off. These trees may fall on critical infrastructure adjacent to them and impact power lines and other utilities.

While limited, community lifelines can have a vulnerability to drought and water shortage. This includes:

- **Safety and Security** – Agencies may need to assist in providing alternative water supplies. Agencies may also need to staff locations where water is distributed.
- **Food, Hydration, Shelter** – Drought can limit agricultural production, including timber and grazing activities. Additional water supplies may need to be procured.

- **Health and Medical –** Additional water supplies may be required for these facilities to remain fully operational during drought and water shortages.
- **Energy –** Sufficient water is required to generate electricity and power. Additional fuels and power may be required to move water to and from locations that need it.
- **Communications** – Most communication systems will not be affected. In extreme instances, additional messaging may be required during drought and water shortages.
- **Water Systems** – During period of drought and water shortage, additional pressure may be put on water companies to secure additional supplies. With reductions in available water, the ability of wastewater systems to effectively treat wastewater may be impacted.

It is unlikely that any of these community lifelines would be overwhelmed by drought and water shortages, especially given the current state of water supply reliability in the Tri-City Planning Area.

Natural, Historic, and Cultural Resources

Drought and water shortage can have a significant impact on natural resources. Water levels in reservoirs and lakes may be reduced and a loss of wetlands and coastal marsh areas may occur. Severe drought conditions can contribute to an increase in erosion of soils and lead to poor soil quality. Further, all of the trees in the Planning Area are at risk to drought impacts and a reduction in water supply. These trees provide a wealth of social and environmental benefits to Planning Area residents and visitors, from shade and beauty to air quality, carbon reduction and stormwater management. Drought can devastate crops and dry out pastures, dry out forests and critical habitat areas, and reduce food and water available for wildlife and livestock. Additionally, drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. It is unlikely that drought and water shortage would have a significant impact on historic and cultural resources in the Planning Area.

Economic Assets and Community Activities of Value

Economic assets and community activities in the Tri-City Planning Area generally have a limited vulnerability to drought and water shortage. Drought is a problem which predominantly affects rural small business owners such as farmers and agricultural contractors who rely on water for their crops. However, supply issues can also affect businesses such as cafes and restaurants in more urban areas. Drought impacts to the agricultural industry can affect the supply chain and increase the cost of food and water, and adversely impact businesses tied to these industries. Reduction in or interruption of the water supply could also lead to lower productivity or closure of manufacturing facilities. Other economic sectors with a heavy reliance on water may also be affected. Depending upon how severe the conditions get and how long they last, drought can restrict recreational and community activities, all of which can stress businesses and local economies over time.

Impacts from Drought and Water Shortage

The vulnerability to drought is Planning Area wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservations measures during extended droughts. During these times, the costs of water can also increase. Also of concern, the increased dry fuels and fuel loads associated with drought conditions can result in an increased fire danger. In areas of extremely dry fuels,

the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts.

Other qualitative impacts associated with drought in the Tri-City Planning Area are those related to water intensive activities such as municipal usage, commerce, tourism, and recreation use. With more precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

The effects of drought are managed in the Bay Area through the importation of water and the storage of water in reservoirs. ACWD provides much of the water in the Planning Area. Historically, ACWD has been able to secure sufficient water to meet the demands of a growing population. The Planning Committee indicated the area's water supplies are sufficient for most periods of drought. More information can be found in ACWD's annex to this LHMP Update.

During periods of drought, vegetation can dry out which increases fire risk. Drought that occurs during periods of extreme heat and high winds can cause PSPS events to be declared in the Planning Area. More information on PSPS can be found in Section □.

Additionally, the Planning Committee noted that wood tick populations have exploded during recent droughts. Increase of tick-borne diseases has occurred as a result. This is both for humans, as well as for animals that reside in the Tri-City Planning Area.

Drought Impact Reporter

Drought impacts are wide-reaching and may be economic, environmental, and/or societal. Tracking drought impacts can be difficult. The Drought Impact Reporter from the NDMC is a useful reference tool that compiles reported drought impacts nationwide. Table 4-50 show drought impacts for County from 1850 to June 2023. The data represented is skewed, with the majority of these impacts from records within the past ten years. It is anticipated that drought impacts to the Tri-City Planning Area would be similar to those experienced in Alameda County, though on a smaller scale.

Table 4-50 Alameda County Drought Impacts 1850-6/1/2023

Category	Alameda County Number of Impacts
Agriculture	47
Business and Industry	15
Energy	6
Fire	19
Plants & Wildlife	43
Relief, Response, and Restrictions	132
Society and Public Health	71

Category	Alameda County Number of Impacts
Tourism and Recreation	9
Water Supply and Quality	143
Total	**485**

Source: National Drought Mitigation Center

Future Development

How drought and water shortage are taken into account in future development in each of the jurisdictions of the Tri-City Planning area will differ. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.10. Earthquake

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction. This section briefly discusses issues related to types of seismic hazards.

Ground Shaking

Ground shaking is motion that occurs as a result of energy released during faulting. The damage or collapse of buildings and other structures caused by ground shaking is among the most serious seismic hazards. Damage to structures from this vibration, or ground shaking, is caused by the transmission of earthquake vibrations from the ground to the structure. The intensity of shaking and its potential impact on buildings is determined by the physical characteristics of the underlying soil and rock, building materials and workmanship, earthquake magnitude and location of epicenter, and the character and duration of ground motion.

Actual ground breakage generally affects only those buildings directly over or nearby the fault. Ground shaking generally has a much greater impact over a greater geographical area than ground breakage. The amount of breakage and shaking is a function of earthquake magnitude, type of bedrock, depth and type of soil, general topography, and groundwater. As with most communities in Northern California near active faults, the Tri-City Planning Area could be susceptible to violent ground shaking, depending on the location of the event.

Seismic Structural Safety

Older buildings constructed before building codes were established, and even newer buildings constructed before earthquake-resistance provisions were included in the codes, are the most likely to be damaged during an earthquake. Buildings one or two stories high of wood-frame construction are considered to be the most structurally resistant to earthquake damage. Older masonry buildings without seismic reinforcement (unreinforced masonry) and soft story buildings are the most susceptible to the type of structural failure that causes injury or death.

The susceptibility of a structure to damage from ground shaking is also related to the underlying foundation material. A foundation of rock or very firm material can intensify short-period motions which affect low-rise buildings more than tall, flexible ones. A deep layer of water-logged soft alluvium can cushion low-rise buildings, but it can also accentuate the motion in tall buildings. The amplified motion resulting from softer alluvial soils can also severely damage older masonry buildings.

Other potentially dangerous conditions include but are not limited to: building architectural features that are not firmly anchored, such as parapets and cornices; roadways, including column and pile bents and abutments for bridges and overcrossings; and above-ground storage tanks and their mounting devices. Such features could be damaged or destroyed during strong or sustained ground shaking.

Liquefaction Potential

Liquefaction occurs in saturated soils, that is, soils in which the space between individual particles is completely filled with water. This water exerts a pressure on the soil particles that influences how tightly the particles themselves are pressed together. Prior to an earthquake, the water pressure is relatively low. However, earthquake shaking can cause the water pressure to increase to the point where the soil particles can readily move with respect to each other. When liquefaction occurs, the strength of the soil decreases and the ability of a soil deposit to support foundations for buildings and bridges is reduced. Liquefied soil also exerts higher pressure on retaining walls, which can cause them to tilt or slide. This movement can cause settlement of the retained soil and destruction of structures on the ground surface. Increased water pressure can also trigger landslides and cause the collapse of dams. Because liquefaction occurs in saturated soil, its effects are most commonly observed in low-lying areas near bodies of water such as rivers, lakes, bays, and oceans.

Liquefaction during major earthquakes has caused severe damage to structures on level ground as a result of settling, titling, or floating. Such damage occurred in San Francisco on bay-filled areas during the 1989 Loma Prieta earthquake, even though the epicenter was several miles away. If liquefaction occurs in or

under a sloping soil mass, the entire mass may flow toward a lower elevation. Also, of particular concern in terms of developed and newly developing areas are fill areas that have been poorly compacted.

Landslide

Landslides can occur as a result of horizontal seismic inertia induced in the slopes by the ground shaking. The most common earthquake-induced landslides include shallow, disrupted landslides such as rock falls, rockslides, and soil slides. Debris flows are created when surface soil on steep slopes becomes totally saturated with water. Once the soil liquefies, it loses the ability to hold together and can flow downhill at very high speeds, taking vegetation and/or structures with it. Slide risks increase after an earthquake during a wet winter. This is discussed in greater extent in Section 4.3.13.

Settlement

Settlement can occur in poorly consolidated soils during ground shaking. During settlement, the soil materials are physically rearranged by the shaking to result in a less stable alignment of the individual minerals. Settlement of sufficient magnitude to cause significant structural damage is normally associated with rapidly deposited alluvial soils or improperly founded or poorly compacted fill. These areas are known to undergo extensive settling with the addition of irrigation water, but evidence due to ground shaking is not available.

Fire Following Earthquake

Fire ignitions and spread in urban regions following a major earthquake can further compound the potentially catastrophic impacts of a large earthquake event. Fire following earthquake is a major hazard in earthquake-prone areas which are densely developed and have high inventories of wood frame buildings. The Planning Area has a high inventory of wood frame residential and commercial buildings, is of relatively high density, and also has considerable industry. Earthquake ground shaking can result in damaged gas and electrical utilities, broken piping and connections, and toppled equipment when restraint or flexibility is inadequate. Open flames, friction, or other heat sources in combination with ordinary combustibles, combustible liquid releases, and flammable gas are among potential ignition sources. Wind speed and direction, along with relative humidity, can compound the damaging effects of fires following an earthquake. Scawthorn (2018), used the USGS HayWired earthquake scenario to model fire following earthquake – considering factors such as building construction and density, earthquake damage to property, water supply system damage, discovery and reporting of fires, fire department response, fire suppression, and fuel exhaustion and fire breaks. Assuming breezy conditions with moderate humidity at the time of the M7.0 earthquake, Scawthorn (2018) estimates that 352 ignitions would occur in Alameda County, resulting in 279 large fires (198 of which would involve multiple city blocks), and a loss of four percent of total residential and non-residential building square footage, or $9.7 billion (2014 dollars) in losses. A damaging seismic event in the Planning Area could result in multiple simultaneous fires, one or more of which could develop into a conflagration – a fire involving multiple city blocks.

The capability of fire departments to combat fires following an earthquake is impacted by the regional nature of an earthquake, damage to transportation and water supply systems, and the potential failure of telecommunications. A local fire department may suffer impacts to its personnel, buildings, equipment,

and communications systems. Moreover, fewer resources are immediately available as mutual aid – due to the commitment of nearby fire departments responding to the earthquake withing their own jurisdictions. Transportation system damage may adversely impact the mobilization of off-duty personnel and fire and rescue mutual aid resources from unaffected areas. Maneuvering fire crews within the affected areas of the earthquake may be impeded by debris or damage to roads and bridges. Additionally, the municipal water supply system which ordinarily supports firefighting operations is likely to be impacted. Like nearly all urban U. S. communities, the water distribution system in the Planning Area supplies both potable water to homes and businesses, as well as to fire hydrants used to fight fires. The extensiveness of the network, and the integration of both municipal and residential, commercial, and industrial water pipes renders the system highly exposed to damage and consequent pressure loss. Without adequate pressure, fire hydrants are rendered an ineffective water source for firefighting. According to a USGS HayWired Fact Sheet (2018), East Bay residents "could lose water service for 6 weeks (some as long as 6 months). Not only would normal water service be restricted, but the ability to suppress fires would also be reduced."

Fire following earthquake is an issue that could impact any California community that experiences an earthquake – both urban and rural. The problem is heightened for urban environments, where many simultaneous ignitions can lead to a firestorm, and single fires can more quickly and easily move structure to structure. The single most damaging fire of the twentieth century in the United States was the fire which followed the 1906 earthquake in San Francisco. Additionally, the largest peacetime fire in the twentieth century was a wind-driven firestorm following the 1923 Tokyo Kanto earthquake. In both cases, casualties and damage due to fire exceeded those caused by ground shaking. Significant fires also occurred in San Francisco following the 1989 Loma Prieta Earthquake, in Los Angeles following the 1994 Northridge Earthquake, and in Kobe, Japan following the 1995 Great Hanshin Earthquake. In each of these cases, multiple ignitions, dense built environments, a high inventory of wood frame buildings, and damage to water supply systems contributed to extensive fire spread. A gas explosion occurred following the 1994 Northridge Earthquake, when a natural gas line ruptured. Following the 1964 Great Alaskan Earthquake, major fires occurred in Wittier, AK, as well as at fuel refinery storage tanks in Valdez, AK.

According to the FM Global Insurance company, "Fires after earthquakes commonly initiate from electrical or fuel related sources because their use is widespread. In the US, natural gas is a factor 15 to 50 percent of the time, and electrical ignitions account for 40 percent or more of post-earthquake wildfires. Ignitable liquid spills, chemical reactions, and the contact of combustibles with heat sources have also initiated or contributed to many fires after earthquakes."

Earthquake-Induced Subsidence

Regional uplift and subsidence may accompany earthquakes caused by large displacements on shallow faults. Such changes can damage coastal facilities, canals, roads, railroads, and other structures. Subsidence can also be caused by natural events such as earthquakes, soil compaction, glacial isostatic adjustment, erosion, sinkhole formation, and adding water to fine soils deposited by wind (a natural process known as loess deposits).

Land subsidence can occur in various ways during an earthquake. Large areas of land can subside drastically during an earthquake because of offset along fault lines. Land subsidence can also occur as a result of settling and compacting of unconsolidated sediment from the shaking of an earthquake. The

Geospatial Information Authority of Japan reported immediate subsidence caused by the 2011 Tōhoku earthquake. In Northern Japan, subsidence of 1.64 ft was observed in Miyako, while near Rikuzentakata it measured 2.75 ft. In the south at Sōma, 0.95 ft was observed. The maximum amount of subsidence was 3.93 ft, coupled with horizontal diastrophism of up to 7.3 ft on the Oshika Peninsula in Miyagi Prefecture.

Additionally, subsidence can occur due to Bay Mud. This is discussed in greater detail in Section 4.3.15.

Location and Extent

The Tri-City Planning Area is vulnerable to both a large damaging and potentially catastrophic earthquake and smaller, more frequent, earthquake events. Specific areas of the Planning Area are also susceptible to the effects of earthquake liquefaction or earthquake-induced landslide. Starting with the location of faults in the Planning Area, the areas most at risk are discussed in this section. According to the California Geological Survey (CGS) and US Geological Survey (USGS), multiple faults directly underlie or are near the Planning Area. These are detailed below.

Faults

A fault is defined as "a fracture or fracture zone in the earth's crust along which there has been displacement of the sides relative to one another." For the purpose of planning there are two types of faults, active and inactive. Active faults have experienced displacement in historic time, suggesting that future displacement may be expected. Inactive faults show no evidence of movement in recent geologic time, suggesting that these faults are dormant. This does not mean, however, that faults having no evidence of surface displacement within the last 11,000 years are necessarily inactive. For example, the 1975 Oroville earthquake, the 1983 Coalinga earthquake, and the 1987 Whittier Narrows earthquake occurred on faults not previously recognized as active. Potentially active faults are those that have shown displacement within the last 1.6 million years (Quaternary). An inactive fault shows no evidence of movement in historic (last 200 years) or geologic time, suggesting that these faults are dormant.

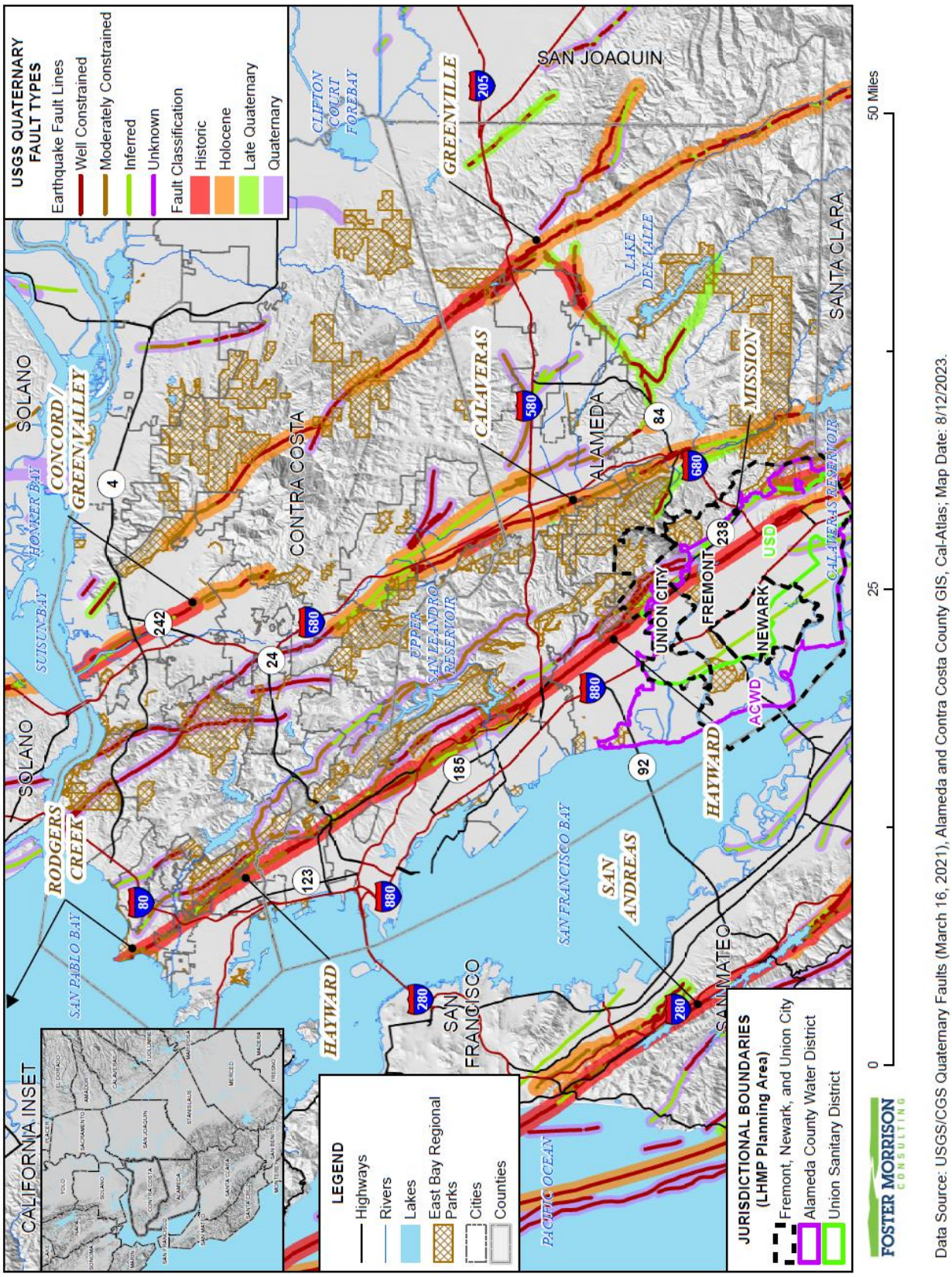
Two types of fault movement represent possible hazards to structures in the immediate vicinity of the fault: fault creep and sudden fault displacement. Fault creep, a slow movement of one side of a fault relative to the other, can cause cracking and buckling of sidewalks and foundations even without perceptible ground shaking. Sudden fault displacement occurs during an earthquake event and may result in the collapse of buildings or other structures that are found along the fault zone when fault displacement exceeds an inch or two. The only protection against damage caused directly by fault displacement is to prohibit construction in the fault zone.

The San Francisco Bay Area is transected by a series of parallel faults that together accommodate the relative motion between the Pacific and North American plates over a width of more than 50 miles. The major fault zones that comprise this system include the San Andreas, Mission Hills, Hayward, Calaveras, Concord-Green Valley, Greenville, Rodgers Creek, and San Gregorio Faults. These major faults are near vertical and generally exhibit right-lateral strike-slip movement (which means that the movement is predominantly horizontal and when viewed from one side of the fault, the opposite side of the fault is displaced to the right).

Earthquakes occur not only on faults mapped as active or potentially active, but also on unknown faults. Many significant earthquakes in the United States have occurred on previously unknown faults. Based on the historical seismicity in California and comparisons to other geologically similar areas, small to moderate crustal earthquakes up to about M5 or M5.5 are possible almost any place in the Bay Area. There is also the possibility of larger crustal earthquakes in the M6+ range on unknown faults, although the probability of such events is likely to be low.

Faults in and near the Tri-City Planning Area can be seen on Figure 4-52.

Figure 4-52 Tri-City Planning Area – Faults in and near the Planning Area



The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales. One of the first was the Richter Scale, developed in 1932 by the late Dr. Charles F. Richter of the California Institute of Technology. The Richter Magnitude Scale is used to quantify the magnitude or strength of the seismic energy released by an earthquake. Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface (see Table 4-51). Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

Table 4-51 Modified Mercalli Intensity (MMI) Scale

MMI	Felt Intensity
I	Not felt except by a very few people under special conditions. Detected mostly by instruments.
II	Felt by a few people, especially those on upper floors of buildings. Suspended objects may swing.
III	Felt noticeably indoors. Standing automobiles may rock slightly.
IV	Felt by many people indoors; by a few outdoors. At night, some people are awakened. Dishes, windows, and doors rattle.
V	Felt by nearly everyone. Many people are awakened. Some dishes and windows are broken. Unstable objects are overturned.
VI	Felt by everyone. Many people become frightened and run outdoors. Some heavy furniture is moved. Some plaster falls.
VII	Most people are alarmed and run outside. Damage is negligible in buildings of good construction, considerable in buildings of poor construction.
VIII	Damage is slight in specially designed structures, considerable in ordinary buildings, and great in poorly built structures. Heavy furniture is overturned.
IX	Damage is considerable in specially designed buildings. Buildings shift from their foundations and partly collapse. Underground pipes are broken.
X	Some well-built wooden structures are destroyed. Most masonry structures are destroyed. The ground is badly cracked. Considerable landslides occur on steep slopes.
XI	Few, if any, masonry structures remain standing. Rails are bent. Broad fissures appear in the ground.
XII	Virtually total destruction. Waves are seen on the ground surface. Objects are thrown in the air.

Source: Multi-Hazard Identification and Risk Assessment, FEMA 1997

Alquist-Priolo Zones

According to the California Geological Survey, Alquist-Priolo earthquake fault zones are regulatory zones surrounding the surface traces of active faults in California. (A trace is a line on the earth's surface defining a fault.) Wherever an active fault exists, if it has the potential for surface rupture, a structure for human occupancy cannot be placed over the fault and must be a minimum distance from the fault (generally fifty feet). Surface fault rupture occurs when movement on a fault breaks through to the earth's surface. An active fault, for the purposes of the Alquist-Priolo Act, is one that has ruptured in the last 11,000 years.

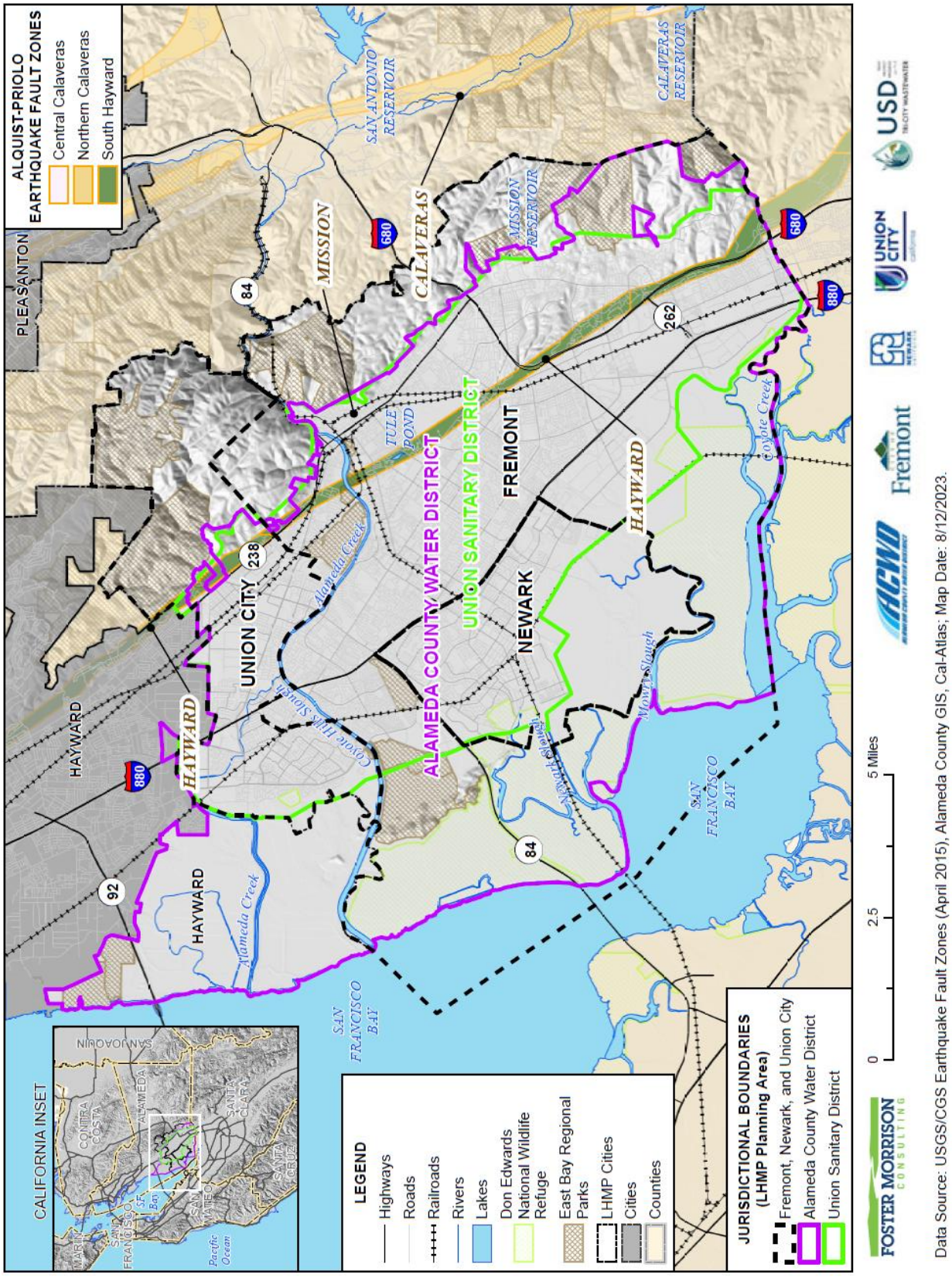
Not all earthquakes result in surface rupture. The Loma Prieta Earthquake of 1989 caused major damage in the San Francisco Bay Area but the movement deep in the earth did not break through to the surface. Surface rupture almost always follows pre-existing faults. It may occur suddenly during an earthquake or

slowly in the form of fault creep. Fault creep is slow rupture of the earth's crust. Examples of creep are well known along the Hayward Fault where it crosses highly developed areas in Contra Costa and Alameda Counties. Although the Hayward Fault ruptured suddenly in the 1868 earthquake, it also exhibits slow surface creep which offsets and deforms curbs, streets, buildings, and other structures that lie on top of the fault.

Earthquake fault zones were conceived in the Alquist-Priolo Earthquake Fault Zoning Act (Alquist-Priolo Act). The intent of the Alquist-Priolo Act is to reduce losses from surface fault rupture. California created this law following the destructive 1971 San Fernando earthquake (magnitude 6.6), which was associated with extensive surface fault ruptures that damaged numerous structures.

Figure 4-53 shows the Alquist-Priolo zones in the Tri-City Planning Area. These areas might experience fault rupture as a result of an earthquake on the identified fault, damaging roads, pipelines, levees, dams, and buildings or facilities that cross the fault.

Figure 4-53 Tri-City Planning Area – Alquist-Priolo Fault Zones



Earthquake Liquefaction

When ground liquefies in an earthquake, it behaves like a liquid and may sink, spread, or erupt in sand boils. This can cause pipes to break, roads and sidewalks to buckle, and building foundations to be damaged. Liquefaction can only occur under certain circumstances. Soil that is loose, sandy, silty, or saturated with water can result in soil liquefaction if it is shaken intensely for an extended period. More details on soils and liquefaction follows:

- **Loose Soils** – The soils must be loose, such as uncompacted or unconsolidated sand and silt without much clay. This happens most often along the Bay shoreline, near creeks or waterways, on dry creek beds, and areas of man-made fill.
- **Soggy Soils** – The sand and silt must be soggy and saturated with water due to a high water table.
- **Ground Shaking** – The ground must be shaken long and hard enough by the earthquake to trigger liquefaction.

Liquefaction accompanies an earthquake, so the speed of onset is short. Duration is similar to the length of the earthquake shake. There are mapped areas of areas susceptible to earthquake liquefaction in the Planning Area from the USGS/CGS. These areas are shown on Figure 4-54 and discussed in more detail in Table 4-52.

Figure 4-54 Tri-City Planning Area – Earthquake Liquefaction Susceptibility Zones

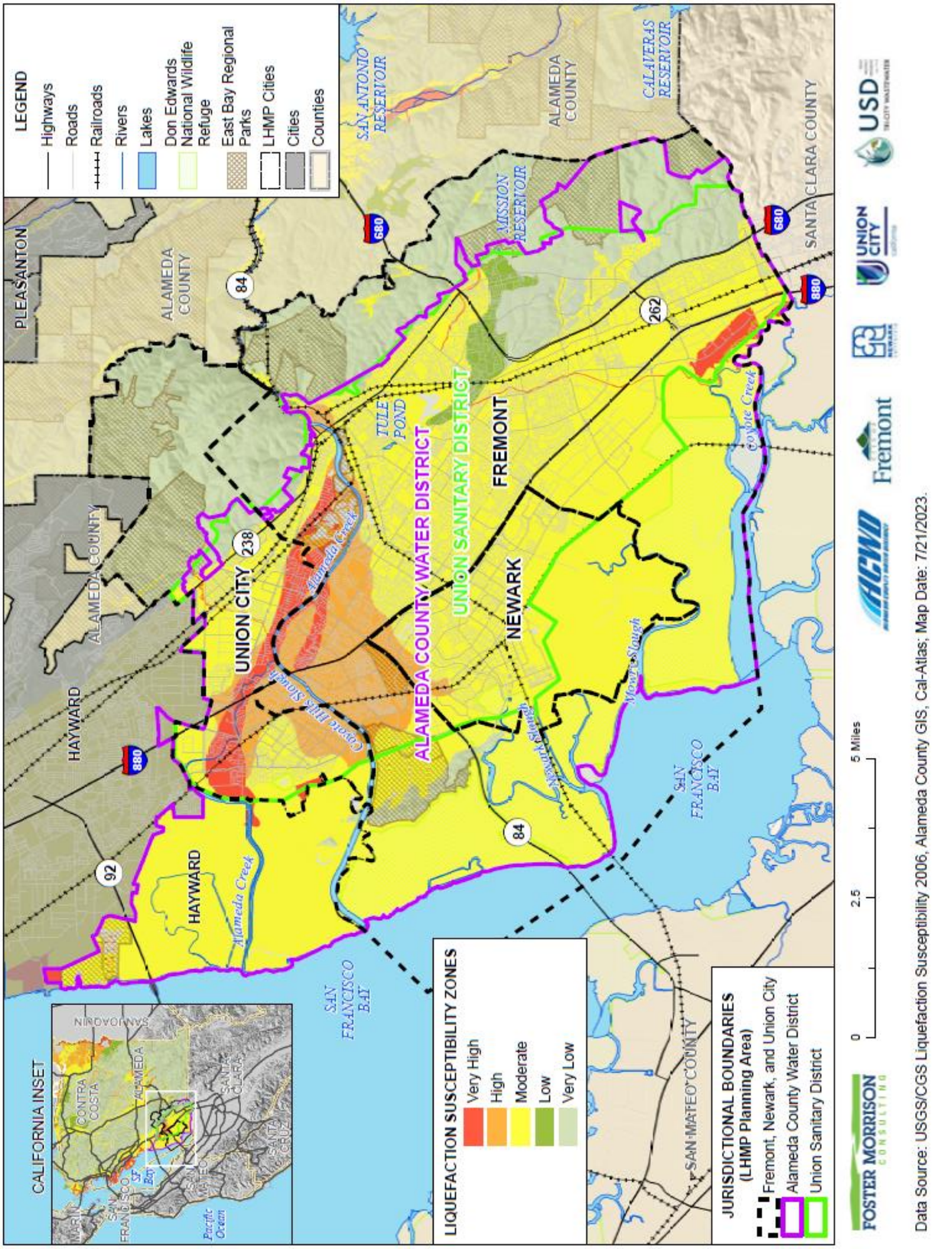


Table 4-52 Tri-City Planning Area – Earthquake Liquefaction Susceptibility Zones Geographical Extents by Jurisdiction

Jurisdiction/ Liquefaction Susceptibility Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Very High	2,578.95	3.3%	2,040.74	4.4%	538.21	1.7%
High	8,101.59	10.3%	6,711.97	14.4%	1,389.61	4.4%
Moderate	52,810.29	67.3%	34,293.89	73.6%	18,516.40	58.1%
Low	975.88	1.2%	750.88	1.6%	225.00	0.7%
Very Low	13,192.15	16.8%	2,828.51	6.1%	10,363.64	32.5%
Water	837.47	1.1%	0.01	0.0%	837.46	2.6%
Fremont Total	**78,496.32**	**100.0%**	**46,626.00**	**100.0%**	**31,870.32**	**100.0%**
Newark						
High	765.53	5.2%	688.96	7.2%	76.56	1.5%
Moderate	13,773.77	93.8%	8,822.34	92.5%	4,951.43	96.2%
Very Low	23.31	0.2%	7.66	0.1%	15.64	0.3%
Water	120.51	0.8%	18.52	0.2%	101.99	2.0%
Newark Total	**14,683.11**	**100.0%**	**9,537.48**	**100.0%**	**5,145.63**	**100.0%**
Union City						
Very High	1,392.48	8.4%	1,037.29	11.1%	355.19	4.8%
High	2,887.45	17.3%	2,649.94	28.4%	237.51	3.2%
Moderate	6,370.48	38.2%	5,182.99	55.5%	1,187.49	16.2%
Low	9.74	0.1%	4.26	0.0%	5.48	0.1%
Very Low	5,985.67	35.9%	466.79	5.0%	5,518.87	75.3%
Water	22.33	0.1%	0.02	0.0%	22.31	0.3%
Union City Total	**16,668.15**	**100.0%**	**9,341.29**	**100.0%**	**7,326.86**	**100.0%**
Alameda County Water District						
Very High	4,043.25	3.9%	3,071.76	4.8%	971.49	2.4%
High	11,753.44	11.3%	10,049.78	15.7%	1,703.66	4.2%
Moderate	79,854.76	76.5%	48,317.48	75.5%	31,537.28	77.9%
Low	981.55	0.9%	755.14	1.2%	226.42	0.6%
Very Low	6,492.45	6.2%	1,755.57	2.7%	4,736.88	11.7%
Water	1,312.64	1.3%	18.54	0.0%	1,294.10	3.2%
Alameda County Water District Total	**104,438.09**	**100.0%**	**63,968.27**	**100.0%**	**40,469.82**	**100.0%**

Jurisdiction/ Liquefaction Susceptibility Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Union Sanitary District						
Very High	3,906.62	5.0%	3,077.62	4.9%	829.00	5.9%
High	11,749.56	15.2%	10,050.88	15.9%	1,698.68	12.0%
Moderate	56,831.27	73.3%	47,608.16	75.2%	9,223.11	65.1%
Low	981.78	1.3%	755.14	1.2%	226.64	1.6%
Very Low	3,615.32	4.7%	1,834.03	2.9%	1,781.29	12.6%
Water	415.78	0.5%	16.32	0.0%	399.46	2.8%
Union Sanitary District Total	**77,500.33**	**100.0%**	**63,342.14**	**100.0%**	**14,158.19**	**100.0%**

Source: USGS/CGS

Earthquake-Induced Landslide

Ground shaking can also lead to ground failure on slopes, triggering earthquake-induced landslides. Landslides tend to occur in weak soil and rock on sloping terrain. Most sloping ground has some potential for landslides simply due to the effects of gravity. An earthquake can be one factor that will cause an unstable hillside to fail. When a landslide occurs, homes and structures within both the sloped areas and the runoff areas can be damaged or destroyed. Creeks and streams below the slide area may become dammed with debris and cause flooding. This is a significant hazard in parts of the Tri-City Planning Area as indicated by Figure 4-55. The CGS map layer has areas (a de facto scale) where earthquake-induced landslide is more likely. Speed of onset of these events is short, as is the duration. Clean up efforts can take days, weeks, or even months depending on the severity of the landslide. Geographic extent of CGS Earthquake-Induced Landslide Zones is detailed in Table 4-53.

Figure 4-55 Tri-City Planning Area – Earthquake-Induced Landslide Zones

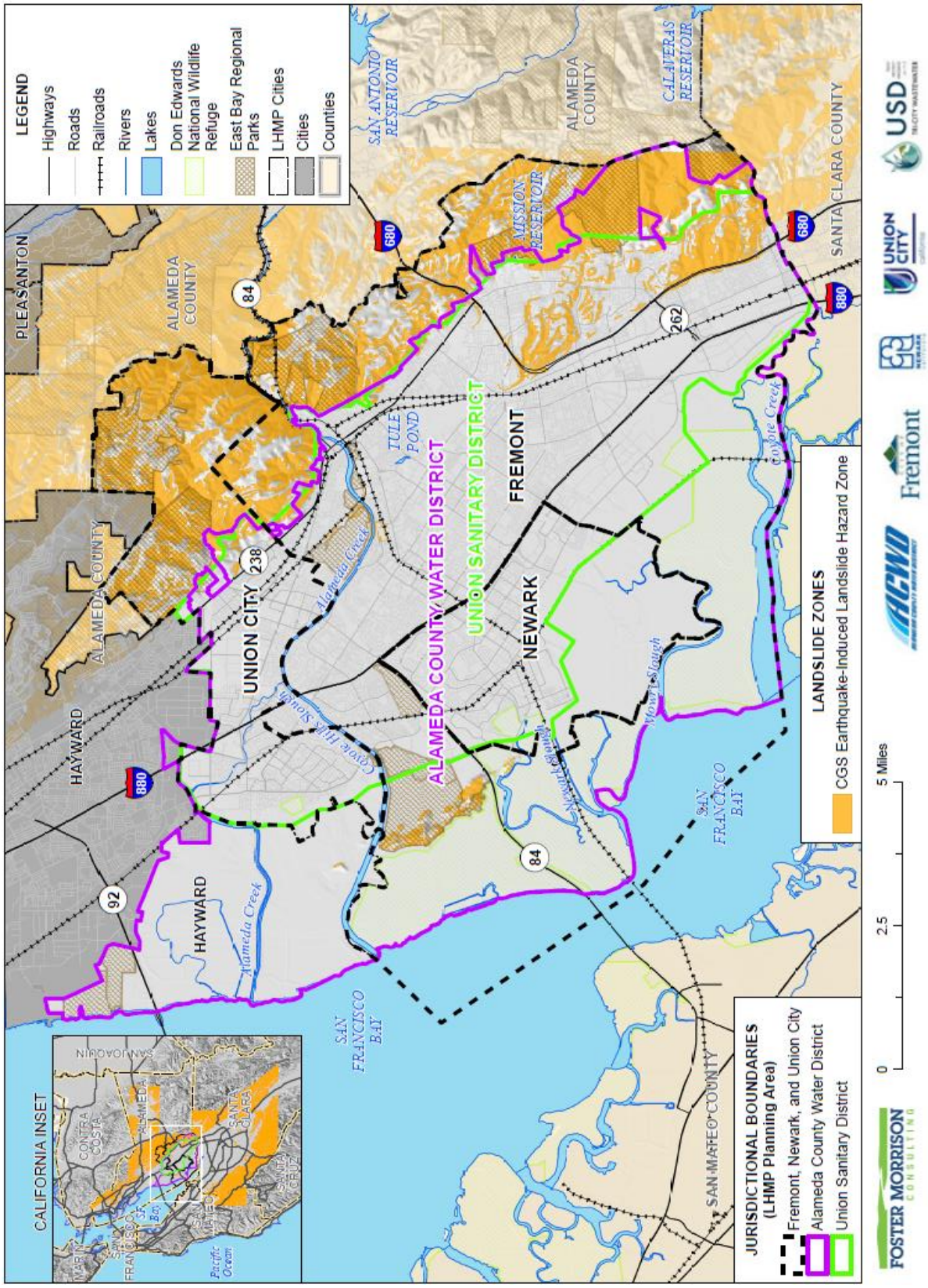


Table 4-53 Tri-City Planning Area – Earthquake-Induced Landslide Zones Geographical Extent by Jurisdiction

Jurisdiction	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont	7,741.13	9.55%	1,169.45	2.51%	6,571.68	19.07%
Newark	0.5	0.00%	0	0.00%	0.5	0.00%
Union City	3,466.76	20.80%	207.07	2.22%	3,259.69	44.49%
Alameda County Water District	3,880.92	3.63%	562.64	0.88%	3,318.28	7.75%
Union Sanitary District	1,752.04	2.26%	580.56	0.92%	1,171.48	8.27%

Source: CGS

Past Occurrences

Disaster Declaration History

There has been one federal disaster declaration from earthquake (magnitude 6.9 Loma Prieta) in Alameda County, as shown in Table 4-54.

Table 4-54 Alameda County Earthquake Disaster Declarations 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Earthquake	0	–	1	1989

Source: Cal OES, FEMA

NCDC Events

The NCDC does not track earthquakes.

USGS Events

The USGS National Earthquake Information Center database contains data on earthquakes in the Tri-City Planning Area. Table 4-55 shows the approximate distances earthquakes can be felt away from the epicenter. According to the table, a magnitude 5.0 earthquake could be felt up to 90 miles away. The USGS database was searched for magnitude 5.0 or greater on the Richter Scale within 90 miles of the Planning Area (centering on Fremont). These 35 results are detailed in Table 4-56.

Table 4-55 Approximate Relationships between Earthquake Magnitude and Intensity

Richter Scale Magnitude	Maximum Expected Intensity (MM)*	Distance Felt (miles)
2.0 - 2.9	I – II	0

Richter Scale Magnitude	Maximum Expected Intensity (MM)*	Distance Felt (miles)
3.0 - 3.9	II – III	10
4.0 - 4.9	IV – V	50
5.0 - 5.9	VI – VII	90
6.0 - 6.9	VII – VIII	135
7.0 - 7.9	IX – X	240
8.0 - 8.9	XI – XII	365

*Modified Mercalli Intensity Scale.

Source: United State Geologic Survey, Earthquake Intensity Zonation and Quaternary Deposits, Miscellaneous Field Studies Map 9093, 1977.

*Table 4-56 Magnitude 5.0 Earthquakes or greater within 90 Miles of the Tri-City Planning Area**

Date	Richter Magnitude	Location
12/14/2016	5.01	10 km W of Cobb, California
8/24/2014	6.02	South Napa
10/31/2007	5.45	6 km NNE of East Foothills, California
8/12/1998	5.1	10 km SW of Ridgemark, California
4/18/1990	5.1	4 km E of Interlaken, California
4/18/1990	5.4	5 km NNW of Aromas, California
10/18/1989	5.1	7 km SW of Monte Sereno, California
10/18/1989	6.9	Loma Prieta, California Earthquake
8/8/1989	5.4	4 km ESE of Lexington Hills, California
6/27/1988	5.3	8 km ESE of Lexington Hills, California
6/13/1988	5.3	6 km E of East Foothills, California
2/20/1988	5.1	1 km NE of Tres Pinos, California
3/31/1986	5.7	15 km NE of East Foothills, California
1/26/1986	5.5	3 km ENE of Tres Pinos, California
4/24/1984	6.2	14 km E of Seven Trees, California
1/27/1980	5.4	9 km NE of Livermore, California
1/24/1980	5.1	11 km E of Blackhawk, California
1/24/1980	5.8	8 km ENE of Blackhawk, California
8/6/1979	5.8	8 km ENE of San Martin, California
11/28/1974	5.2	9 km NW of Hollister, California
10/2/1969	5.3	Northern California
10/2/1969	5.26	3 km E of Bloomfield, California
12/18/1967	5.28	2 km W of Corralitos, California
11/16/1964	5.2	7 km WSW of San Martin, California
9/14/1963	5.4	4 km E of Aromas, California
1/20/1960	5	6 km WSW of Ridgemark, California

Date	Richter Magnitude	Location
3/2/1959	5.3	3 km SW of Gilroy, California
3/22/1957	5.66	18 km W of Montara, California
9/5/1955	5.81	7 km NNW of Boulder Creek, California
4/25/1954	5.3	4 km ESE of Interlaken, California
6/24/1939	5.5	7 km SW of Hollister, California
12/13/1933	5	3 km SW of Los Gatos, California
2/15/1927	5	9 km SW of Davenport, California
10/24/1926	5.5	1 km WNW of Davenport, California
10/22/1926	6.31	16 km SW of Davenport, California
10/22/1926	6.35	22 km S of Davenport, California
10/22/1926	6.1	36 km W of Del Monte Forest, California
10/5/1920	5.2	5 km SSW of Spreckels, California
8/8/1916	5	2 km ESE of Pasatiempo, California
7/1/1911	6.45	2 km SE of Morgan Hill, California
12/31/1910	5	2 km SSW of Hollister, California
3/11/1910	5.8	4 km WSW of Watsonville, California
4/18/1906	7.9	The 1906 San Francisco Earthquake
8/3/1903	5.8	3 km ENE of Seven Trees, California
6/11/1903	5.8	3 km S of Milpitas, California
5/19/1902	5.4	5 km S of Elmira, California
7/6/1899	5.8	Near Hollister, California
6/2/1899	5.6	Near San Francisco, California
4/30/1899	6	Near San Juan Bautista, California
3/31/1898	6.4	South of Sonoma, California
6/20/1897	6.3	Near Gilroy, California
8/9/1893	5.6	Near Santa Rosa, California
11/13/1892	5.9	South of Hollister, California
4/30/1892	5.6	Near Dixon, California
4/21/1892	6.4	Near Winters, California
4/19/1892	6.6	Near Vacaville, California
10/12/1891	5.8	Near Napa, California
1/2/1891	5.8	Near San Jose, California
4/24/189	6.3	East of Watsonville, California
7/31/1889	5.6	San Francisco Bay area, California
5/19/1889	6	North of Antioch, California
4/15/1889	5.5	East of Gilroy, California
3/26/1884	5.9	West of Santa Cruz, California
3/30/1883	6	Near Hollister, California
6/27/1882	5.8	Santa Cruz Mountains, California

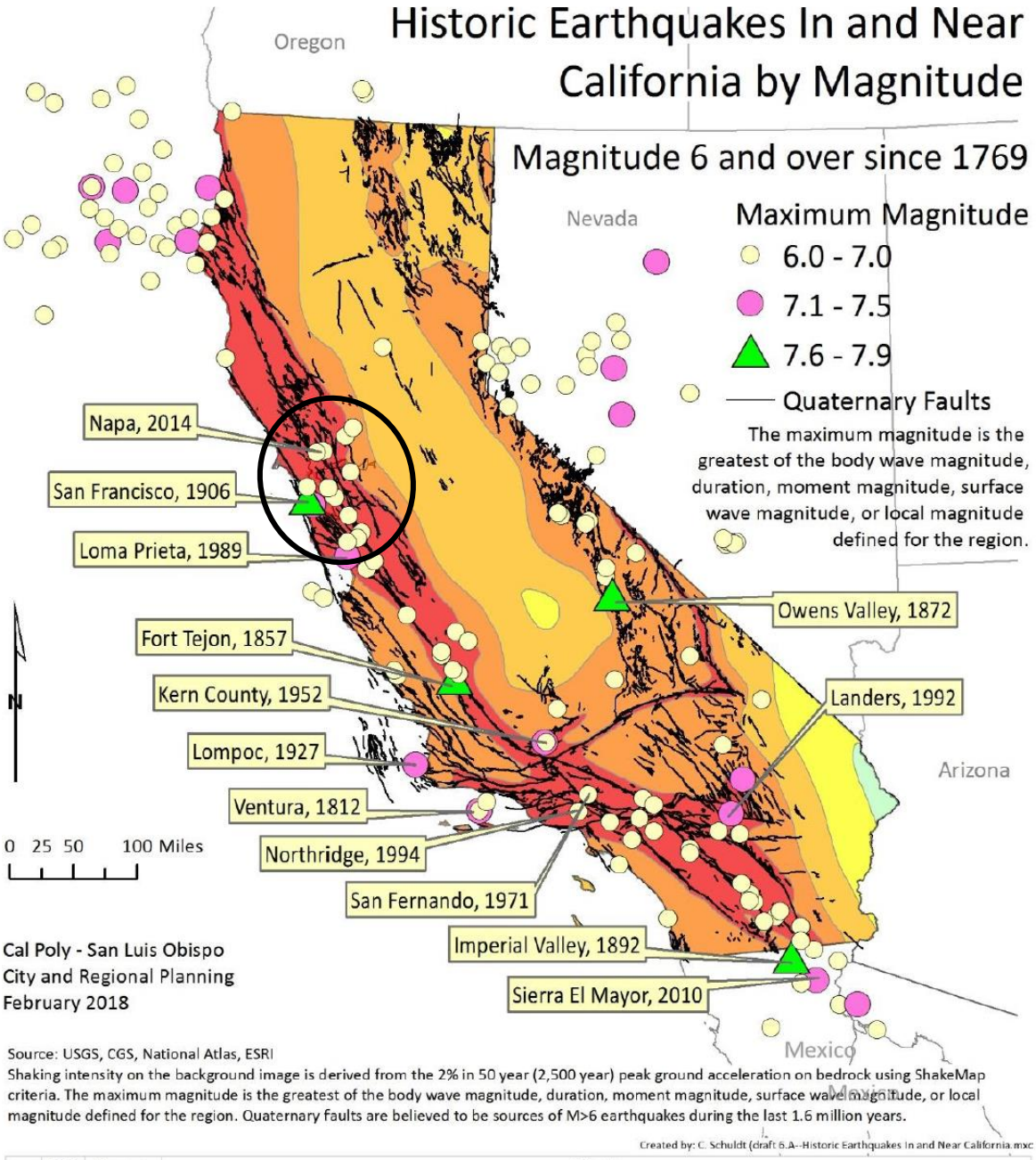
Date	Richter Magnitude	Location
4/10/1881	6.3	Southwest of Modesto, California
4/2/1870	5.8	Near Berkeley, California
2/17/1870	5.9	North of Santa Cruz, California
10/21/1868	6.8	The 1868 Hayward Fault Earthquake, California
7/15/1866	6	Southwest of Stockton, California
3/26/1866	5.8	Near Gilroy, California
10/8/1865	6.5	South of San Jose, California
5/24/1865	5.9	South of San Jose, California
5/21/1864	5.8	Alameda County, California
3/5/1864	6	Alameda County, California
2/26/1864	6.1	Santa Clara County, California
7/4/1861	5.8	Near San Ramon, California
11/26/1858	6.2	North of San Jose, California
12/15/1856	5.9	San Mateo County, California
1/2/1856	5.7	Offshore San Mateo County, California
8/27/1855	5.5	North of San Francisco, California
5/15/1851	5	Near San Francisco, California

Source: USGS

*Search dates January 1, 1850 – April 1, 2023

Figure 4-56 shows major historical earthquakes in California from 1769 to 2017. Since 2017, California has experienced four additional 6.0 or greater earthquakes (2022 - 6.4 Ferndale, 2021 - 6.0 Antelope Valley and 2019 - 6.4 and 7.1 Ridgecrest). None of these earthquakes (over 6.0) since 2017 have affected the Tri-City Planning Area.

Figure 4-56 Historic Earthquakes in California 1769 to 2017



	MMI	Damage	Effects
	X	Very Heavy	Some well-built, wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.
	IX	Heavy	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
	VIII	Moderate to Heavy	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
	VII	Moderate	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly-built or badly designed structures; some chimneys broken.
	VI	Light	Felt by all, many frightened. Some heavy furniture moved; a few instance of fallen plaster. Damage slight.
	V	Very Light	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.

Source: 2018 State of California Multi-Hazard Mitigation Plan

Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Occasional (major earthquake); Highly Likely (minor earthquake)—Seismic activity within the past two hundred years has shown absence of any major or damaging earthquake occurring on identified fault lines that could affect the Tri-City Planning Area. However, the possibility of an earthquake is an ever-present phenomenon facing the Planning Area. The combination of plate tectonics and associated California coastal mountain range geology essentially guarantees earthquake as a result of the periodic release of tectonic stresses. There have been earthquakes as a result of this activity in the historic past, and there will continue to be earthquakes in the future of the Bay Area. It is likely that the Planning Area will be subject to minor earthquakes in the future. Major earthquakes are considered to be less likely, or Occasional, in the Tri-City Planning Area.

Mapping of Future Occurrences

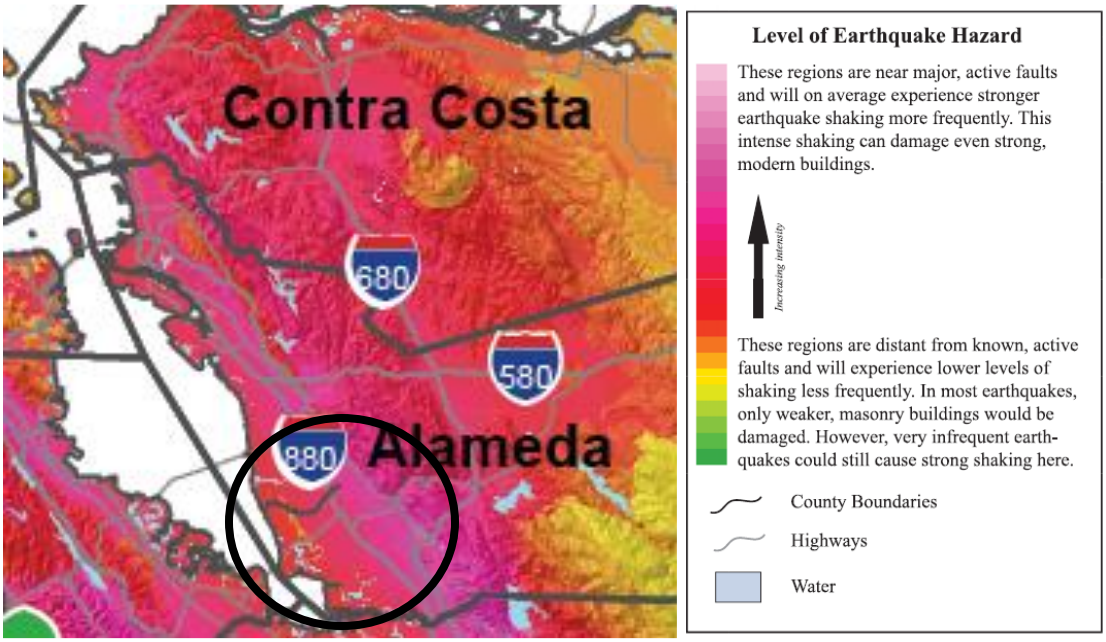
Mapping of future occurrences is presented in the following sections:

- CGS Analysis
- UCERF Analysis

CGS Analysis

Maps indicating the maximum expectable intensity of ground shaking for the County and Tri-City Planning Area are available through several sources. Figure 4-57, prepared by the California Division of Mines and Geology, shows the expected relative intensity of ground shaking and damage in California from anticipated future earthquakes. The shaking potential is calculated as the level of ground motion that has a 2% chance of being exceeded in 50 years, which is the same as the level of ground-shaking with about a 2,500-year average repeat time. Although the greatest hazard is in areas of highest intensity as shown on the map, no region is immune from potential earthquake damage.

Figure 4-57 Maximum Expectable Earthquake Intensity – 2% Chance in 50 Years

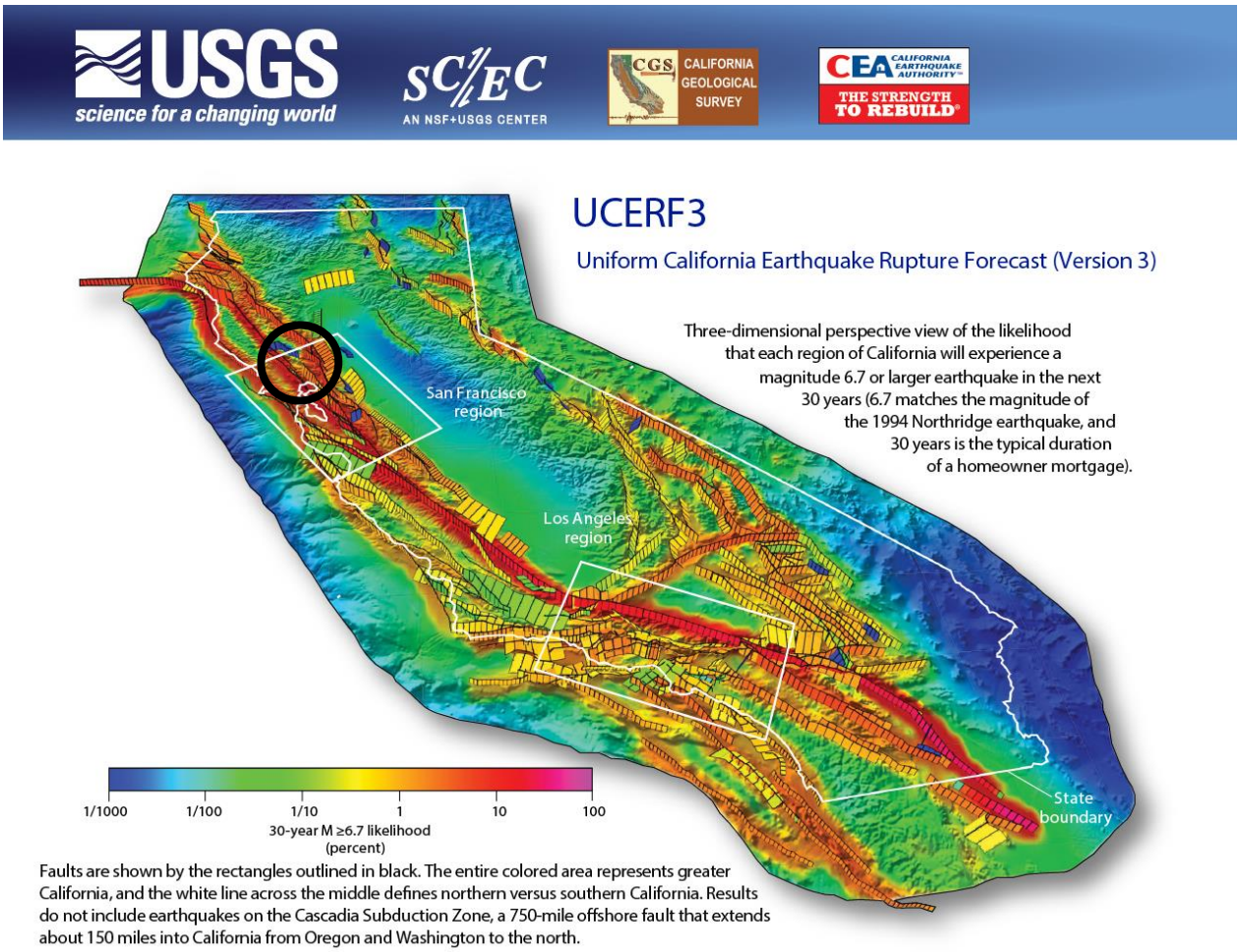


Source: California Division of Mines and Geology

UCERF Analysis

In 2014, the USGS and CGS released the time-dependent version of the Uniform California Earthquake Rupture Forecast (UCERF III) model. The UCERF III results have helped to reduce the uncertainty in estimated 30-year probabilities of strong ground motions in California. The UCERF map is shown in Figure 4-58 and indicates that the Planning Area has a predominantly moderate to high risk of earthquake occurrence.

Figure 4-58 California - Probability of Earthquake Magnitudes Occurring in 30 Year Time Frame



Source: United States Geological Survey Open File Report 2015-3009

Climate Change and Earthquake

Climate change is unlikely to increase earthquake frequency or strength.

Vulnerability Assessment

Vulnerability—Extremely High

Earthquake vulnerability is primarily based on population and the built environment. Urban areas in high seismic hazard zones are the most vulnerable, while uninhabited areas are less vulnerable. The primary impacts of concern are life safety and property damage. Several faults are in and near the Tri-City Planning Area, and seismic hazard mapping indicates that the Planning Area has high seismic hazard potential. It is likely that the Planning Area will be subject to some moderate to severe seismic shaking. Some degree of structural damage due to stronger seismic shaking should be expected.

Seismic events can have particularly negative effects on older buildings constructed of URM, including materials such as brick, concrete, and stone, as well as soft story buildings and tilt-up concrete. These areas in the Planning Area were discussed above in the Seismic Structural Safety section. The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The Planning Area is within the more hazardous Zone 4, which suggests that the Tri-City Planning Area is more vulnerable to potential damaging earthquake events.

The Tri-City Planning Area also has considerable concerns due to fire following earthquake. A discussion of this precedes the assets at risk discussion.

Fire Following Earthquake

Fire following earthquake has been known to exceed the total damage due to primary earthquake effects (shaking, liquefaction, and subsidence). Examples of major urban conflagrations (i.e., block-to-block fire spread, consuming large portions of major urban environments):

- 1923 Tokyo Kanto Earthquake,
- 1906 San Francisco Earthquake and Fire,
- 1995 Kobe Earthquake

Factors contributing to the nature and extent of fire following earthquake include:

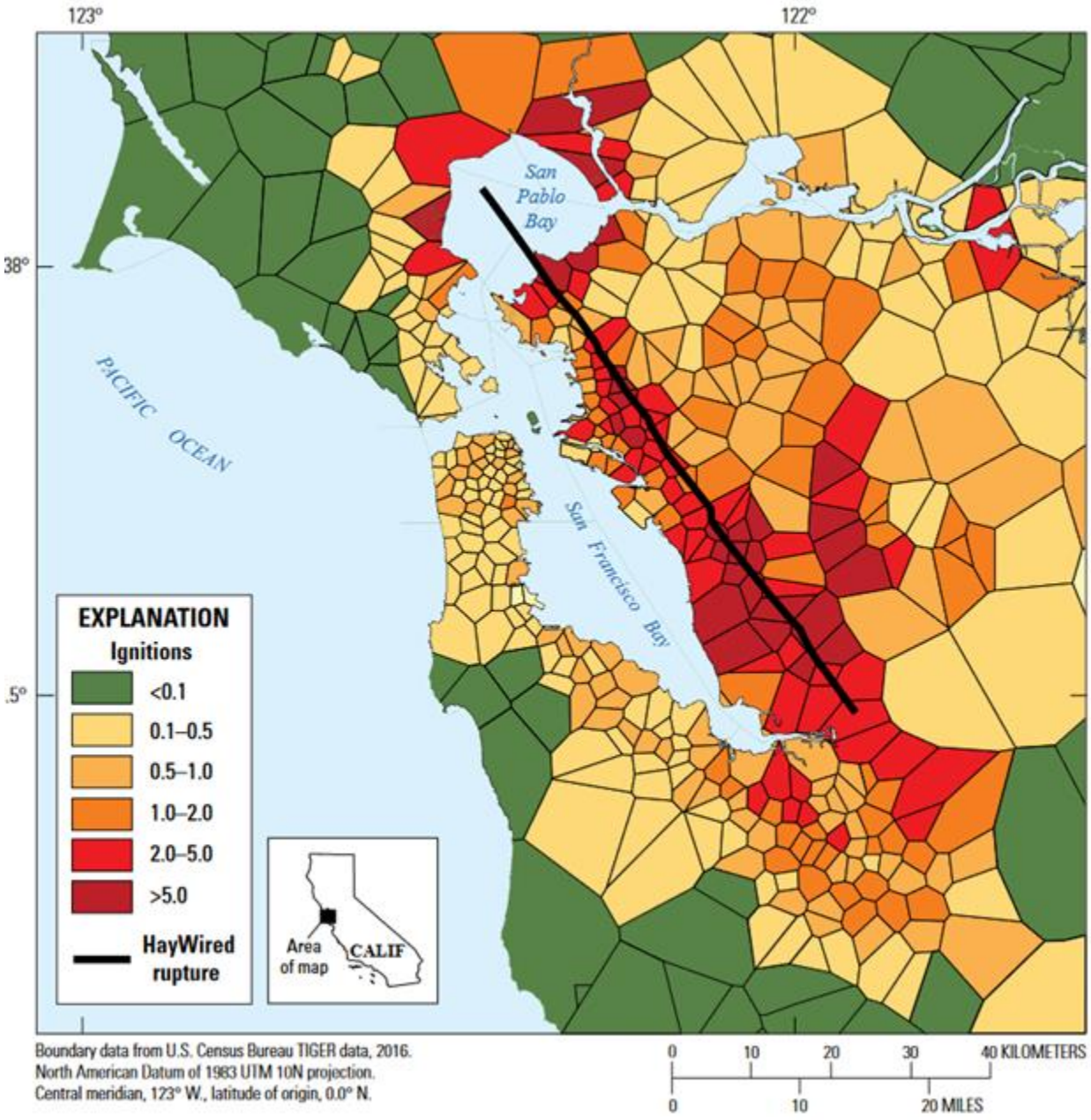
- Potential ignitions (due to building damage or collapse, damage to power or gas utilities, etc.),
- windspeed,
- Prevailing building construction types (i.e., high inventory of wood frame buildings, regardless of the extent of modern fire protection systems – which are likely to fail following a major earthquake),
- Density and prevailing distance between buildings,
- Loss of water pressure in the municipal water supply system (which is almost assured, if there is extensive damage to buildings – absent mitigation measures to isolate functional from damaged water supply),
- Damage to the municipal water supply systems distribution infrastructure, the ability to isolate main breaks to maintain water flow in certain areas where damage to the system is minimal, and whether there alternative water supplies that can support and firefighting operations (e. g. static sources such as open water, cisterns or swimming pools which are accessible to fire apparatus – meaning secure hard stand next to the source, with generally no more than approximately ten feet of vertical distance (22.5 feet is the theoretical maximum) and limited horizontal distance on the order to tens of feet.

This Plan extrapolates estimated fire following earthquake losses by using the results of Scawthorn (2018) to estimate losses for the cities and Planning Area. The Plan also uses Hazus modelling to estimate fire following earthquake losses for the same areas.

Scawthorn (2018) used Voronoi diagrams to estimate fire following earthquake losses, based on the HayWired earthquake scenario. The study uses stochastic modeling, as actual fire losses following a given earthquake scenario cannot be well predicted. The study details number of ignitions, availability of water service, and the final burned area (in millions of 2014 U. S. dollars).

Each polygon in the Voronoi diagram below approximates the area in which an available fire engine responding from the nearest fire station would be first to arrive at a fire. This area is commonly known by fire departments as a "first due" area. Figure 4-59 shows the number of ignitions, by first due area, using the Haywired Scenario mainshock, and assuming breezy conditions and moderate humidity, as described above.

Figure 4-59 Estimated Number of Ignitions - Based on USGS 2017 HayWired Earthquake Scenario



Source: Scawthorn 2018

Using the results of Scawthorn (2018), Table 4-57 shows the estimated number of ignitions, likelihood of available water service, and estimated fire losses for the entire Tri-City area. The figures are based on identification of the fire station "first due" areas used by Scawthorn (2018) and aggregation of the reported results by city. The number of fire stations below are based on current fire protection services in 2024.

Table 4-57 Fire Following Earthquake Estimated Ignitions, Water Supply Availability, and Losses, Inflation-Adjusted (Based on USGS 2017 HayWired Earthquake Scenario)

Area	Fire Stations	Estimated Ignitions	Likelihood of Available Water Service	Estimated Fire Loss (billions of 2024 dollars)
Fremont	11	42	<10%	$1.6
Newark	3	8	<10%	$0.2
Union City	3	15	<10%	$0.9
Tri-City Area	17	65	<10%	$2.7

Source: Scawthorn, C. 2018. "Fire following the Mw 7.05 HayWired earthquake scenario." Pp. 367-400 in The HayWired Earthquake Scenario --Engineering Implications, edited by Shane T. Detweiler and Anne M. Wein. Washington: U.S. Geological Survey Scientific Investigations Report 2017 -5013 -I -Q. https://pubs.er.usgs.gov/publication/sir20175013

Assets at Risk

Many assets in the Planning Area are at risk to surface fault and ground shaking (including liquefaction, landslide, subsidence, and fire following earthquake). Assets at risk from earthquake include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections for earthquake liquefaction and earthquake-induced landslides. A Hazus analysis for earthquake shaking follows.

Methodology for Earthquake Liquefaction and Earthquake-Induced Landslides

The Earthquake Liquefaction and Earthquake-Induced Landslide Area data was obtained from the USGS and CGS. The 2023 Alameda County Parcel/Assessor Data was used as the basis for the inventory of all parcels within the City. GIS was used to overlay both the Earthquake Liquefaction and Earthquake-Induced Landslide hazard layers onto the parcel layer centroids, and where each intersected a parcel centroid, it was assigned with that hazard zone for the entire parcel.

Assets at risk from earthquake liquefaction and earthquake-induced landslide include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources, economic assets, and community activities of value). These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All people and populations are at risk from earthquake shaking (including fire following earthquake) and surface fault. Those at heightened risk include:

- The unsheltered
- Infants and children under age five and their caregivers
- Elderly (65 and older)
- Individuals with disabilities
- Individuals dependent on medical equipment
- Individuals with impaired mobility

The greatest risk to people and populations from earthquake is death and injury. More information on people and populations at risk to earthquake shaking events can be seen in the Hazus scenarios developed for this LHMP and described in the Hazus Analysis section below.

Information on populations at risk to liquefaction and earthquake-induced landslides are detailed below.

Earthquake Liquefaction Susceptibility and Population Analysis

To further evaluate the impact to the residential population to earthquake liquefaction within the Tri-City Planning Area, those residential parcel centroids that intersect the USGS/CGS Earthquake Liquefaction Susceptibility zones were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction. This is shown in Table 4-58.

Table 4-58 Tri-City Planning Area – Count of Residential Parcels and Populations in Earthquake Liquefaction Susceptibility Zones by Jurisdiction

Earthquake Liquefaction Susceptibility Zone / Jurisdiction	Improved Residential Parcels	Population
City of Fremont		
Very High	2,834	8,744
High	18,515	55,360
Moderate	47,756	142,790
City of Newark		
Very High	0	0
High	0	0
Moderate	13,877	46,072
City of Union City		
Very High	3,419	11,522
High	4,475	15,081
Moderate	8,746	29,474

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37)

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums as well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

For the special districts of ACWD and USD, analysis of their service territory populations in the liquefaction zones is performed. This is derived from the table above. This analysis can be found in their respective annexes to this Base Plan.

Earthquake-Induced Landslide and Population Analysis

To further evaluate the impact to the residential population from earthquake-induced landslides within the Tri-City Planning Area, those residential parcel centroids that intersect the CGS Earthquake-Induced Landslide Zones were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction on the Planning Area. This is shown in Table 4-59.

Table 4-59 Tri-City Planning Area – Count of Residential Parcels and Populations in Earthquake-Induced Landslide Zones by Jurisdiction

Jurisdiction/Earthquake Liquefaction Susceptibility Zone	Improved Residential Parcels	Population
City of Fremont		
Inside Zone	581	1,737
City of Newark		
Inside Zone	0	0
City of Union City		
Inside Zone	6	20

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37)

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums as well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

For the special districts of ACWD and USD, analysis of their service territory populations in earthquake-induced landslide zones is performed. This is derived from the table above. This analysis can be found in their respective annexes to this Base Plan.

Structures

All structures in the Tri-City Planning Area are vulnerable to earthquakes, depending on the severity and location of the shake. Unreinforced masonry is at a much greater risk to earthquakes. More information on structures at risk can be seen in the Hazus scenarios below.

Liquefaction and Structures Analysis

Structures in the Planning Area have a measure of risk from liquefaction. The USGS/CGS Earthquake Liquefaction Susceptibility Zone layer was overlaid with the 2023 Alameda County Parcel/Assessor Data in GIS to obtain results. Table 4-60 summarizes the potential estimated damages to the Tri-City Planning Area from properties (and structures) in the liquefaction susceptibility zones.

Table 4-60 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Earthquake Liquefaction Susceptibility Zones by Jurisdiction

Jurisdiction / Liquefaction Susceptibility Zones	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
Very High	3,115	2,888	$801,749,326	$1,581,051,410	$1,109,142,200	$3,491,942,936
High	19,492	18,597	$3,539,204,064	$7,863,294,604	$4,273,571,257	$15,676,069,925
Moderate	54,057	49,894	$15,534,056,038	$30,486,358,491	$19,997,885,170	$66,018,299,699
Low	3,074	2,880	$957,964,366	$1,872,209,870	$980,777,432	$3,810,951,668
Very Low	4,391	3,872	$1,878,341,638	$3,653,728,248	$1,834,188,593	$7,366,258,479
Water	137	0	$1,186,710	$0	$0	$1,186,710
Fremont Total	**84,266**	**78,131**	**$22,712,502,142**	**$45,456,642,623**	**$28,195,564,652**	**$96,364,709,417**
Newark						
Very High	0	0	$0	$0	$0	$0
High	1,116	1,064	$260,451,673	$526,638,617	$349,672,428	$1,136,762,718
Moderate	15,916	14,264	$3,885,409,679	$7,656,138,926	$5,116,983,279	$16,658,531,884
Low	0	0	$0	$0	$0	$0
Very Low	108	42	$29,799,358	$21,703,200	$10,851,600	$62,354,158
Water	18	16	$14,243,503	$19,782,387	$15,221,792	$49,247,682
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**
Union City						
Very High	3,853	3,536	$737,350,931	$1,573,121,083	$1,008,832,967	$3,319,304,981
High	4,603	4,499	$844,311,078	$1,876,401,326	$965,725,718	$3,686,438,122
Moderate	9,694	9,119	$2,312,948,733	$4,905,287,647	$3,211,082,618	$10,429,318,998
Low	6	6	$20,118,316	$129,466,412	$128,740,777	$278,325,505

Jurisdiction / Liquefaction Susceptibility Zones	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Very Low	444	329	$82,063,531	$177,477,988	$117,025,111	$376,566,630
Water	2	0	$0	$0	$0	$0
Union City Total	**18,602**	**17,489**	**$3,996,792,589**	**$8,661,754,456**	**$5,431,407,191**	**$18,089,954,236**
Alameda County Water District (Service Territory)						
Very High	6,971	6,424	$1,536,157,795	$3,154,172,493	$2,117,975,167	$6,808,305,455
High	25,202	24,151	$4,643,889,883	$10,261,489,667	$5,584,124,523	$20,489,504,073
Moderate	79,811	73,342	$21,805,615,757	$43,179,062,672	$28,491,170,990	$93,475,849,419
Low	3,080	2,886	$978,082,682	$2,001,676,282	$1,109,518,209	$4,089,277,173
Very Low	4,671	4,190	$1,923,183,644	$3,802,138,729	$1,926,132,356	$7,651,454,729
Water	142	16	$14,243,503	$19,782,387	$15,221,792	$49,247,682
Alameda County Water District (Service Territory) Total	**119,877**	**111,009**	**$30,901,173,264**	**$62,418,322,230**	**$39,244,143,037**	**$132,563,638,531**
Union Sanitary District (Service Territory)						
Very High	6,961	6,424	$1,536,157,795	$3,154,172,493	$2,117,975,167	$6,808,305,455
High	25,211	24,160	$4,643,966,815	$10,266,334,547	$5,588,969,403	$20,499,270,765
Moderate	79,457	73,298	$21,667,598,601	$43,073,695,296	$28,352,355,604	$93,093,649,501
Low	3,080	2,886	$978,082,682	$2,001,676,282	$1,109,518,209	$4,089,277,173
Very Low	4,593	4,175	$1,905,151,196	$3,787,263,291	$1,918,795,921	$7,611,210,408
Water	58	16	$14,243,503	$19,782,387	$15,221,792	$49,247,682
Union Sanitary District (Service Territory) Total	**119,360**	**110,959**	**$30,745,200,592**	**$62,302,924,296**	**$39,102,836,096**	**$132,150,960,984**

Source: USGS/CGS Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Earthquake-Induced Landslide and Structures Analysis

The CGS Earthquake-Induced Landslide Zone layer was overlaid with the County parcel layer and linked to the Assessor data in GIS to obtain results. Table 4-60 summarizes the potential estimated damages to the Tri-City Planning Area from properties (and structures) in the Earthquake-Induced Landslide Zone.

Table 4-61 City of Fremont – Count and Value of Parcels (and Structures) in Earthquake-Induced Landslide Zone by Jurisdiction

Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont	859	601	$412,889,263	$755,619,849	$383,575,471	$1,552,084,583
Newark	0	0	$0	$0	$0	$0
Union City	44	7	$15,927,800	$3,914,209	$2,266,272	$22,108,281
Alameda County Water District (Service Territory)	778	590	$400,794,178	$740,271,262	$368,734,057	$1,509,799,497
Union Sanitary District (Service Territory)	767	591	$405,652,989	$742,292,722	$369,744,787	$1,517,690,498

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

More information on structures at risk can be seen in the Hazus scenarios below.

Critical Facilities and Infrastructure and Community Lifelines

Earthquakes present a tremendous threat to critical facilities and infrastructure and community lifelines. The following GIS analysis identifies critical facilities and infrastructure at risk to earthquake, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Community lifelines at risk to earthquake include:

- **Safety and Security** – Many personnel from the Planning Area would be involved in response and recovery efforts. This includes police, fire, EMS, public works, and other personnel. Due to the potential for widespread and major damages citywide, these resources can be stretched and quickly overwhelmed.
- **Food, Hydration, and Shelter** – As homes are damaged, shelter needs would significantly increase. Temporary housing would be to be established. Water supplies could be offline for an extended period. Residents, visitors and others caught in a large event would need to find sources of food and water until the Planning Area recovers.
- **Health and Medical** – Substantial numbers of injuries and deaths can occur. This causes EMS calls and ER visits to spike. Portable morgues and refrigeration units may need to be brought in.

Transporting patients to medical facilities may be difficult. Depending on the extent of injuries and deaths the capacity of medical facilities could be strained and eventually overwhelmed.

- **Energy** – The power grid may be damaged from earthquake. Damages to natural gas pipelines that feed homes and businesses in the Planning Area may also be disrupted. Restoring these systems may take longer during a widespread event.
- **Communications** – Communications systems may be damaged during shaking events. Once the shaking ceases, responder communications need to be back online quickly to coordinate response efforts in the Planning Area. Messaging boards and alerts need to be then put into place to ensure public safety and order. Calls to and from family and friends during a hazard event can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts.
- **Transportation** – Major damage can occur to roads and bridges in the Planning Area. Damage can also occur to rail lines and airports in and near the Planning Area. Roads may be closed due to damage, or to debris on the roads from earthquake events. These closures could be place for an extended period while debris clearing efforts are undertaken to allow repairs to be made.
- **Hazardous Material** – Hazardous materials facilities can be compromised during times of earthquake events causing releases of contaminants into the environment. Natural gas pipelines can be affected by earthquakes. This can affect not only residents, but those who are charged with responding to or resolving the spill/rupture.
- **Water Systems** – Damages to underground pipes may occur. These take time to locate and fix in normal circumstances. During periods of earthquake, this becomes even more difficult. Water and wastewater systems and their respective piping can be damaged and systems may become inoperational for extended periods of time.

All community lifelines in the Tri-City Planning Area are vulnerable to earthquakes, depending on the severity and location of the shake and impacts from associated subhazards. A major earthquake event could cause these lifelines to be overwhelmed. Some of these would be able to be restored to service quickly, while others would take more time having a prolonged impact on the people and structures within the Planning Area. More information on community lifelines at risk can be seen in the Hazus scenarios below.

Natural, Historic, and Cultural Resources

The 2023 State Hazard Mitigation Plan noted that environmental problems from earthquakes can be numerous. Earthquake-induced landslides can significantly damage surrounding habitats. It is also possible for earthquakes to reroute streams, which can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater and/or springs may dry up because of changes in underlying geology. Another threat to the environment from earthquakes is the potential release of hazardous materials. Historical and cultural resources are at risk, often due to their age and construction types. The Hazus scenarios below are relatively silent on the vulnerability to natural, historic, and cultural resources, but impacts to these resources could be long lasting.

Any natural, historic, or cultural resource that is in the earthquake liquefaction zone would be at potential risk. For the natural resources, this is likely to be more limited than those associated with the ground shaking but may include uprooting of trees and vegetation and disruption to habitat areas. Historic and cultural resources that are structures or housed in structures could be vulnerable to liquefaction.

Any natural, historic, or cultural resource that is in the earthquake-induced landslide areas would be at potential risk. Given the limited area of earthquake-induced landslide in the Planning Area, as shown on Figure 4-55, historic and cultural assets in the Planning Area are not at sizable vulnerability. The area where the earthquake-induced landslide zones occur in the Planning Area is in the foothill areas to the east. While there are natural resources in this area that may be affected, there are limited historic and cultural resources located there (though there may be as yet unknown native cultural artifacts in this area).

Economic Assets and Community Activities of Value

All economic assets in the Tri-City Planning Area are vulnerable to earthquakes, depending on the severity and location of the shake and associated cascading hazards and impacts. This includes earthquake liquefaction, landslide events, subsidence, and fire following earthquake. All community activities of value would be affected by an earthquake if they were underway during an earthquake event and may be postponed or cancelled until the Planning Area has sufficiently recovered.

As shown on Figure 4-54, most of the Tri-City Planning Area is at moderate or higher liquefaction risk. Almost all economic assets in the Planning Area would be vulnerable. As such, most of the community activities of value would be at risk from liquefaction if it occurred during the event.

Given the limited area of earthquake-induced landslide in the Planning Area, as shown on Figure 4-55, economic assets in the Planning Area are not thought to be at sizable vulnerability. Most of the landslide vulnerability is in the upper elevations to the east, which houses limited economic assets.

Hazus (Earthquake Shaking) Analysis

Hazus is a regional earthquake loss estimation model that was developed by FEMA and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates can be used by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

Hazus 6.1 was utilized to model earthquake losses for the Tri-City Planning Area. Hazus level 2/3 analyses were run, meaning that this more advanced Hazus modelling utilized local inventory data of buildings, essential facilities, hazards, and other data, as provided by the local jurisdictions and Cal OES and FEMA. This local data was used in conjunction with the default Hazus data within the model. This is a planning level analysis. Four primary Hazus scenarios were created for this Plan:

- A Calaveras Fault 7.43 magnitude event
- A Hayward + Rodgers Creek Fault 7.57 magnitude event
- A Hayward Fault (Haywired) Scenario Fault 7.0 magnitude event
- A San Andreas Fault 7.9 magnitude event

Details of these Hazus Scenarios are detailed in Table 4-62.

Table 4-62 Hazus Scenarios by Fault, Magnitude, and Epicenter

Earthquake Fault	Magnitude	Epicenter	Fault Name	Hazus Scenario Name (user named)
Calaveras	7.43	37.61, -121.89	sc+cc+nc--cs+cc+cn-3-10	DETERM CN_CC_CS_CE 7.43M EQ CT
Hayward + Rodgers Creek	7.57	37.55, -121.95	sh+nh+rc-- hs+hn+rc	DETERM SH_NH_RC 7.57M EQ CT
Hayward (Haywired)	7.00	37.88, -122.25	sh+nh-- hs+hn	DETERM HN_HS 7.0M EQ CT
San Andreas	7.90	37.76, -122.55	scz+pn+ncs+ncn --sas+sap+sa	DETERM SAO_SAN_SAP_SAS 7.9M EQ CT

Source: USGS Hazus Specialist; Tri-City Participating Jurisdictions; Hazus Scenario Catalogs:
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014calaverascncccscesha_m7p43_se
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014haywardrchnhsshaw09m_m7p57_se
https://earthquake.usgs.gov/scenarios/eventpage/ushaywiredm7.05_se
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014nsanandreassansapsas_m7p88_se

Methodology

Hazus Version 6.1 was released in November 2023. This natural hazard risk assessment GIS-based software updates Hazus Version 6.0 previously released in November 2022. Hazus 6.1 includes major inventory data, methodology, and software enhancements. Utilizing Hazus 6.1, Hazus deterministic scenarios were run utilizing supplemental and locally provided inventory data developed for input into Hazus' Comprehensive Data Management System (CDMS). The deterministic approach allows for the selection of a recognized fault, epicenter, and magnitude associated with each identified scenario. The additional steps taken to prepare the Hazus model are detailed below.

Hazus Study Regions and Census Tracts

Hazus analyses for each of the four earthquake fault scenarios, were conducted for the Tri-City Planning Area (which also is the same Hazus study region, based on census tract data, as covered by ACWD and USD), and specific to each of the three cities: Fremont, Newark, and Union City. This required a Hazus study region to be developed providing coverage for the Tri-City Planning Area and the five participating jurisdictions. The study regions created in Hazus are defined by the US census tract areas encompassing each jurisdiction's geographic boundaries. The study regions and associated census tracts comprising the various scenarios are shown in Table 4-63

Table 4-63 Census Tract Count and Region Name by Jurisdiction

Jurisdiction / Hazus Study Region	Census Tract Count	Hazus Study Region Name (user named)
Tri-City	74	TRICITY_BY_CT_D
Fremont	48	FREMONT_BY_CT_B
Newark	8	NEWARK_BY_CT_C
Union City	17	UC_BY_CT_B

Jurisdiction / Hazus Study Region	Census Tract Count	Hazus Study Region Name (user named)
ACWD	74	TRICITY_BY_CT_D
USD	74	TRICITY_BY_CT_D

Source: Hazus 6.1, City of Fremont GIS

Hazus Datasets

Hazus analyses are performed on a pre-designated statewide (California) facility dataset for Level 1 Hazus. For a Level 2,3 Hazus analysis, the Hazus tool allows for the option to further refine the data with locally available data. In the development of the Level 2/3 Hazus analyses for this LHMP Update, additional datasets were integrated and/or overwritten into the model prior to performing the enhanced Level 2/3 analyses as discussed below.

Comprehensive Data Management System (CDMS)

CDMS is a Hazus support tool that allows users to move data to and from Hazus statewide datasets. Utilizing Hazus' CDMS application, 46 essential facilities located within the City of Fremont's jurisdictional boundaries were provided by the City of Fremont and updated into Hazus' California, statewide dataset. These included the following categories and numbers of essential services facilities that replaced the associated default (statewide) data:

- potable water facilities - 11
- natural gas – 1
- electric – 9
- police stations – 8
- medical care – 3
- fire stations – 11
- emergency operation centers (EOC) – 3

These CDMS updates enabled refined local data for the City of Fremont to be utilized during the Level 2/3 Hazus analyses. Essential facilities in Newark and Union City's jurisdictions were not updated.

Advanced Engineering Building Module (AEBM)

The Advanced Engineering Building Module (AEBM) was also updated utilizing the CDMS tool. Fremont provided a 65-building supplemental datasets to be incorporated into the AEBM statewide dataset in CDMS to be utilized specifically for the Fire Following Earthquake analysis. The AEBM system allows users to be able to create building-specific damage and loss functions to better assess losses for an individual building (or group of similar buildings). The term "building-specific" distinguishes the development of damage and loss functions from the "generic" building functions of Hazus. Building-specific damage and loss functions are based on the properties of a particular building. The 65 facilities updated in the AEBM included the following categories and numbers of facilities:

- police stations – 8
- medical care – 3
- fire stations – 11
- EOC – 3

- user-defined facilities – 40

The detailed AEBM inventory of the 65 facilities utilized for the Hazus analyses, Fire Following Earthquake scenarios are detailed in Figure 4-60 and Table 4-64.

Figure 4-60 Tri-City Planning Area – Hazus AEBM Inventory Map

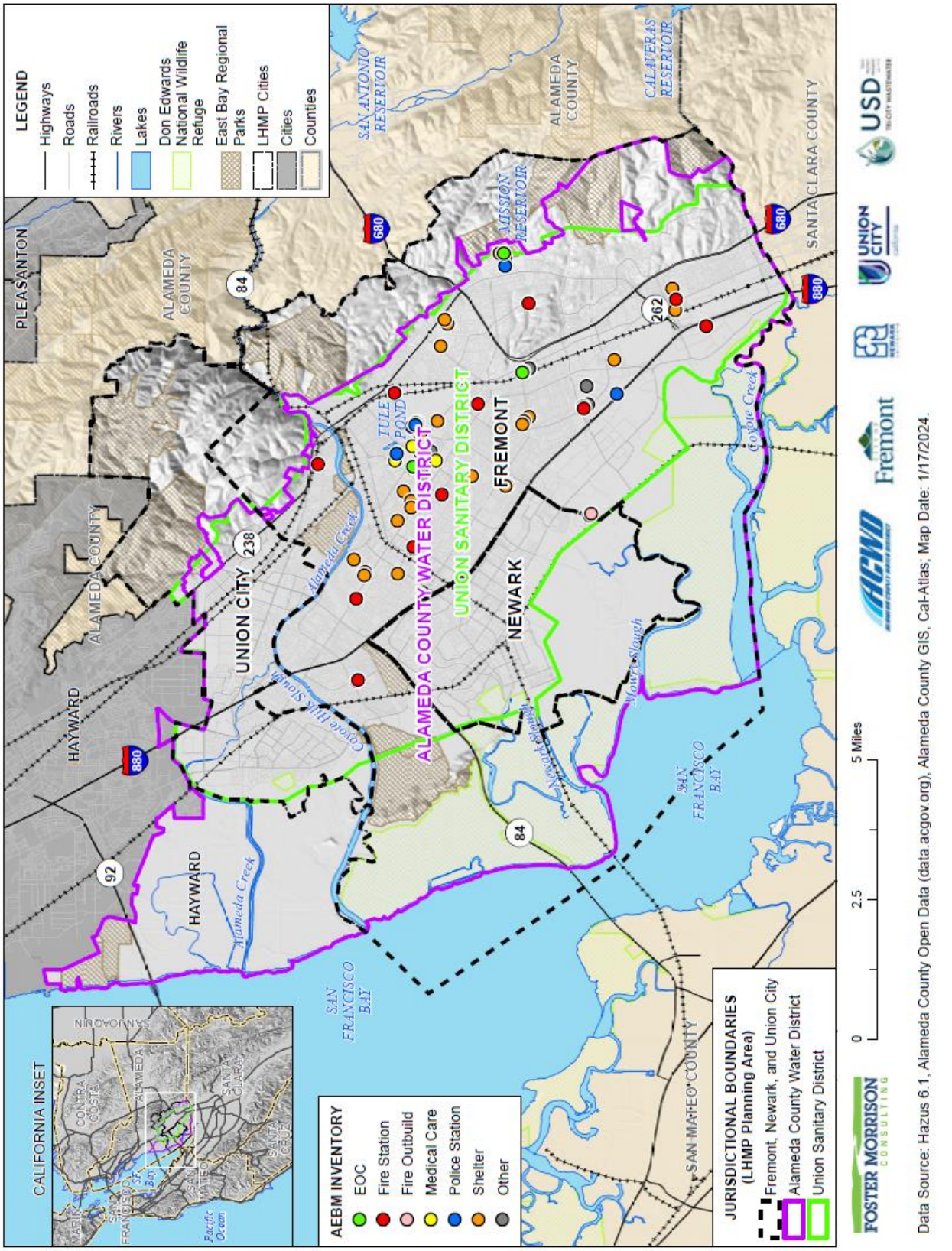


Table 4-64 AEBM Inventory - Categories and Facilities

AEBM Category	Facility Name	Hazus/AEBM ID	Building Count
EOC	City Of Fremont Emer Oper	CA000012	1
	Maint Ctr Admin	CA000054	1
	Ohlone COLL EOC	CA000013	1
	EOC Total		**3**
Fire Station	Fremont Fire Dept Stn 1	CA000009	1
	Fremont Fire Dept Stn 2	CA000001	1
	Fremont Fire Dept Stn 3	CA000004	1
	Fremont Fire Dept Stn 4	CA000010	1
	Fremont Fire Dept Stn 5	CA000003	1
	Fremont Fire Dept Stn 6	CA000002	1
	Fremont Fire Dept Stn 7	CA000008	1
	Fremont Fire Dept Stn 8	CA000005	1
	Fremont Fire Dept Stn 9	CA000011	1
	Fremont Fire Dept Stn 10	CA000006	1
	Fremont Fire Dept Stn 11	CA000007	1
	Fire Station Total		**11**
Fire Outbuild	Fremont Fire Dept Stn 10 (Stor Bldg)	CA000025	1
	Fremont Fire Dept Stn 6 (Stor Bldg)	CA000024	1
	Fremont Fire Dept Stn 7 (Stor Bldg)	CA000026	1
	Fremont Fire Dept Stn Tact Train CTR	CA000027	1
	Fremont Fire Dept Tact Train Tower	CA000028	1
	Fire Outbuild Total		**5**
Medical Care	Fremont Hospital	CA000065	1
	Kaiser Foundation Hospital - Fremont	CA000063	1
	Washington Hospital - Fremont	CA000064	1
	Medical Care Total		**3**
Police Station	BART Police Substation	CA000062	1
	California Highway Patrol - Nimitz In...	CA000055	1
	Fremont Police Department	CA000057	1
	Jail/Evidence WHSE	CA000061	1
	Ohlone College Police	CA000056	1
	Police Department Ancillary Building	CA000058	1
	Police Department Fuel Station	CA000059	1
	Police Motorcycle Storage	CA000060	1
	Police Station Total		**8**
Shelter	Age Well Ctr At Lake Elizabeth	CA000029	1
	Age Well Ctr At S. Fremont	CA000030	1

AEBM Category	Facility Name	Hazus/AEBM ID	Building Count
	American HS (CFTRA)	CA000039	1
	American HS (Rotunda & Gym)	CA000038	1
	Centerville JH (Multi-Use Rm)	CA000045	1
	Ctrville Park Comm Ctr	CA000031	1
	Fremont Main Library	CA000036	1
	G. M. Walters Middle (M-P RM)	CA000047	1
	Irvington COMM CTR	CA000032	1
	Irvington HS (CFTRA)	CA000049	1
	Irvington HS (GYM)	CA000048	1
	John F. Kennedy HS (CFTRA)	CA000051	1
	John F. Kennedy HS (Gym)	CA000050	1
	John M. Horner JH (M-P RM & KIT)	CA000046	1
	Lila Bringhurst Elem (M-P RM)	CA000035	1
	Los Cerritos Comm CTR	CA000033	1
	Mission SAN Jose HS (CFTRA)	CA000041	1
	Mission San Jose HS (Main GYM)	CA000040	1
	Ohlone Coll - Frem Camp (CFTRA)	CA000053	1
	Ohlone Coll - Frem Camp (Gym)	CA000052	1
	Thornton Junior HS (GYM)	CA000037	1
	Warm Springs Comm Ctr	CA000034	1
	Washington HS (CFTRA)	CA000043	1
	Washington HS (GYM & AUX GYM)	CA000042	1
	William Hopkins JH (M-P RM)	CA000044	1
	Shelter Total		**25**
Other	Admin CTR BLDG "B"	CA000014	1
	Dev Svcs Ctr	CA000015	1
	Downtown Event Ctr	CA000023	1
	Fremont Hall Of Justice	CA000021	1
	Fremont Unified School Dist	CA000016	1
		CA000017	1
	Maint Ctr Shops	CA000018	1
	Maint Ctr Vehicle Mtce	CA000019	1
	Maint Ctr Warehouse	CA000020	1
	Tri-City Animal Shelter	CA000022	1
	Other Total		**10**
Grand Total			**65**

Source: City of Fremont

Additional Datasets

Three additional hazard based data sets were integrated into the Hazus model. These include USGS shake maps and liquefaction and landslide susceptibility layers. These are discussed in the following paragraphs.

Within the Hazus application and for each of the study regions, the USGS ShakeMap was integrated into the Hazus model. The ShakeMap is a product of the USGS Earthquake Hazards Program in conjunction with the regional seismic networks. ShakeMaps provide near-real-time maps of ground motion and shaking intensity following significant earthquakes. The ShakeMaps used for each of the four primary scenarios are shown in Table 4-65.

Table 4-65 USGS ShakeMap Dataset

Earthquake Fault	Selected USGS ShakeMap (PGA)	USGS Website (scenario information)
Calaveras	M74-Calaveras: CN+CC+ CS+CE v14	https://earthquake.usgs.gov/scenarios/eventpage/bssc2014calaverascncccscesha_m7p43_se
Hayward + Rodgers Creek	M7.6-Hayward: RC+HN+ HS v13	https://earthquake.usgs.gov/scenarios/eventpage/bssc2014haywardrchnhsshaw09m_m7p57_se
Hayward (Haywired)	M 7.1 Scenario Earthquake - Haywired M7.05 Scenario v33	https://earthquake.usgs.gov/scenarios/eventpage/ushaywiredm7.05_se
San Andreas	M 7.9 Scenario Earthquake - N. San Andreas: SAN+SAP+SAS	https://earthquake.usgs.gov/scenarios/eventpage/bssc2014nsanandreassansapsas_m7p88_se

Source: Hazus 6.1

Two additional hazard-based datasets, were included to further enhance the model. The FEMA Hazus team provided the latest California liquefaction susceptibility dataset, and the California landslide susceptibility dataset was obtained from the California Geological Survey. Both datasets were uploaded into the Hazus application and are shown in Table 4-66

Table 4-66 Additional Hazard (Liquefaction and Landslide Susceptibility) Datasets

Type	Dataset
Liquefaction Susceptibility	BayAreaLiquefaction.mdb
Landslide Susceptibility	CGS_Earthquake_Hazard_Zones_SHP_Landslide_Zones

Source: Hazus 6.1

Running the Hazus Analyses

Running the four primary Hazus scenarios on each of the four study regions, as previously described, provides coverage and results for the Tri-City Planning Area and specific to each of the five participating jurisdictions to this LHMP Update.

Each of the four primary earthquake scenarios generated an Earthquake Hazus Global Summary Risk Report for each Hazus defined study region. The report provides an estimate of seismic risk and assesses current and future potential seismic-related losses. For each study region, the report provides information on loss estimates based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The loss estimates provide Annualized Earthquake Loss (AEL) that detail long-term losses measured in U.S. dollars per one year. It also provides estimates of debris, displaced households, shelter requirements and casualties. The total economic loss includes:

- **Building-Related Losses.** The building losses are broken into two categories: direct building losses and business interruption losses.
- **Transportation and Utility Lifeline Losses**. For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages.

To support the results presented in the Hazus Global Summary Risk Reports for each primary scenario (and by each jurisdiction's study region), three maps each were developed to further illustrate seismic risk and losses. These include:

- Peak Ground Acceleration Shake Map
- Liquefaction Probability Map
- Total Loss Map

Fire Following Earthquake

The Hazus analysis for each of the primary Hazus runs also includes two scenarios or iterations of Fire Following Earthquake. The Fire Following Earthquake component to the Hazus tool allows for parameters to be adjusted to obtain varying output results based on factors such as fire engine response times and weather-related parameters such as wind speed and direction. For each of the four Hazus primary scenarios run for each of the four study regions (i.e., The Tri-City Planning Area/ACWD/USD, Fremont, Newark, and Union City), two Fire Following Earthquake iterations were run. The two Fire Following Earthquake parameters modified for this analysis included Wind Speed and Direction:

- **Fire Following Earthquake Baseline Parameters.** Utilizes a wind speed of 10 mph, with a default direction of 0, which is a north wind.
- **Fire Following Earthquake Adjusted Parameters.** Utilizes a wind speed of 50 mph, with a northeast direction. Note: this is based on the presence of the Diablo Winds in the study region which generally flow at a northeasterly direction and can reach speeds (or gusts) of up to 70-80 mph. The 50 mph wind speed was utilized as this was the reported wind speed that occurred during the 1991 Tunnel Fire.

These are shown in Table 4-67.

Table 4-67 Fire Following Earthquake – Wind Speed and Direction Scenarios

Jurisdiction / Hazus Study Region	Scenario 1	Scenario 2
Tri-City	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Fremont	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Newark	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Union City	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
ACWD	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
USD	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees

Source: Hazus 6.1

To support the Fire Following Earthquake results for each primary scenario (and by each study region), four maps were developed to further illustrate Fire Following Earthquake risk and exposure. These include:

- Number of Ignitions Map
- Population Exposure Map
- Value Exposure Map
- Fire Water Demand (gpm) Map

Hazus Results by Scenario

The Hazus results by scenario are summarized below. Of the four primary earthquake scenarios run for the Tri-City Planning Area, the Hayward Rodgers Creek Scenario is the one likeliest to cause the greatest damage.

Calaveras Fault Hazus Scenario (Epicenter: Fremont; Magnitude: 7.43)

The Hazus results for the Calaveras Fault Hazus Scenario is summarized below in Table 4-68. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained.

Table 4-68 Tri-City Planning Area– Calaveras Fault HAZUS Earthquake Deterministic Results for 7.43 M Event

Type of Impact	Impacts to City from 7.43 Deterministic Earthquake
Total Buildings Damaged (based on 102,000 buildings)	Slight: 34,485 Moderate: 10,737 Extensive: 3,324 Complete: 802
Building and Income Related Losses	$6,072,200,000
Total Economic Losses (Includes building, income and lifeline losses)	$6,694,910,000
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 410 Requiring hospitalization: 64 Life threatening: 4 Fatalities: 7

Type of Impact	Impacts to City from 7.43 Deterministic Earthquake	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 655 Requiring hospitalization: 134 Life threatening: 20 Fatalities: 32	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 534 Requiring hospitalization: 138 Life threatening: 74 Fatalities: 34	
Damage to Transportation Systems	1 bridge with at least moderate damage	
Damage to Essential Facilities	4 schools and 1 EOC with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	1 wastewater facility, 1 electrical power facility, and 2 communication facilities with at least moderate damage. 0 facilities with complete damage. 1,018 potable water line breaks, 511 wastewater line breaks, and 8 natural gas line breaks.	
Households without Power/Water Service (Based on 113,685 total households)	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 110,435 Water loss, Day 3: 109,958 Water loss, Day 7: 108,722 Water loss, Day 30: 72,925 Water loss, Day 90: 0
Displaced Households	2,703 displaced households	
Shelter Requirements	1,328 persons	
Debris Generation	624,000 tons	

Hazus 6.1

Loss Estimates Highlights

Hazus estimates that about 14,862 buildings will be at least moderately damaged. This is over 14.00 % of the buildings in the region. There are an estimated 801 buildings that will be damaged beyond repair.

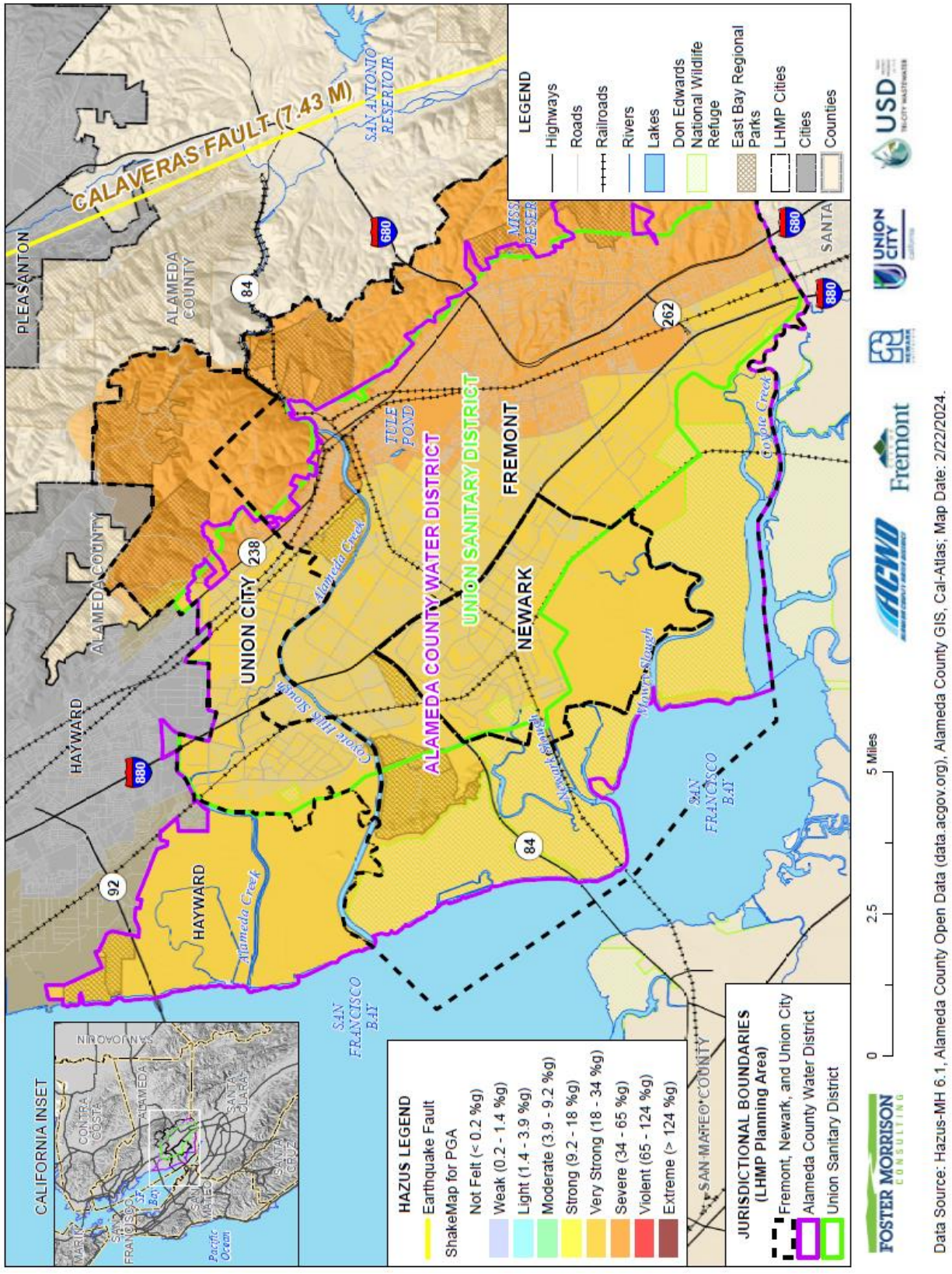
Before the earthquake, the region had 556 hospital beds available for use. On the day of the earthquake, the model estimates that only 310 hospital beds (56.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 79.00% of the beds will be back in service. By 30 days, 93.00% will be operational.

The total building-related losses were 6,027.20 (millions of dollars); 10 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 50 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure 4-61.

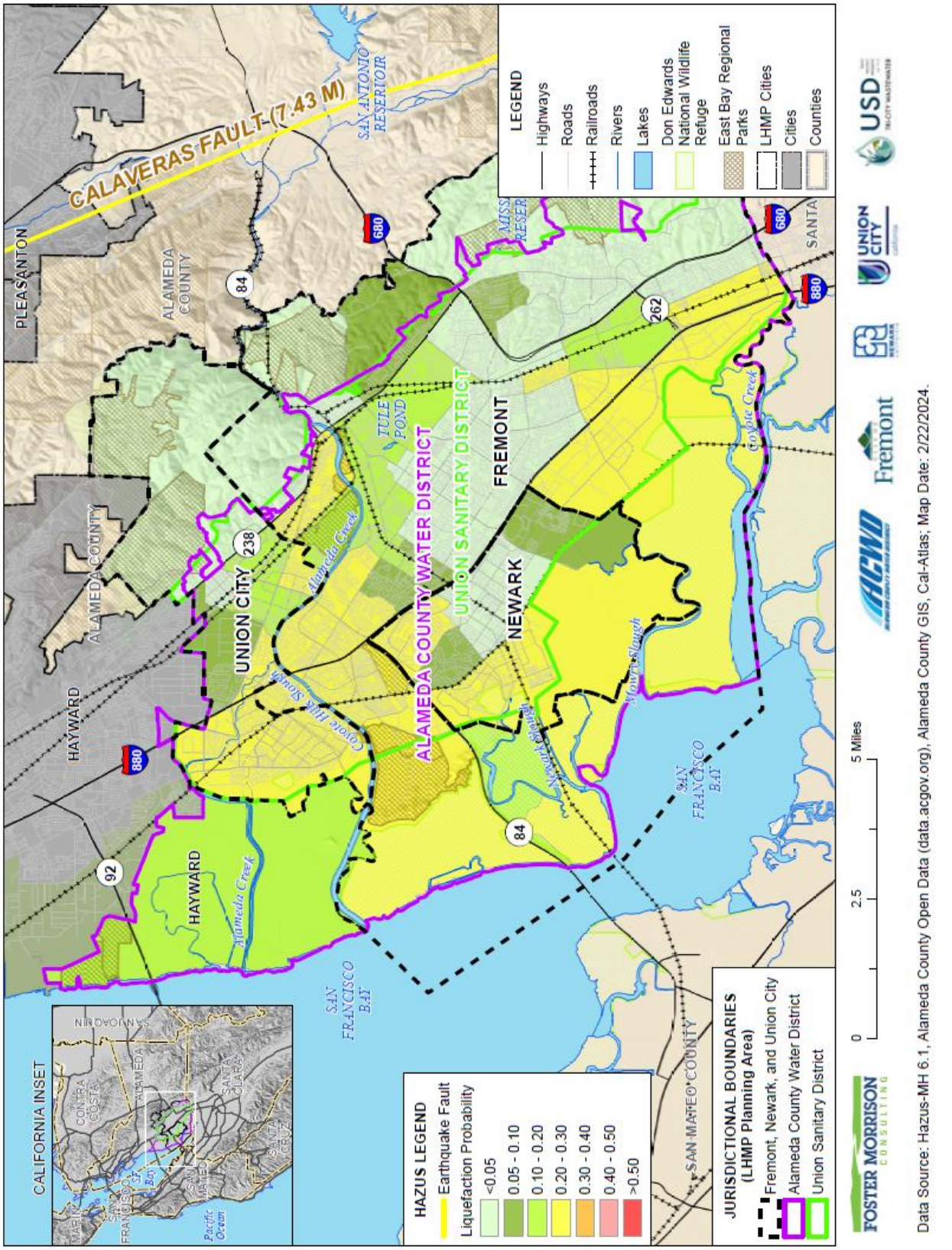
Figure 4-61 Calaveras Fault – 7.43 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure 4-62.

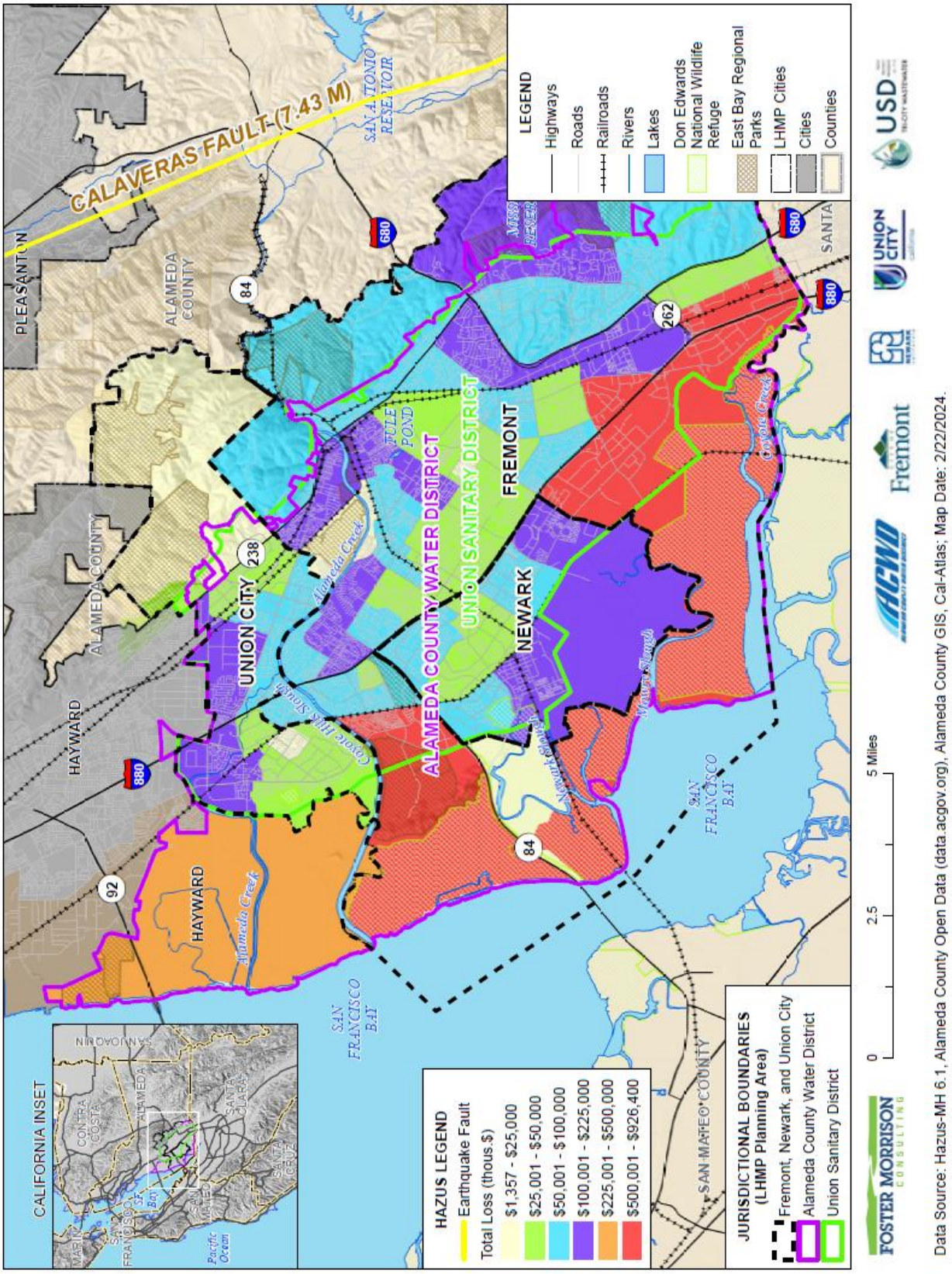
Figure 4-62 Calaveras Fault – 7.43 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure 4-63.

Figure 4-63 Calaveras Fault – 7.43 Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Calaveras Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-64.
  - ✓ Population Exposure is shown on Figure 4-65.
  - ✓ Value Exposure is shown on Figure 4-66.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-67.
- Four maps were created for the 50-mph scenario
  - ✓ Number of Ignitions is shown on Figure 4-68.
  - ✓ Population Exposure is shown on Figure 4-69
  - ✓ Value Exposure is shown on Figure 4-70
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-71.

Figure 4-64 Calaveras Fault 7.43 Magnitude Number of Ignitions (10 MPH Winds)

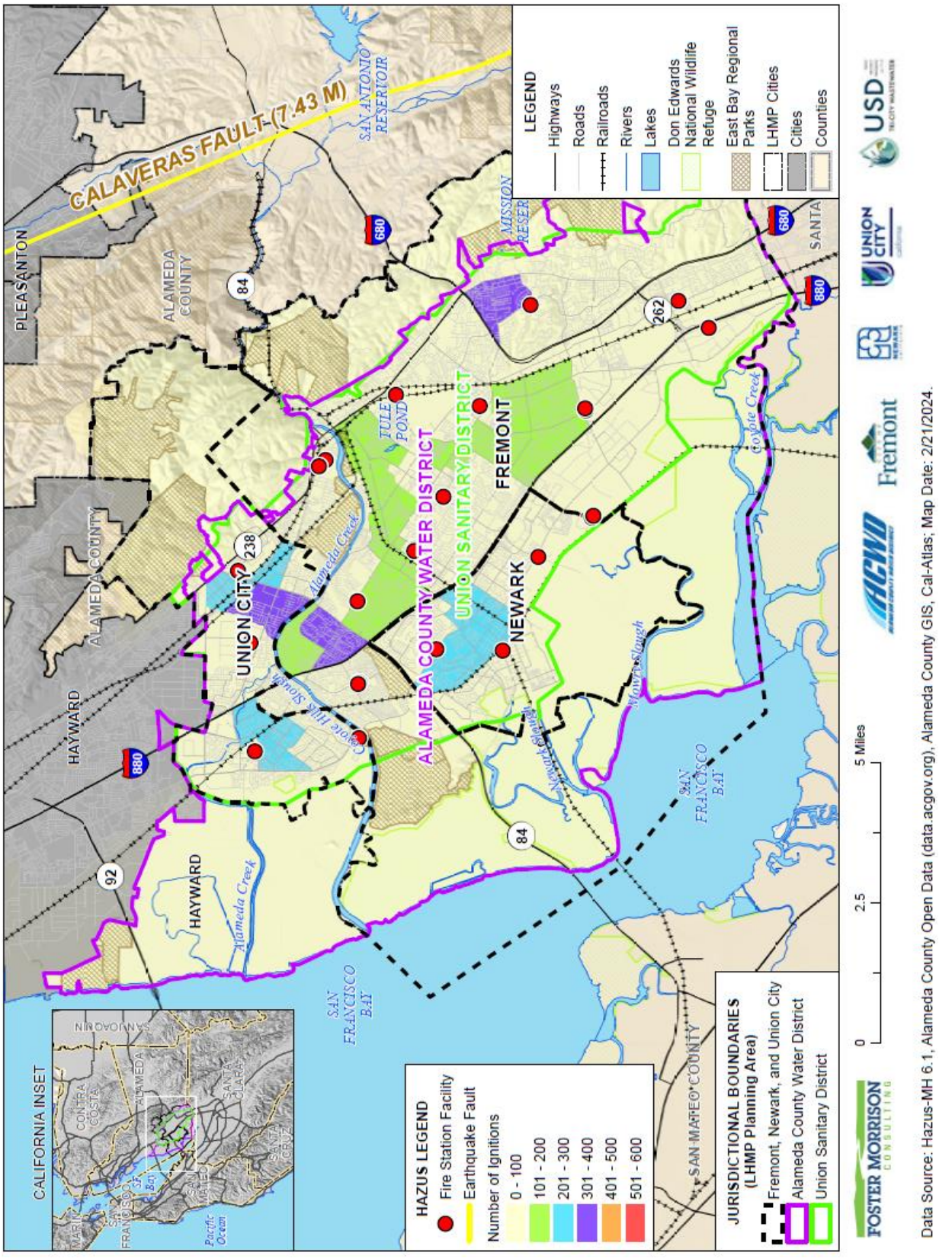


Figure 4-65 Calaveras Fault 7.43 Magnitude Population Exposure (10 MPH Winds)

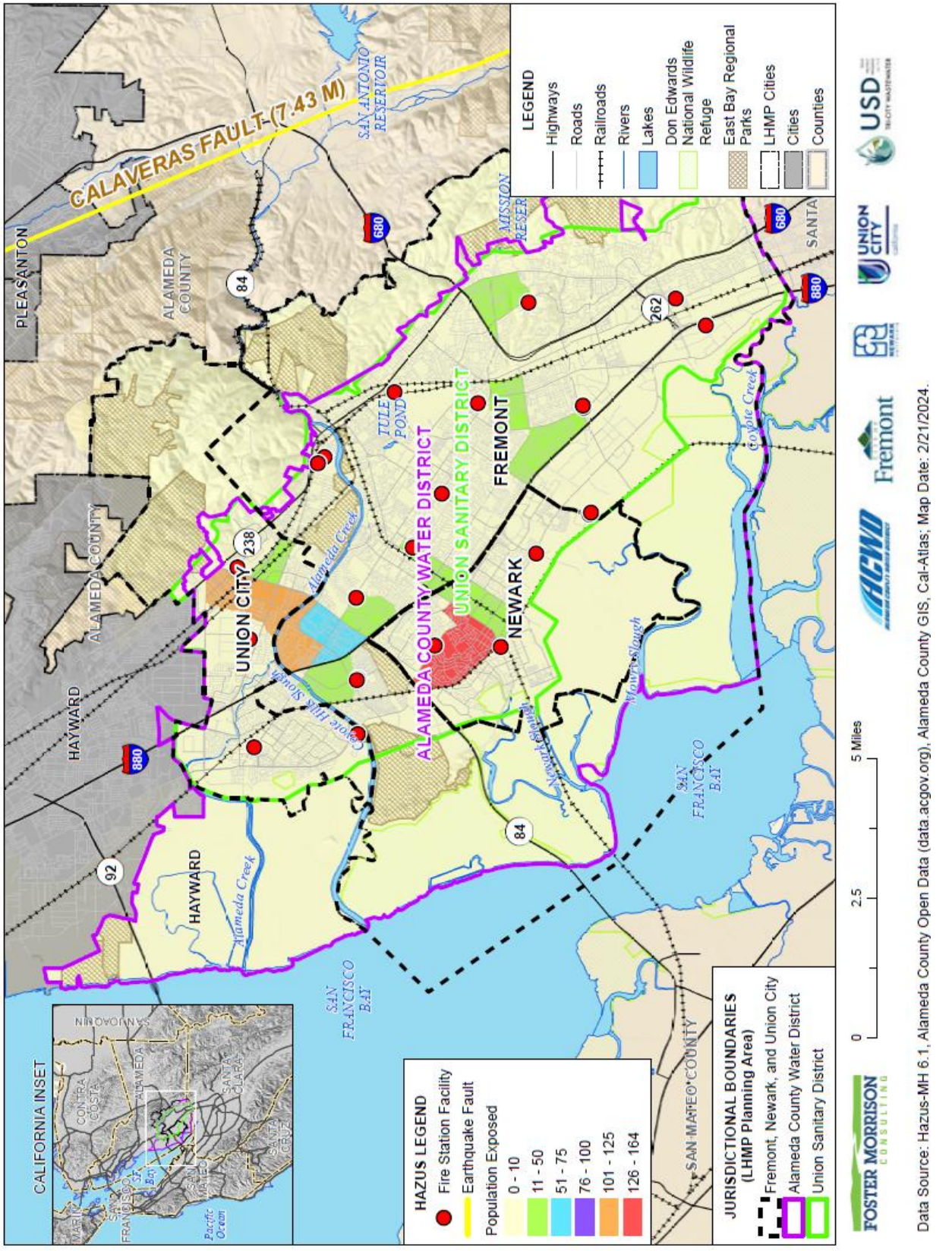


Figure 4-66 Calaveras Fault 7.43 Magnitude Exposed Values (10 MPH Winds)

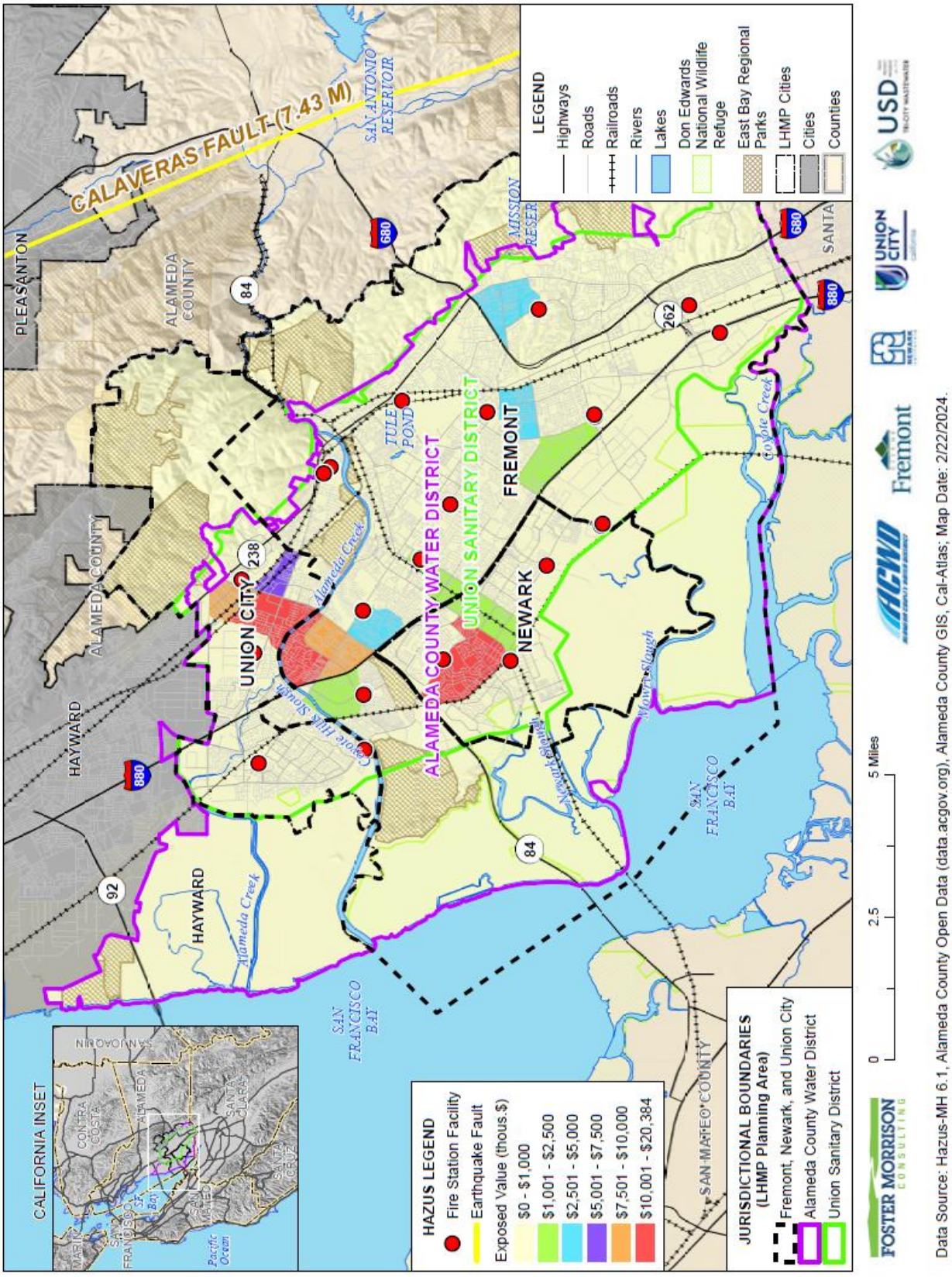


Figure 4-67 Calaveras Fault 7.43 Magnitude Fire Water Demand in GPM (10 MPH Winds)

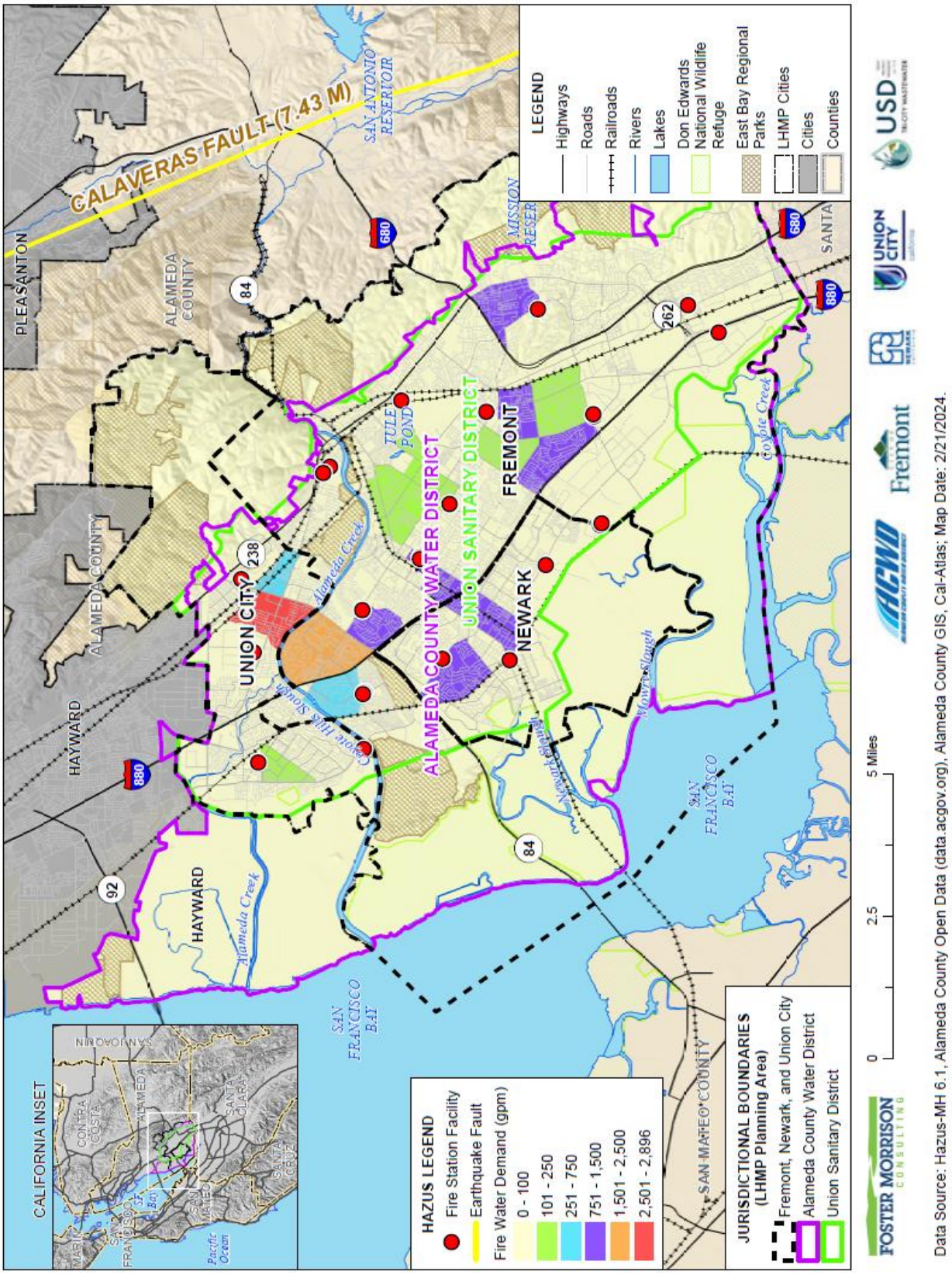


Figure 4-68 Calaveras Fault 7.43 Magnitude Number of Ignitions (50 MPH Winds)

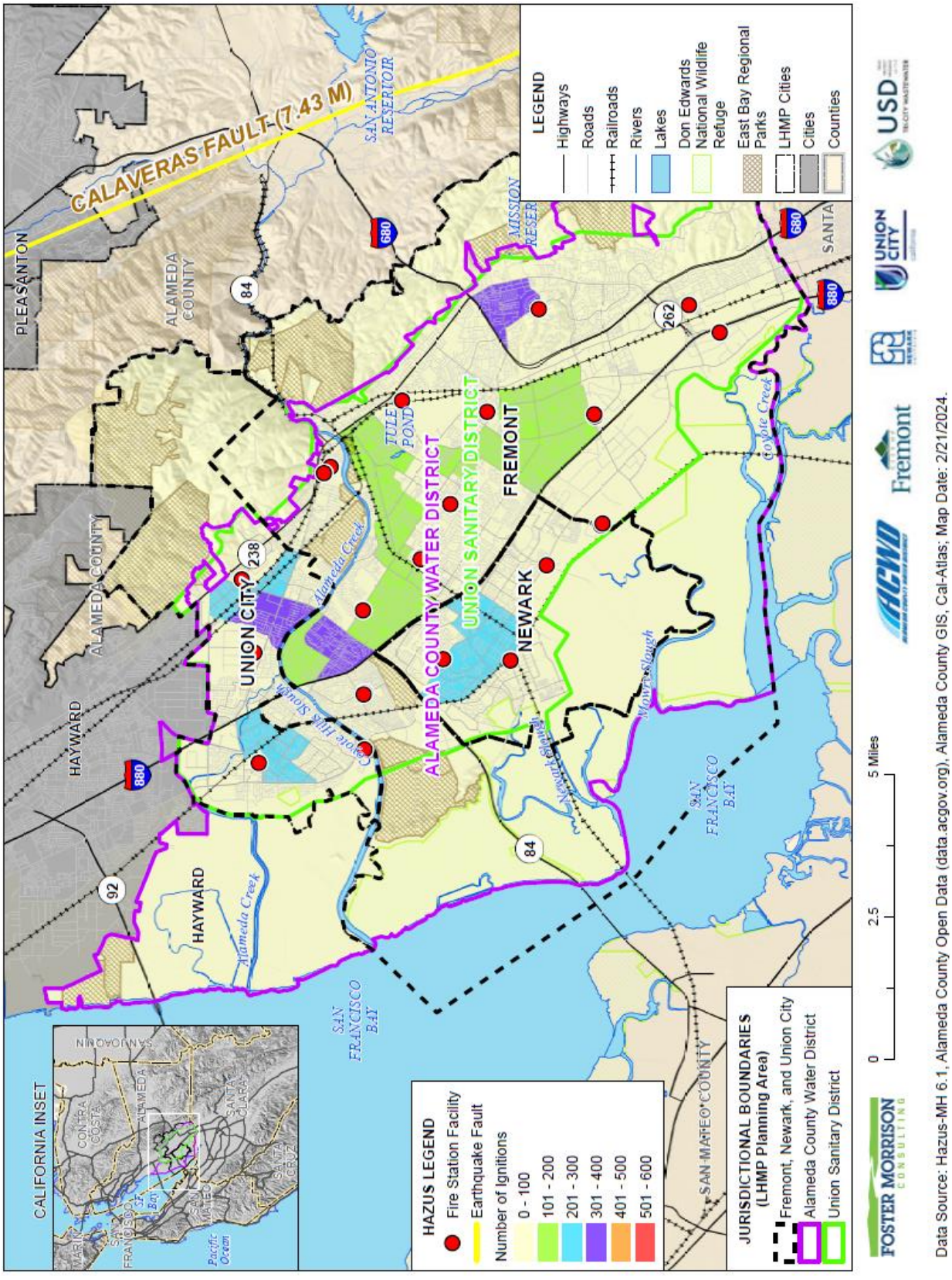


Figure 4-69 Calaveras Fault 7.43 Magnitude Population Exposure (50 MPH Winds)

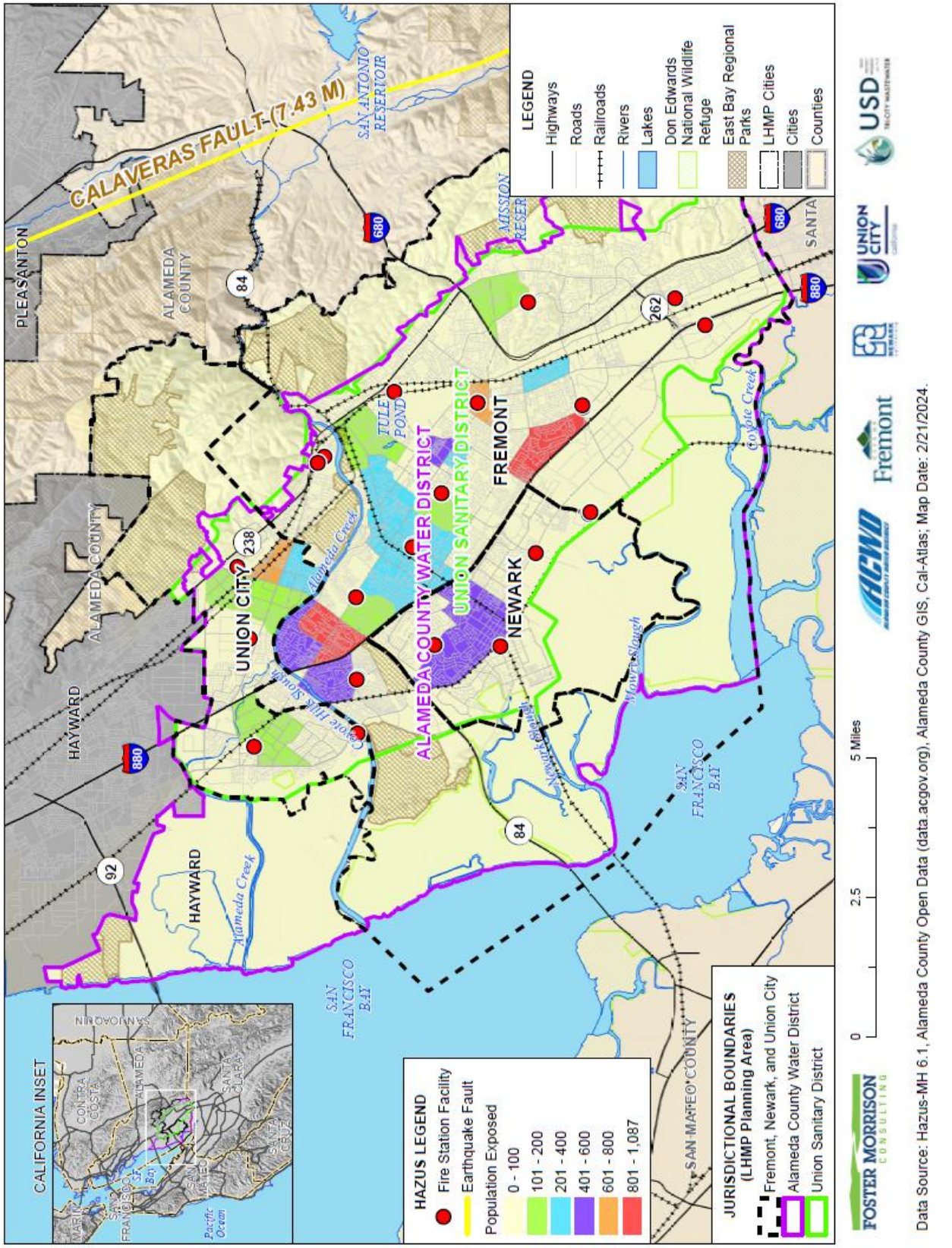


Figure 4-70 Calaveras Fault 7.43 Magnitude Exposed Values (50 MPH Winds)

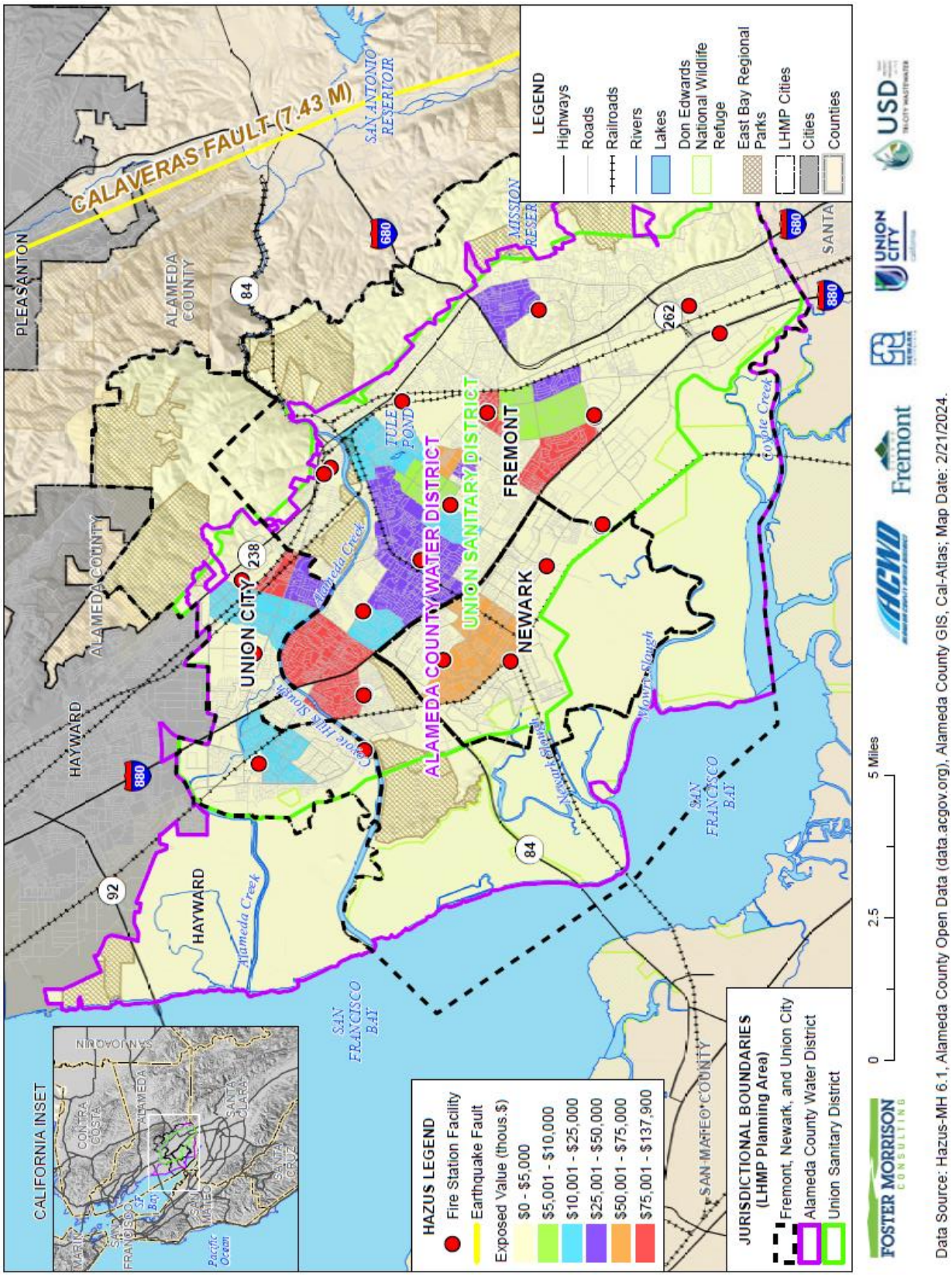
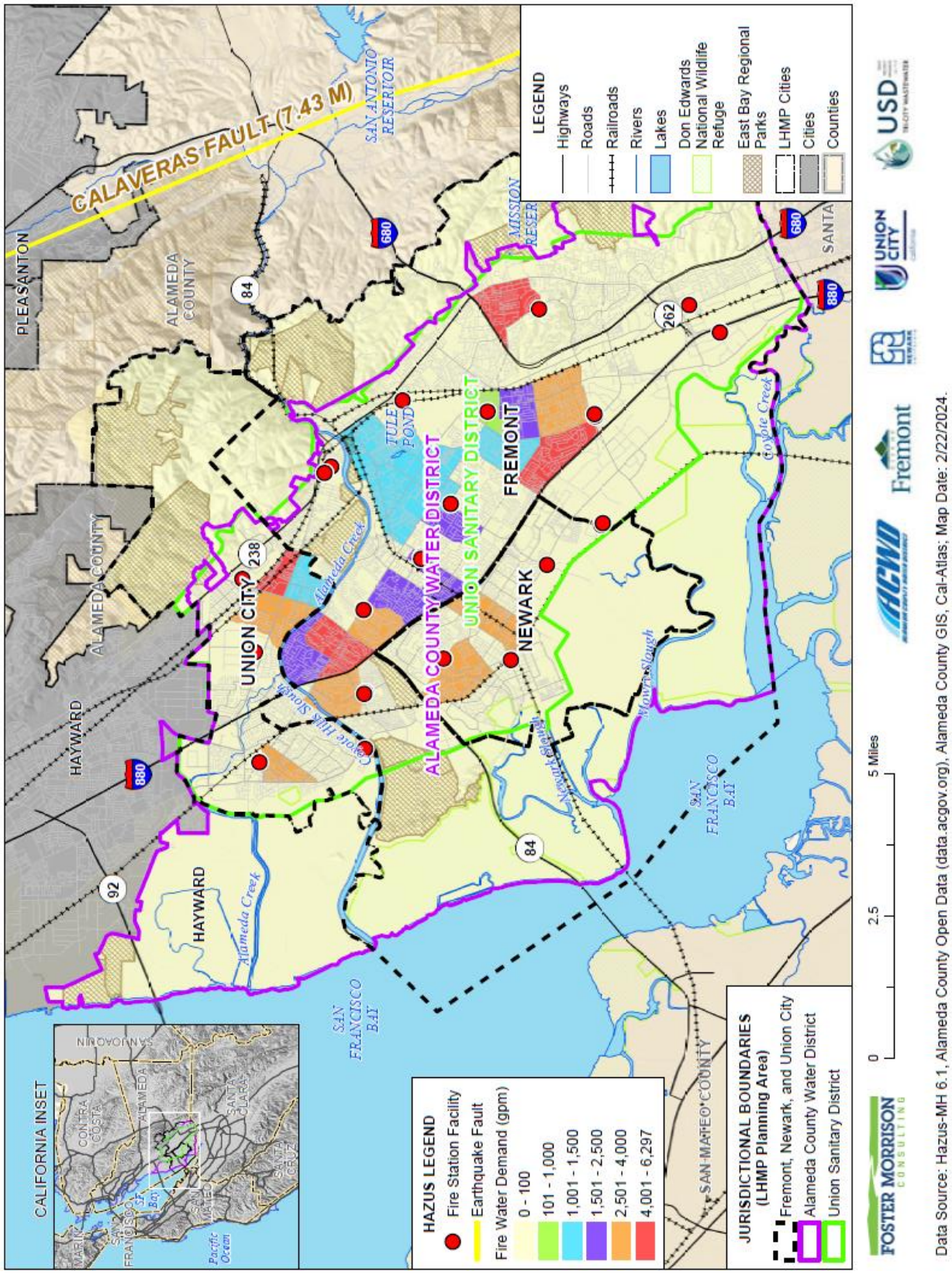


Figure 4-71 Calaveras Fault 7.43 Magnitude Fire Water Demand in GPM (50 MPH Winds)



Hayward + Rodgers Creek Fault Hazus Scenario (Epicenter: Fremont; Magnitude: 7.57)

The Hazus results for the Hayward + Rodgers Creek Fault Hazus Scenario is summarized below in Table 4-69. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained. ***Note***: The location of the Hayward Fault on the maps below was noted by the City to not be in the correct location. Foster Morrison was unable to modify the fault location on the maps below as that is the location that FEMA's Hazus program has recorded for the fault. Its actual location is correct in terms of the analysis (so the table below remains correct). FEMA was notified of this error.

Table 4-69 Tri-City Planning Area– Hayward + Rodgers Creek Fault HAZUS Earthquake Deterministic Results for 7.57 M Event

Type of Impact	Impacts to City from 7.57 Deterministic Earthquake	
Total Buildings Damaged (based on 102,000 buildings)	Slight: 39,420 Moderate: 24,508 Extensive: 10,382 Complete: 3,703	
Building and Income Related Losses	$17,055,480,000	
Total Economic Losses (Includes building, income and lifeline losses)	$18,535,370,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 1,344 Requiring hospitalization: 264 Life threatening: 22 Fatalities: 38	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 3,083 Requiring hospitalization: 822 Life threatening: 131 Fatalities: 241	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 2,315 Requiring hospitalization: 657 Life threatening: 199 Fatalities: 185	
Damage to Transportation Systems	27 highway bridges, 8 railway bridges, 2 railway facilities, and 1 airport facility with at least moderate damage. 2 highway bridges with complete damage.	
Damage to Essential Facilities	59 schools, 1 EOC, 5 police stations, and 2 fire stations with at least moderate damage. 4 school facilities with complete damage.	
Damage to Utility Systems	1 wastewater facility, 1 electrical power facility, and 1 communication facility with at least moderate damage. None with complete damage. 2,251 potable water line breaks, 1,131 wastewater line breaks, and 17 natural gas line breaks.	
Households without Power/Water Service (Based on 113,685 total households)	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 113,428 Water loss, Day 3: 113,406 Water loss, Day 7: 113,356 Water loss, Day 30: 112,715 Water loss, Day 90: 0
Displaced Households	11,362 displaced households	

Type of Impact	Impacts to City from 7.57 Deterministic Earthquake
Shelter Requirements	5,637 persons
Debris Generation	2,390,000 tons

Hazus 6.1

Loss Estimates Highlights

Hazus estimates that about 38,593 buildings will be at least moderately damaged. This is over 38.00 % of the buildings in the region. There are an estimated 3,702 buildings that will be damaged beyond repair.

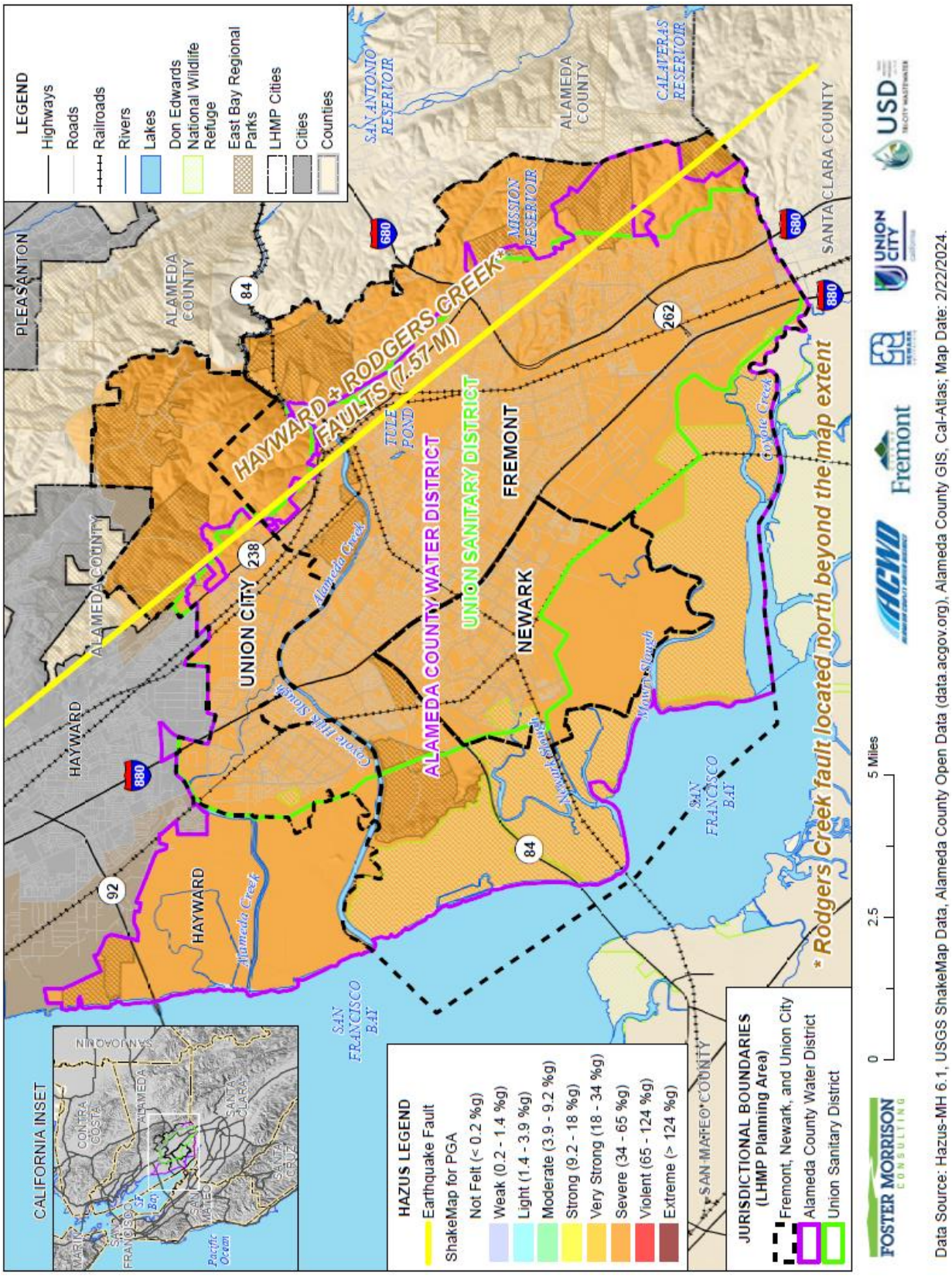
Before the earthquake, the region had 556 hospital beds available for use. On the day of the earthquake, the model estimates that only 173 hospital beds (31.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 60.00% of the beds will be back in service. By 30 days, 88.00% will be operational.

The total building-related losses were 17,055.48 (millions of dollars); 12 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 44 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure 4-72.

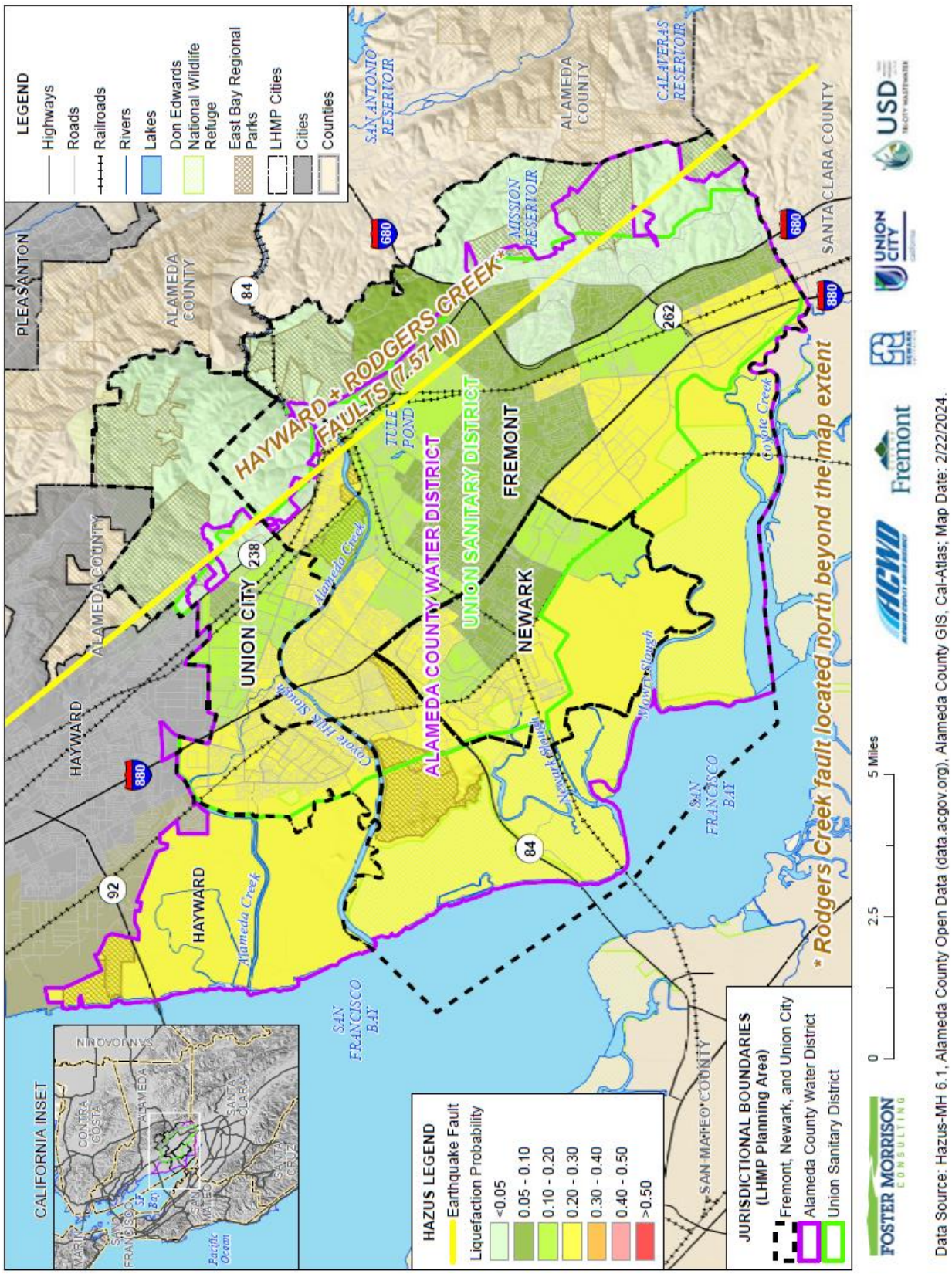
Figure 4-72 Hayward + Rodgers Creek Fault - 7.57 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure 4-73.

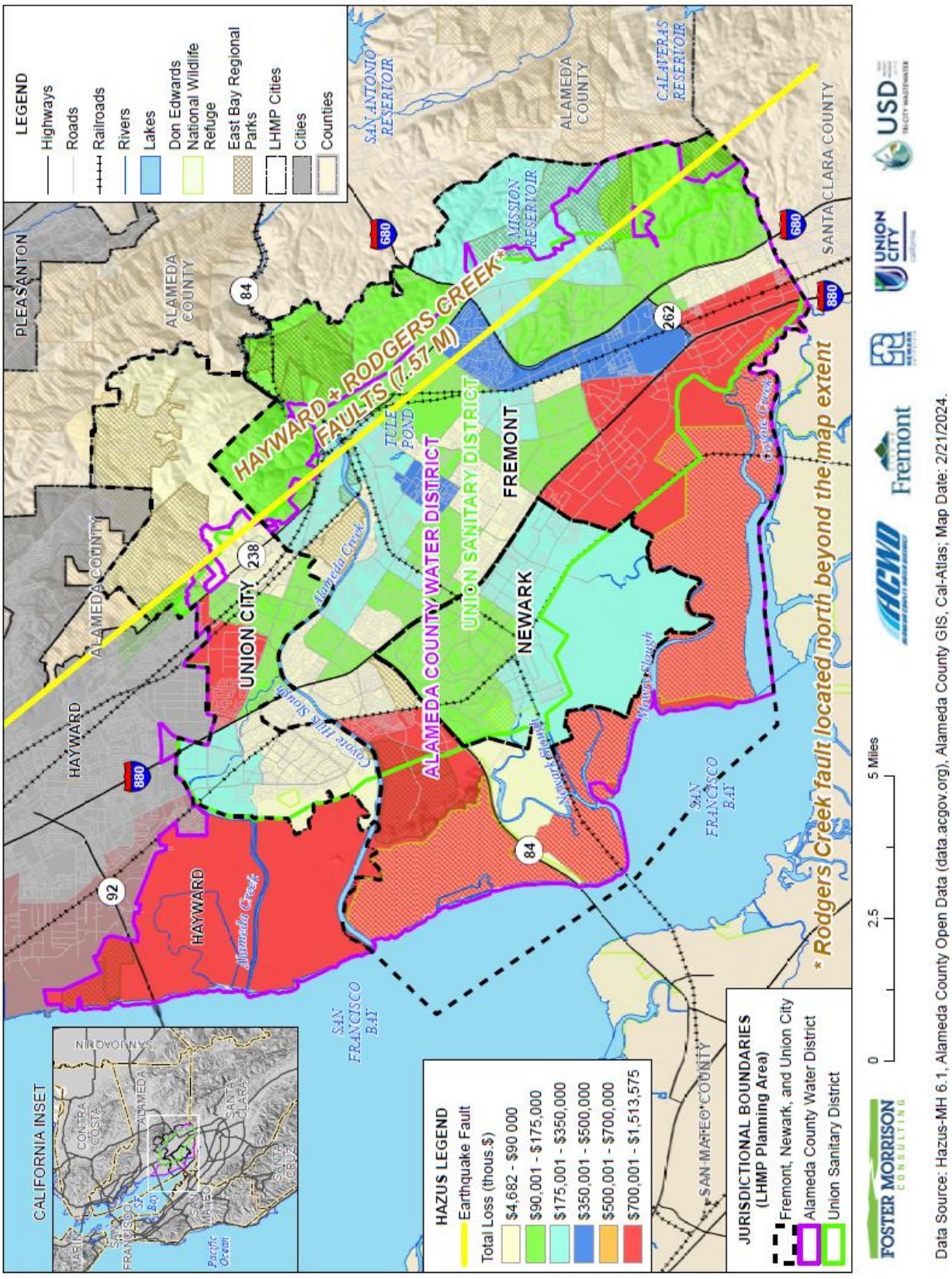
Figure 4-73 Hayward + Rodgers Creek Fault 7.57 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure 4-74.

Figure 4-74 Hayward + Rodgers Creek Fault 7.57 Magnitude Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Haywood + Rodgers Creek Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-75.
  - ✓ Population Exposure is shown on Figure 4-76.
  - ✓ Value Exposure is shown on Figure 4-77.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-78.
- Four maps were created for the 50-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-79.
  - ✓ Population Exposure is shown on Figure 4-80.
  - ✓ Value Exposure is shown on Figure 4-81.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-82.

Figure 4-75 Hayward + Rodgers Creek Fault 7.57 Magnitude Number of Ignitions (10 MPH Winds)

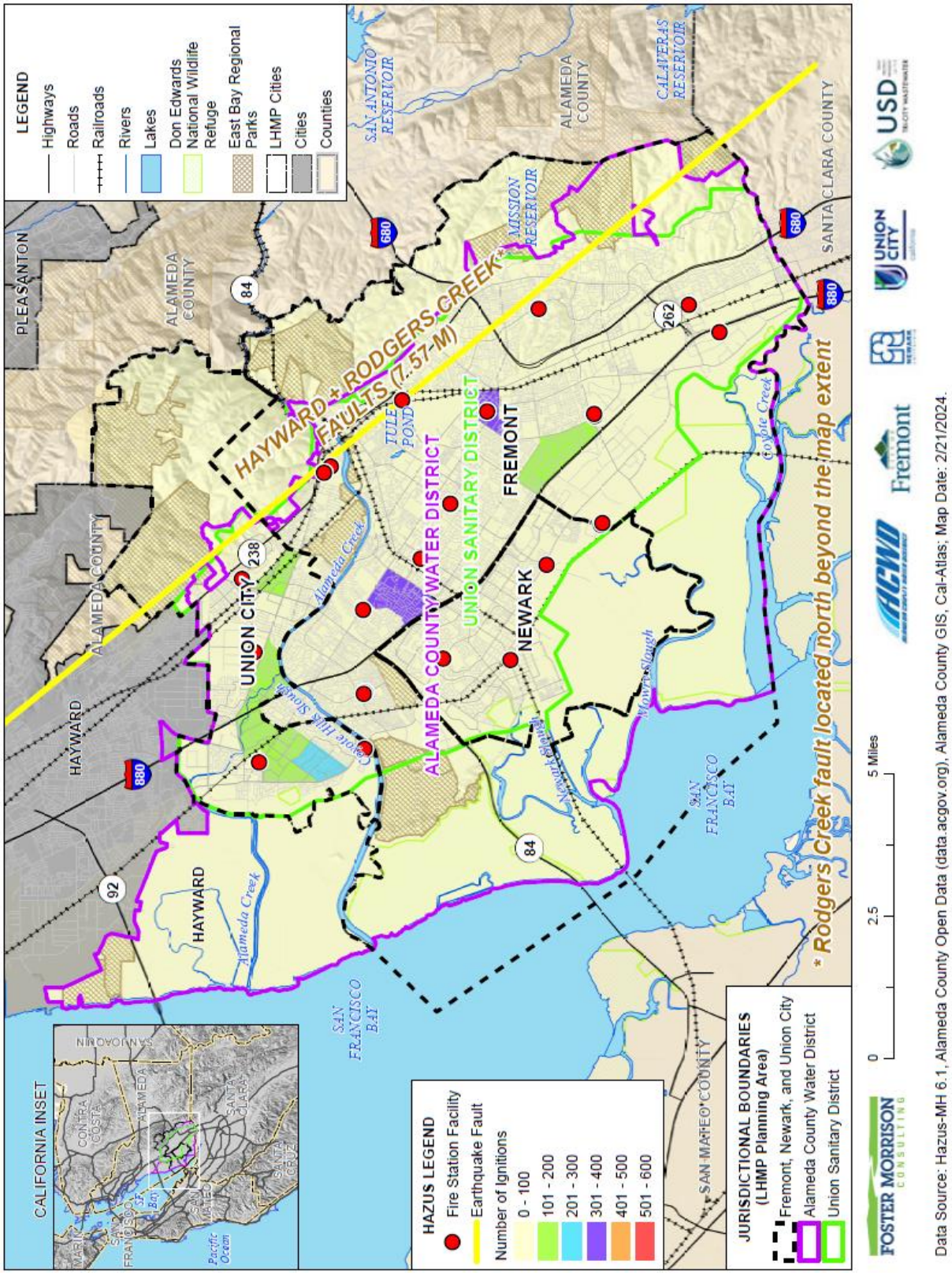


Figure 4-76 Hayward + Rodgers Creek Fault 7.57 Magnitude Population Exposure (10 MPH Winds)

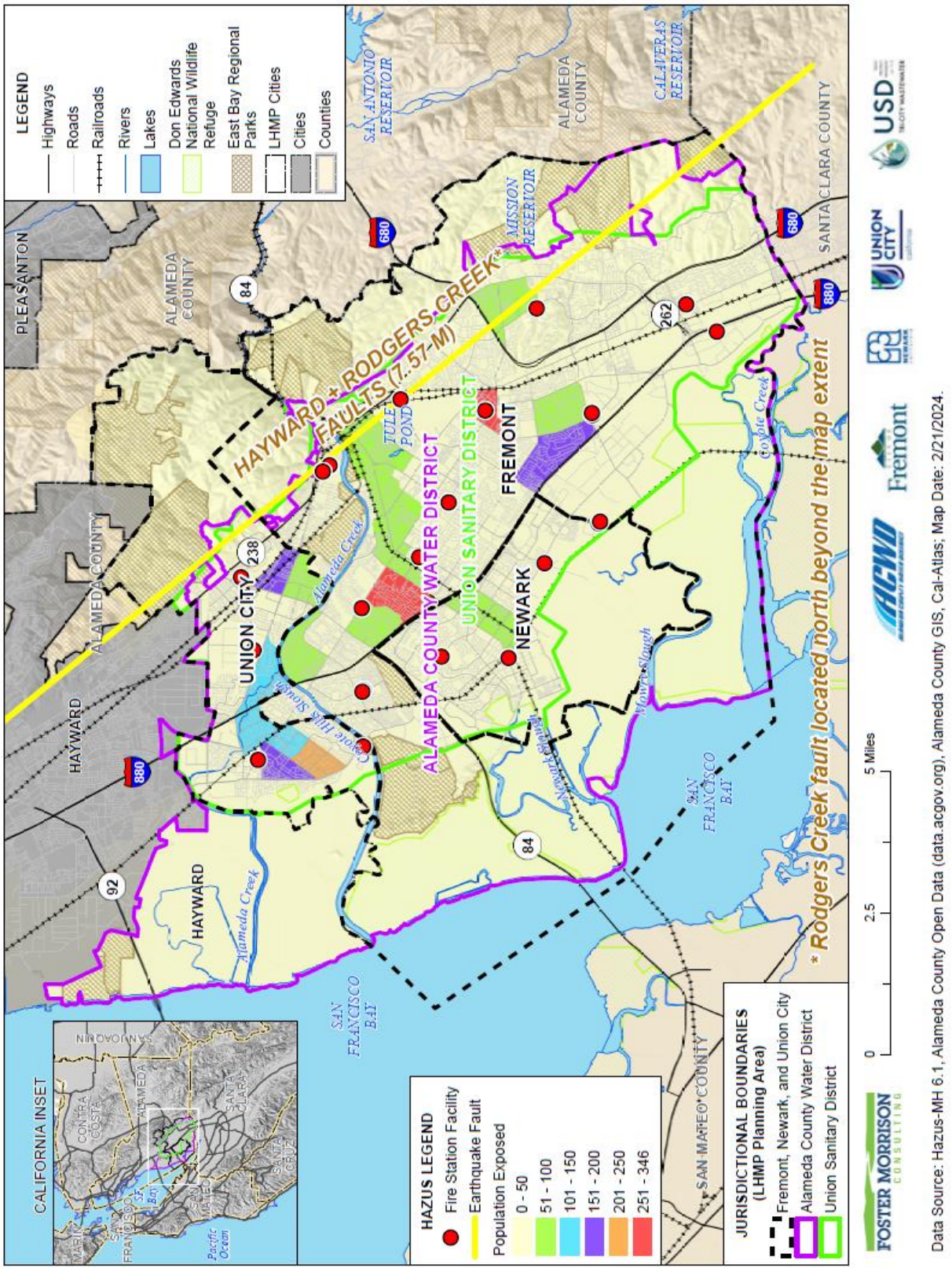


Figure 4-77 Hayward + Rodgers Creek Fault 7.57 Magnitude Exposed Values (10 MPH Winds)

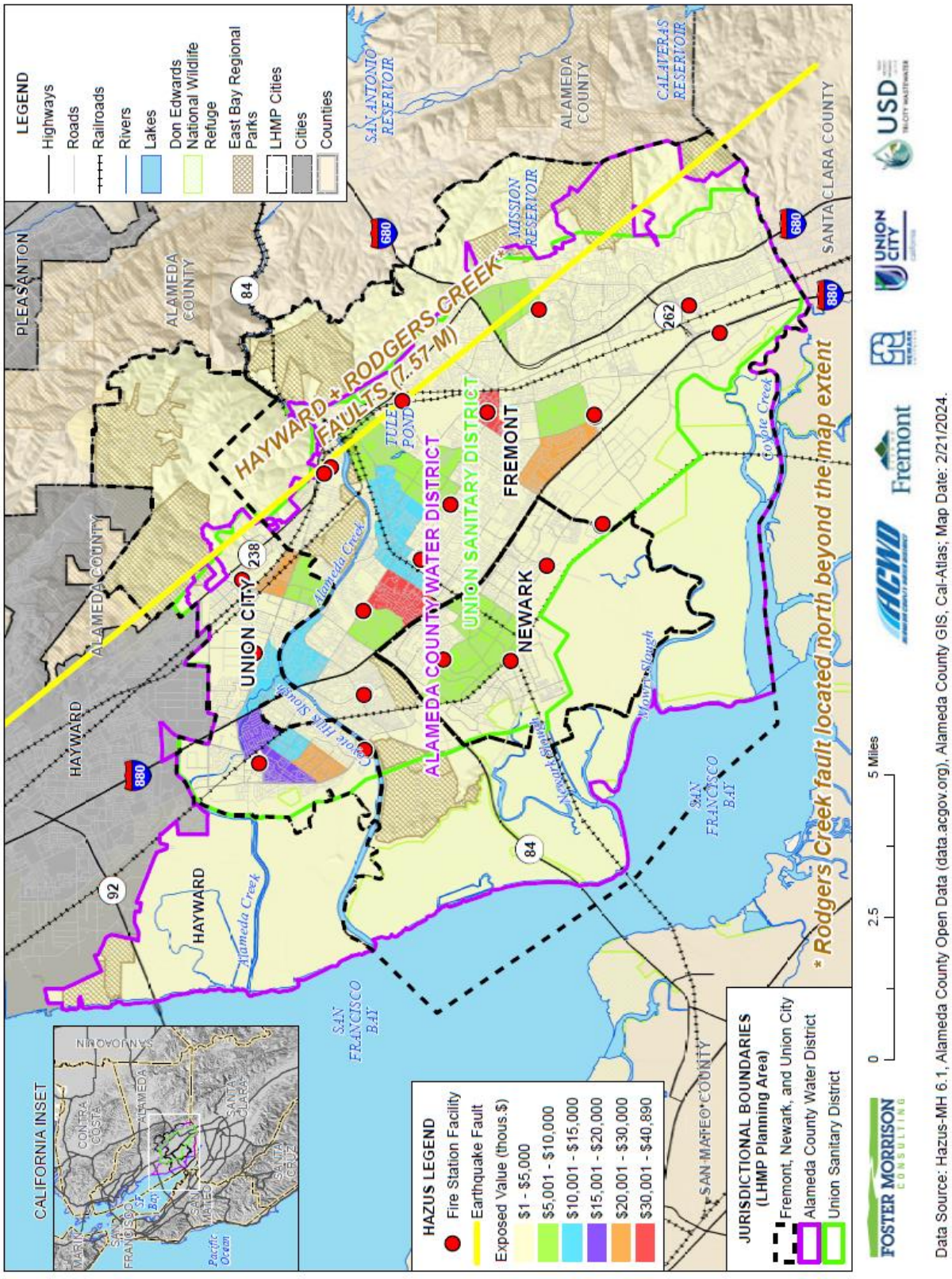


Figure 4-78 Hayward + Rodgers Creek Fault 7.57 Magnitude Fire Water Demand in GPM (10 MPH Winds)

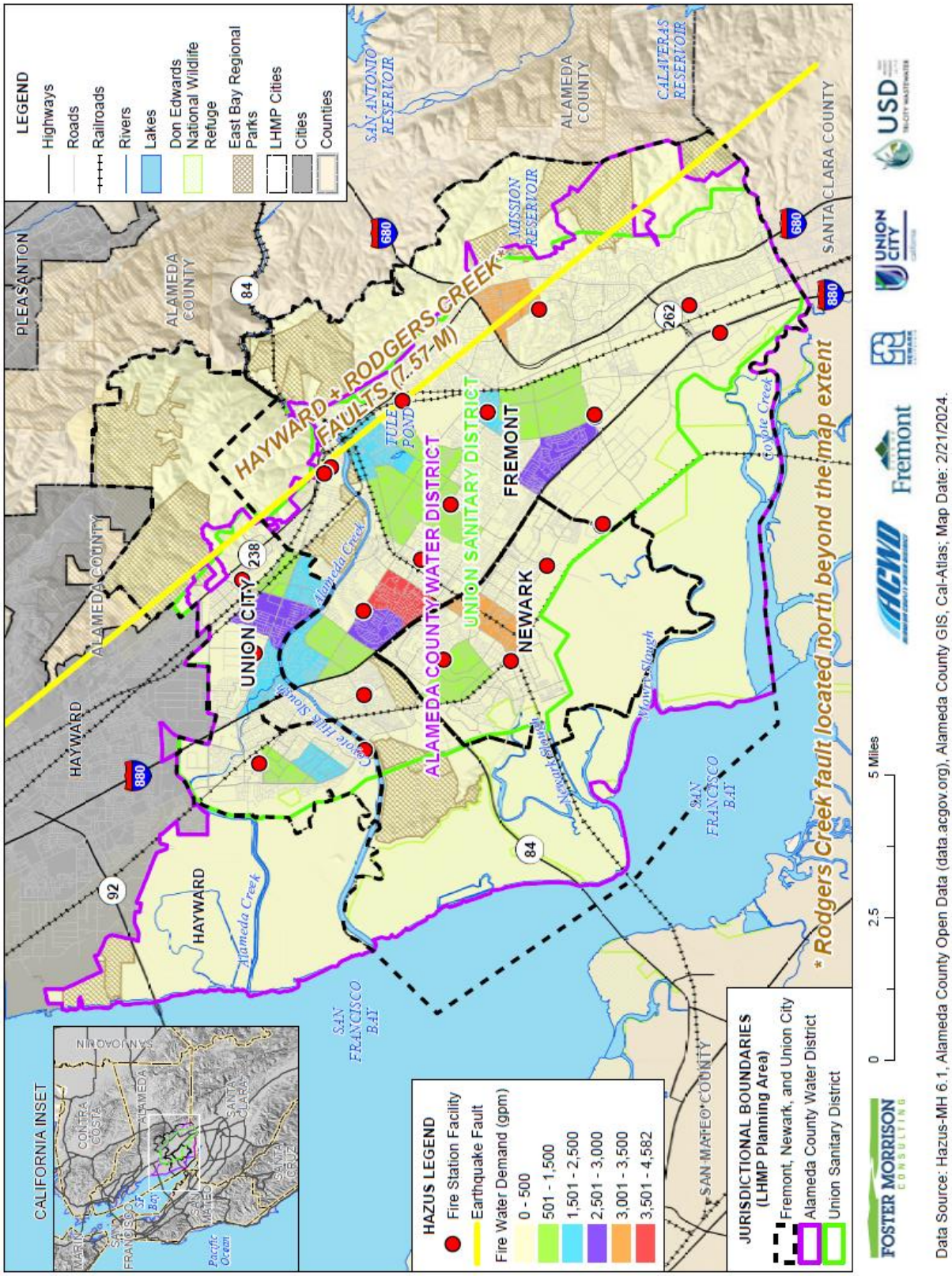


Figure 4-79 Hayward + Rodgers Creek Fault 7.57 Magnitude Number of Ignitions (50 MPH Winds)

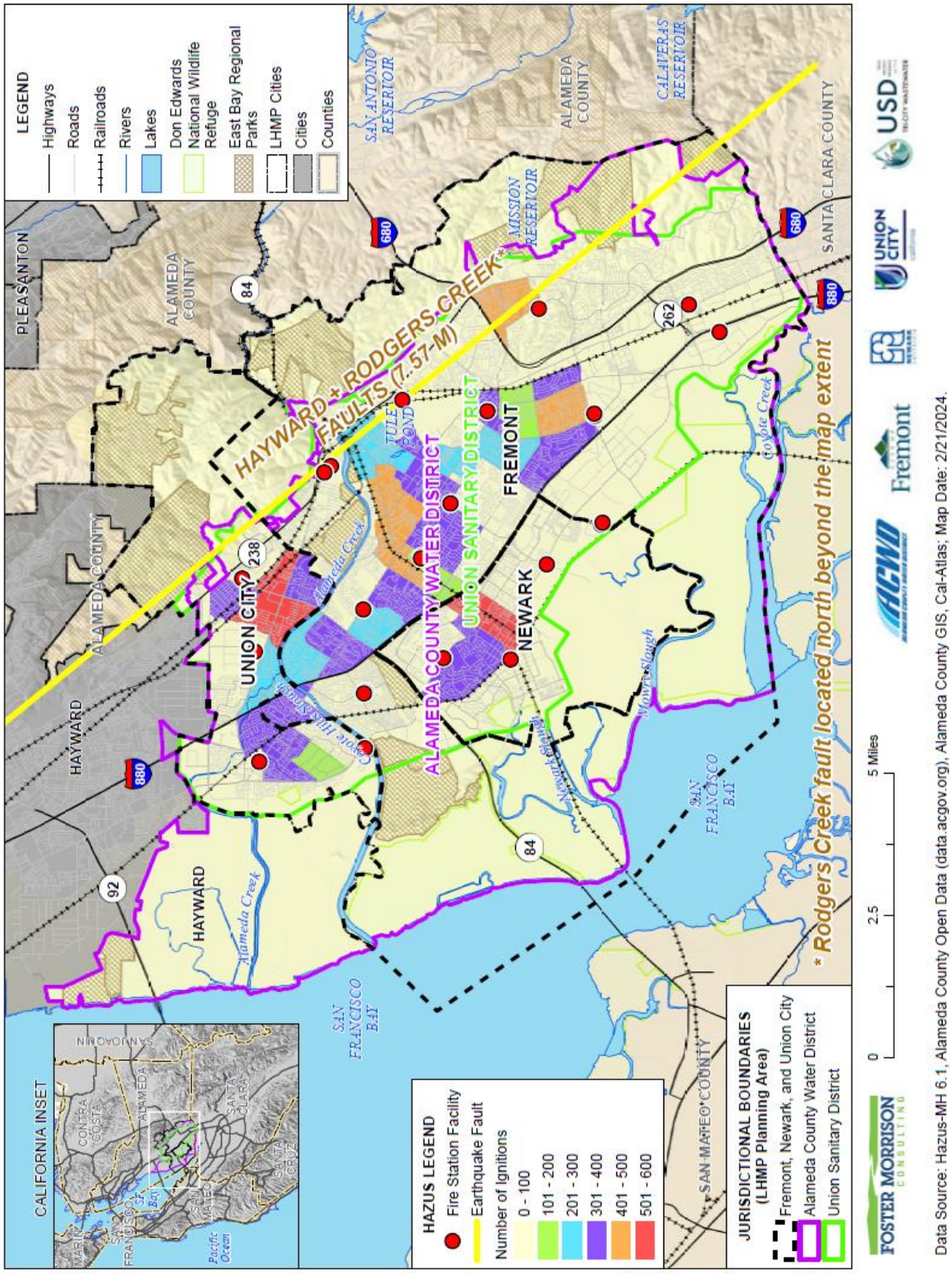


Figure 4-80 Hayward + Rodgers Creek Fault 7.57 Magnitude Population Exposure (50 MPH Winds)

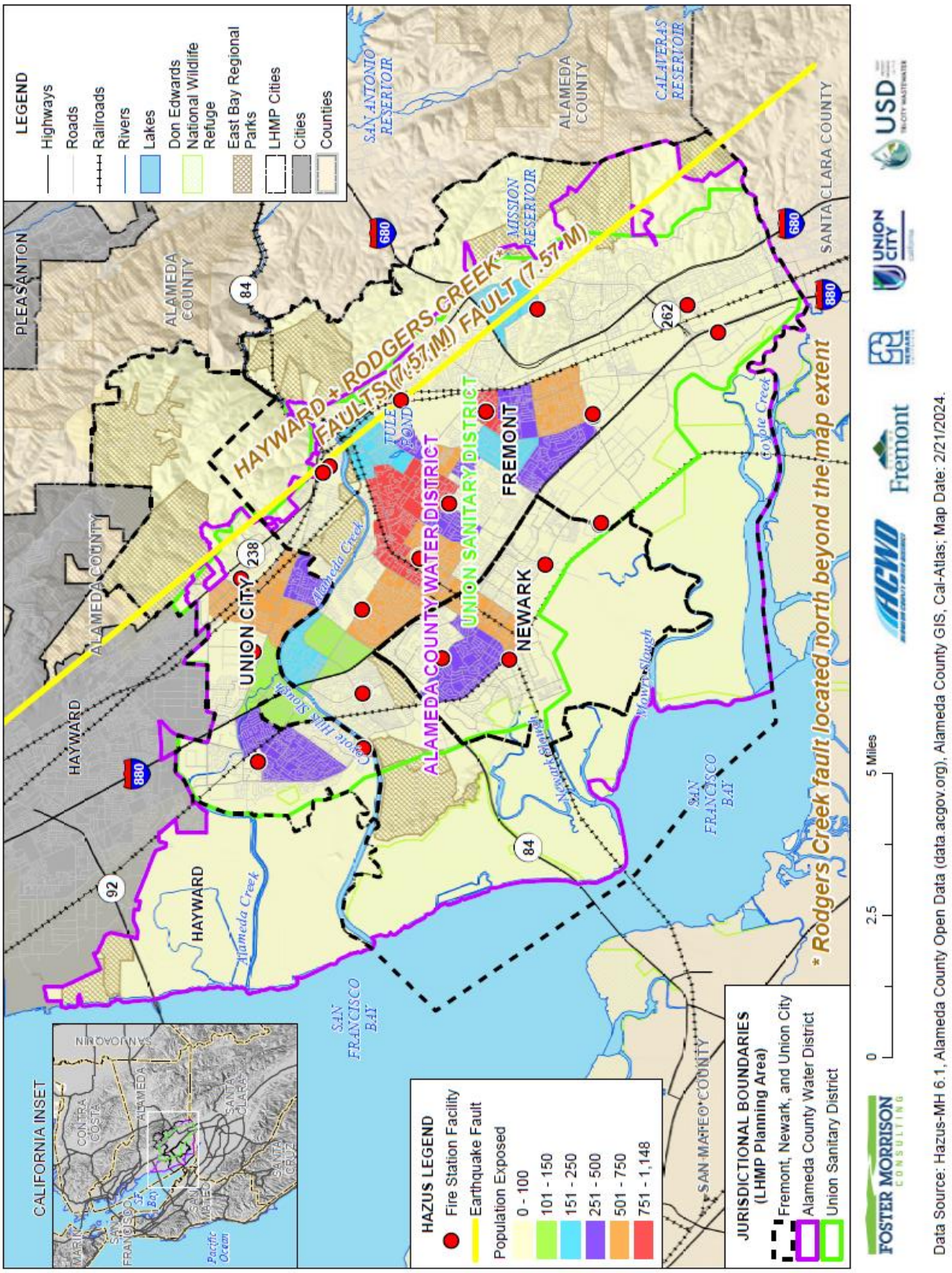


Figure 4-81 Hayward + Rodgers Creek Fault 7.57 Magnitude Exposed Values (50 MPH Winds)

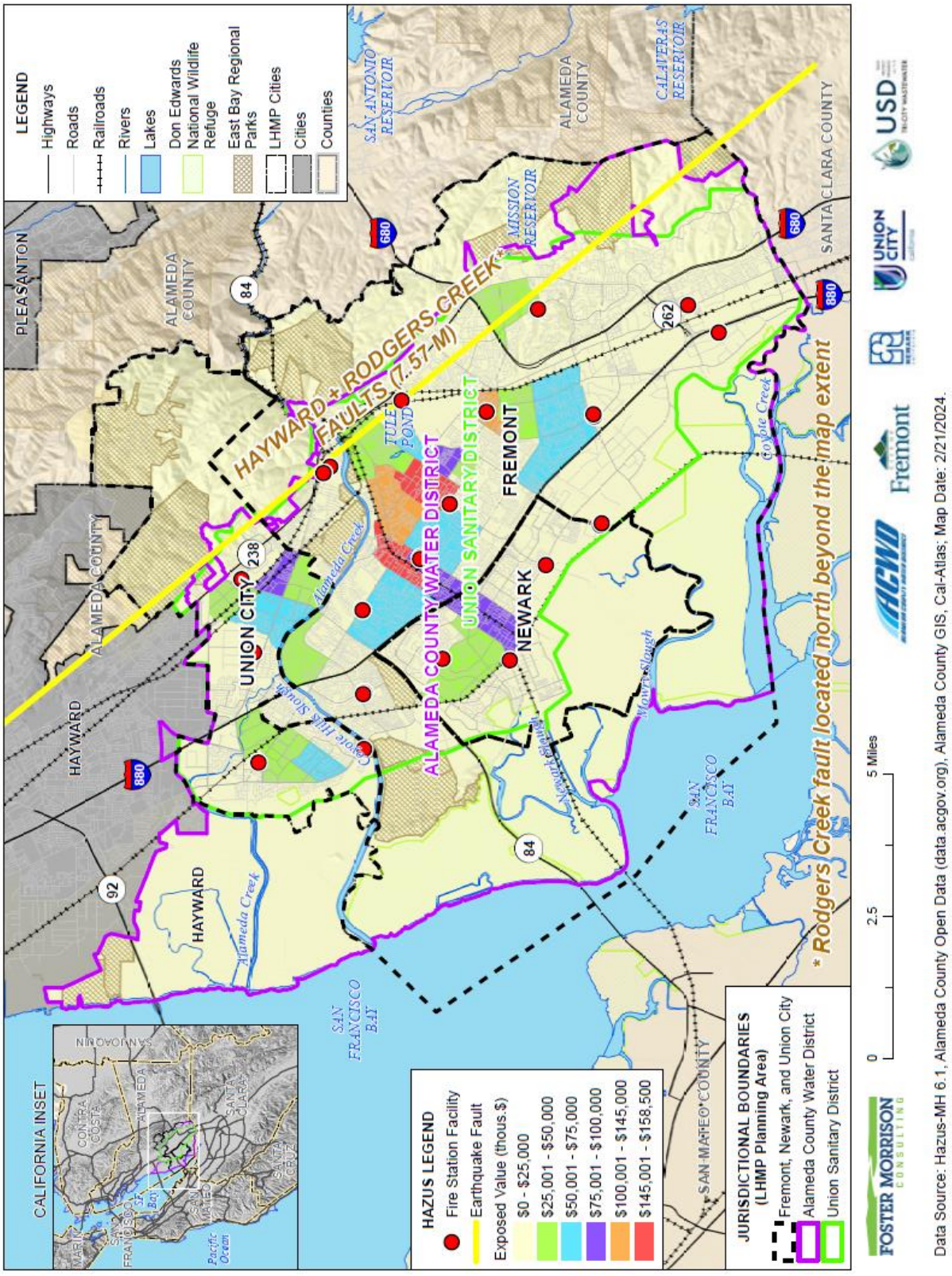
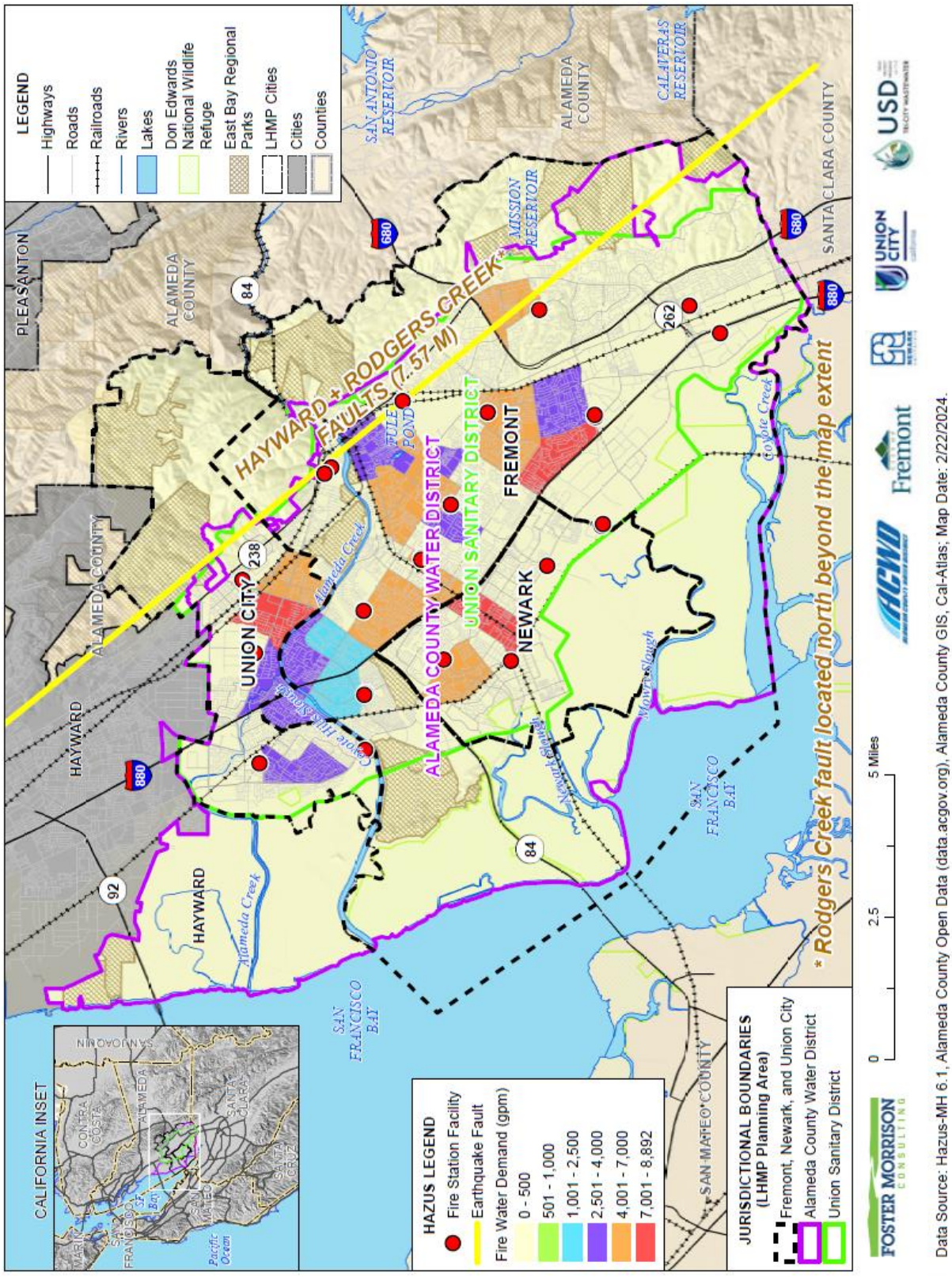


Figure 4-82 Hayward + Rodgers Creek Fault 7.57 Magnitude Fire Water Demand in GPM (50 MPH Winds)



Haywired Scenario (Hayward Fault) HAZUS-MH Earthquake Loss Estimation Deterministic Results for 7.0 M Event

The Hazus results for the Haywired (Hayward Fault) Hazus Scenario is summarized below in Table 4-70. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained. ***Note***: The location of the Hayward Fault on the maps below was noted by the City to not be in the correct locations. Foster Morrison was unable to modify the fault location on the maps below as that is the location that FEMA's Hazus program has recorded for the fault. Its actual location is correct in terms of the analysis (so the table below remains correct). FEMA was notified of this error.

Table 4-70 Tri-City Planning Area– Haywired (Hayward Fault) HAZUS Earthquake Deterministic Results for 7.0 M Event

Type of Impact	Impacts to City from 7.0 Deterministic Earthquake	
Total Buildings Damaged (based on 102,000 buildings)	Slight: 24,315 Moderate: 5,421 Extensive: 1,472 Complete: 327	
Building and Income Related Losses	$3,287,230,000	
Total Economic Losses (Includes building, income and lifeline losses)	$4,058,120,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 191 Requiring hospitalization: 27 Life threatening: 2 Fatalities: 3	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 296 Requiring hospitalization: 55 Life threatening: 9 Fatalities: 12	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 250 Requiring hospitalization: 55 Life threatening: 9 Fatalities: 12	
Damage to Transportation Systems	1 airport facility with at least moderate damage	
Damage to Essential Facilities	3 schools with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	1 electrical power facility and 2 communications facilities with at least moderate damage. 563 potable water line breaks, 268 wastewater line breaks, and 4 natural gas line breaks.	
Households without Power/Water Service (Based on 113,685 total households)	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 98,615 Water loss, Day 3: 95,442 Water loss, Day 7: 86,276 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	993 displaced households	
Shelter Requirements	499 persons	

Type of Impact	Impacts to City from 7.0 Deterministic Earthquake
Debris Generation	367,000 tons

Hazus 6.1

Loss Estimates Highlights

Hazus estimates that about 7,219 buildings will be at least moderately damaged. This is over 7.00 % of the buildings in the region. There are an estimated 326 buildings that will be damaged beyond repair.

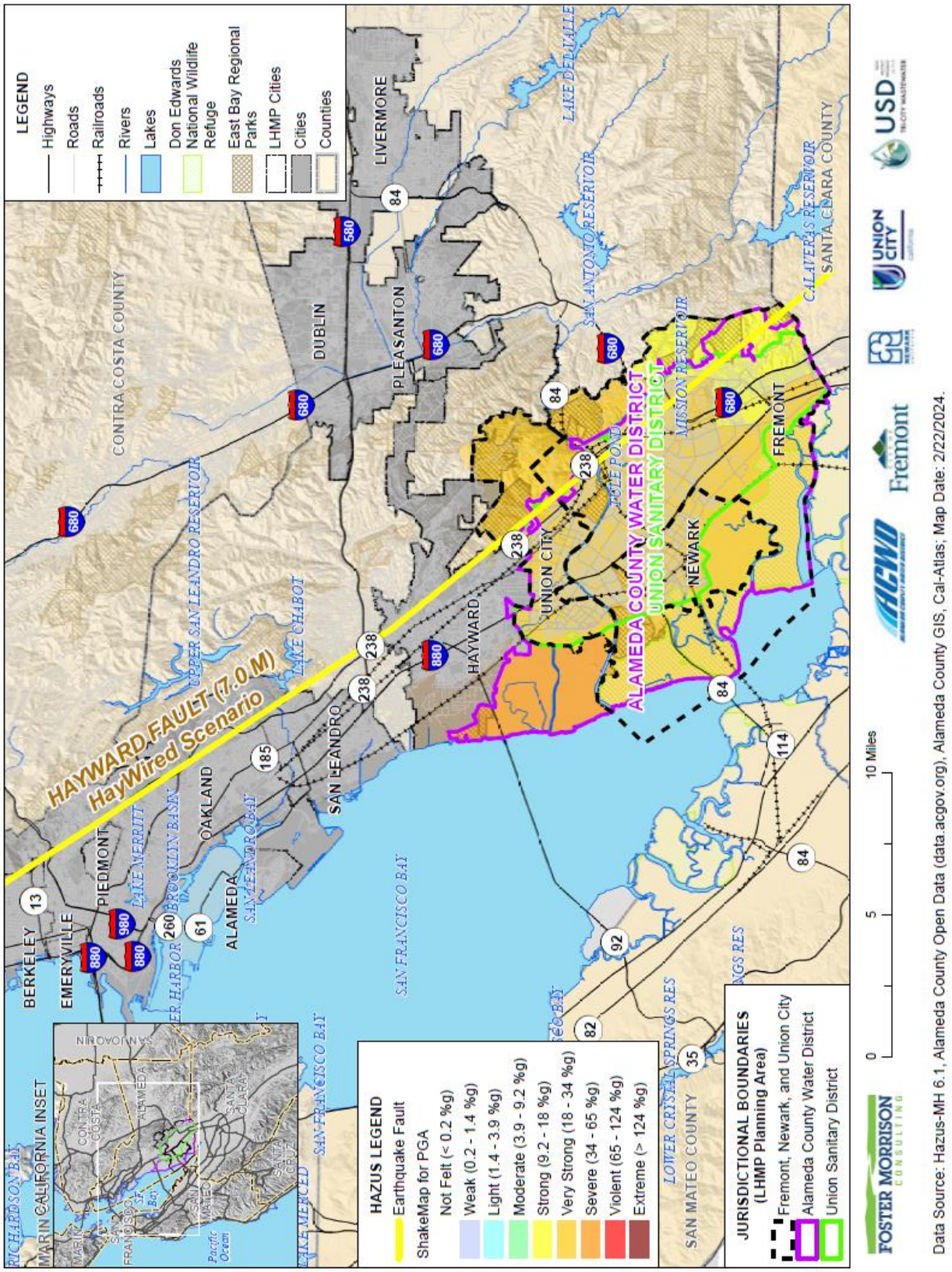
Before the earthquake, the region had 556 hospital beds available for use. On the day of the earthquake, the model estimates that only 443 hospital beds (80.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 93.00% of the beds will be back in service. By 30 days, 98.00% will be operational.

The total building-related losses were 3,287.23 (millions of dollars); 10 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 42 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure 4-83.

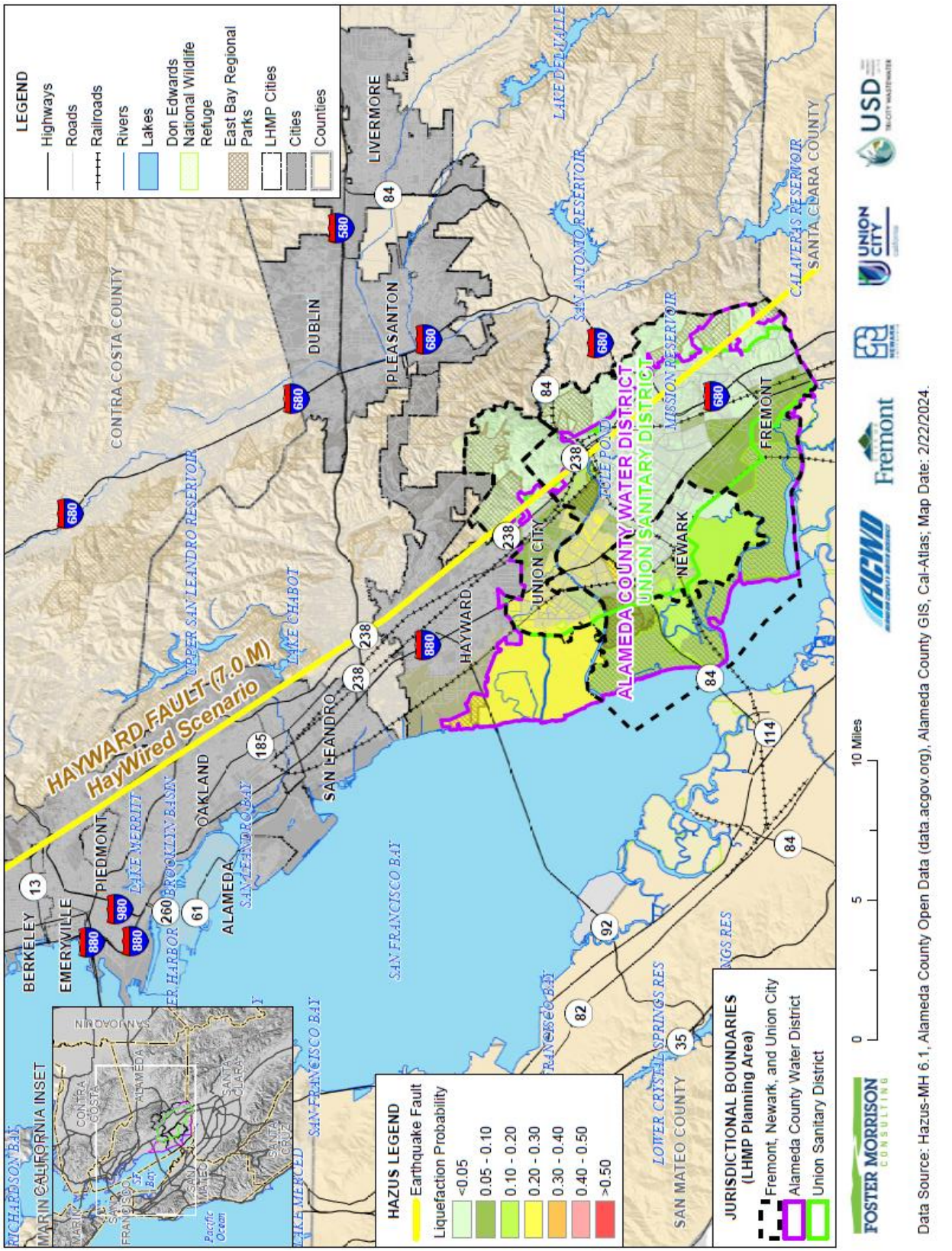
Figure 4-83 Haywired (Hayward Fault) Scenario 7.0 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure 4-84.

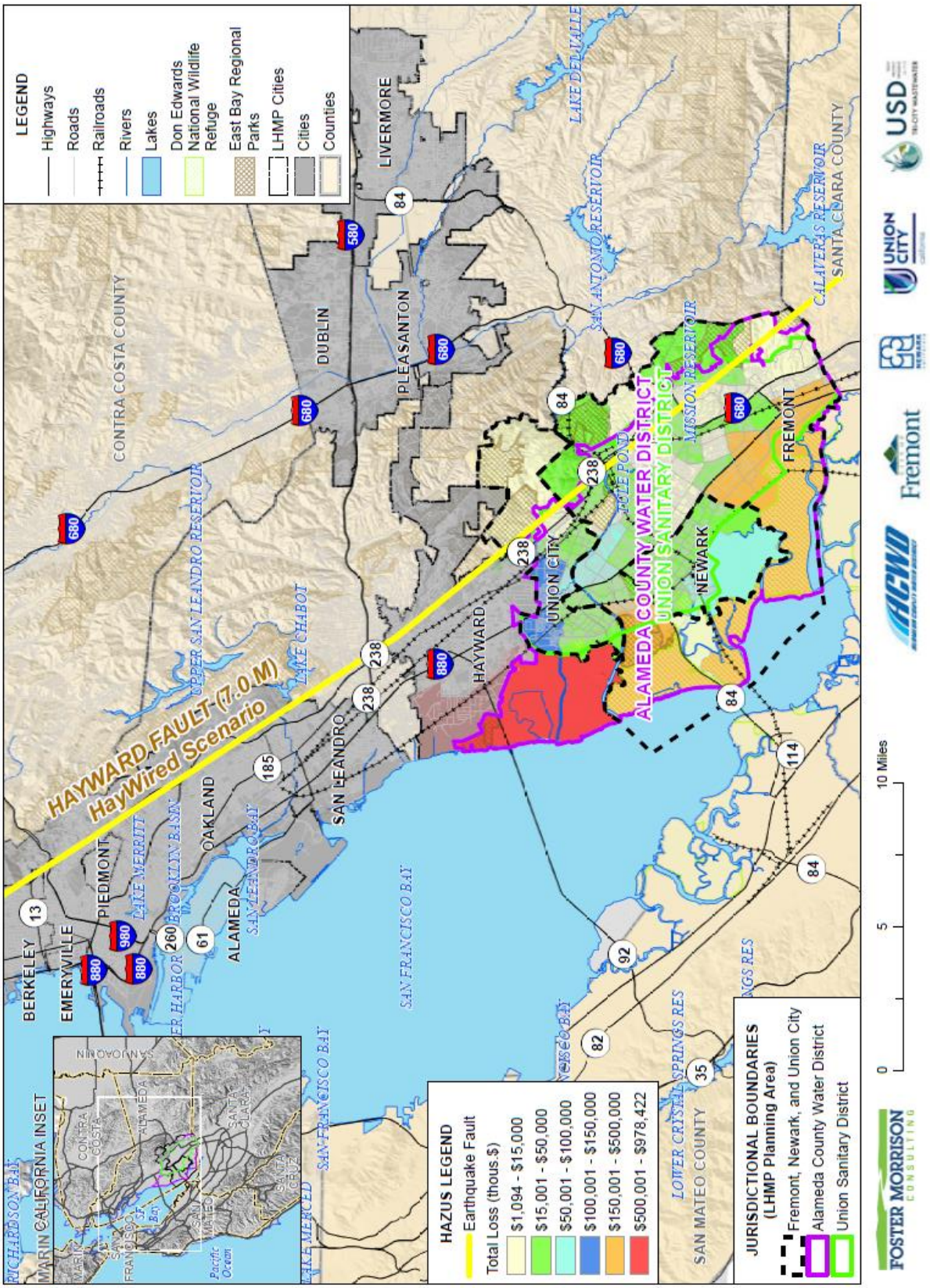
Figure 4-84 Haywired (Hayward Fault) Scenario 7.0 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure 4-85.

Figure 4-85 Haywired (Hayward Fault) Scenario 7.0 Magnitude Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Haywired (Hayward Fault) Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-86.
  - ✓ Population Exposure is shown on Figure 4-87.
  - ✓ Value Exposure is shown on Figure 4-88.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-89.
- Four maps were created for the 50-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-90.
  - ✓ Population Exposure is shown on Figure 4-91.
  - ✓ Value Exposure is shown on Figure 4-92.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-93.

Figure 4-86 Haywired (Hayward Fault) Scenario 7.0 Magnitude Number of Ignitions (10 MPH Winds)

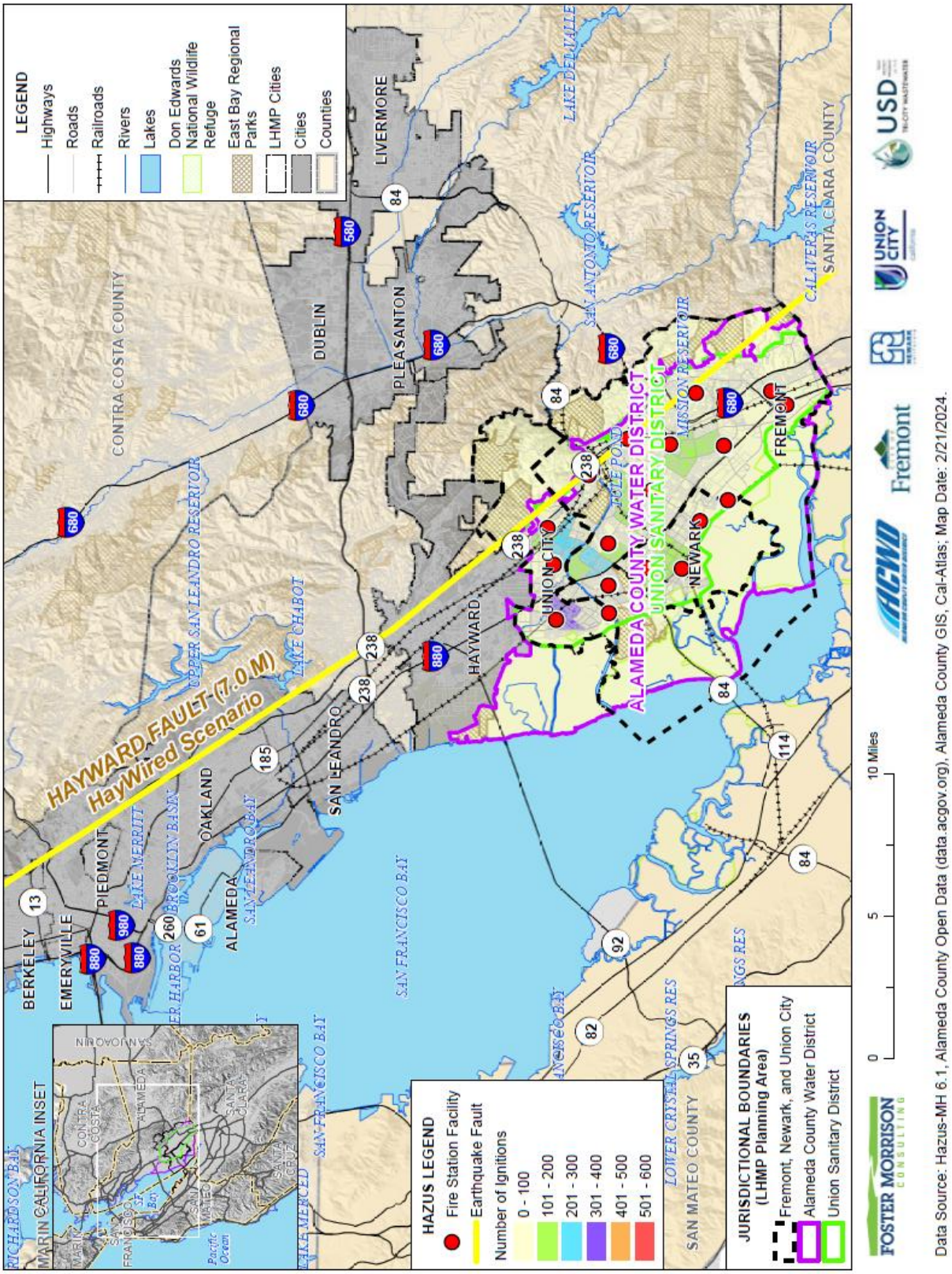


Figure 4-87 Haywired (Hayward Fault) Scenario 7.0 Magnitude Population Exposure (10 MPH Winds)

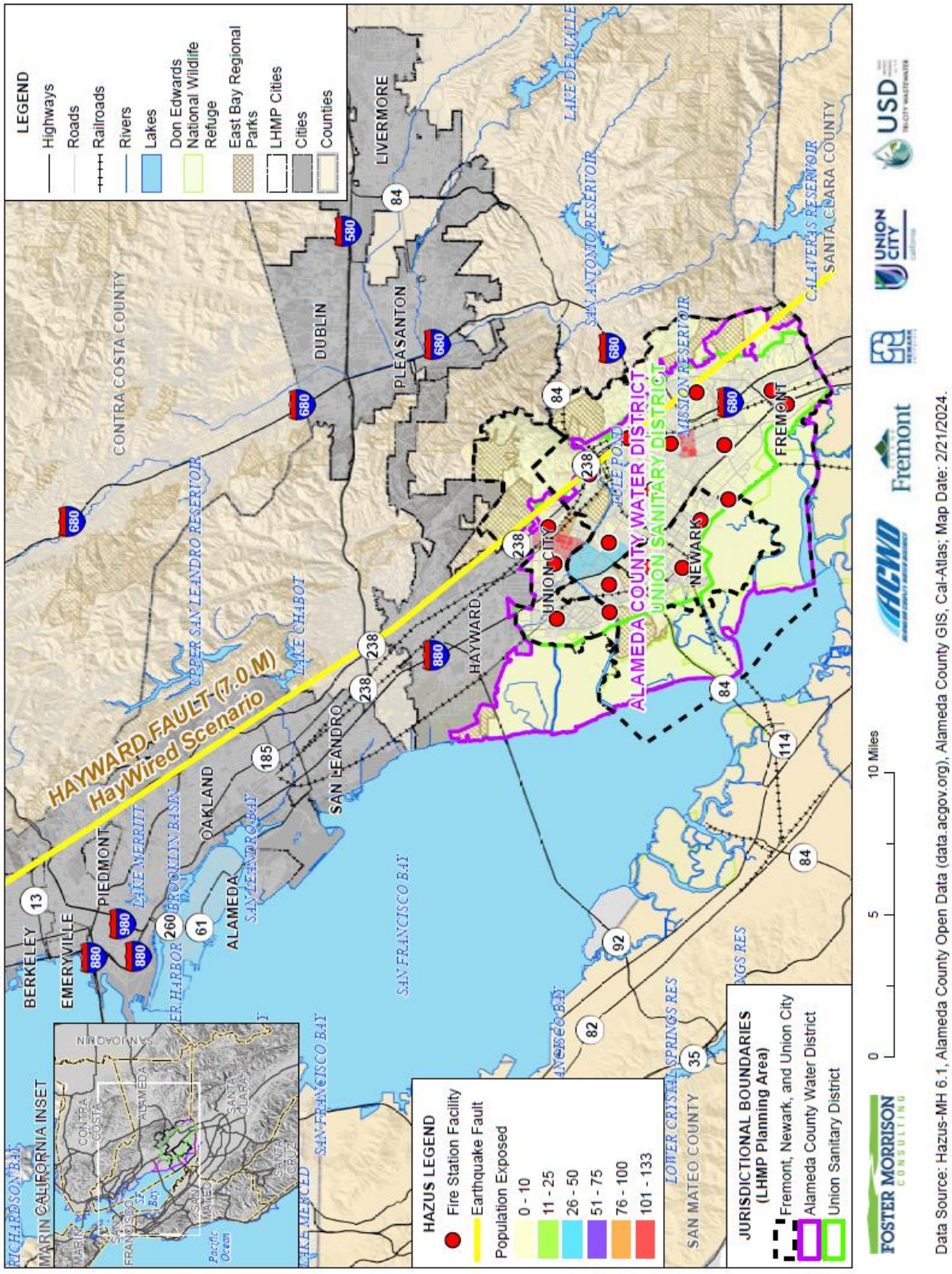


Figure 4-88 Haywired (Hayward Fault) Scenario 7.0 Magnitude Exposed Values (10 MPH Winds)

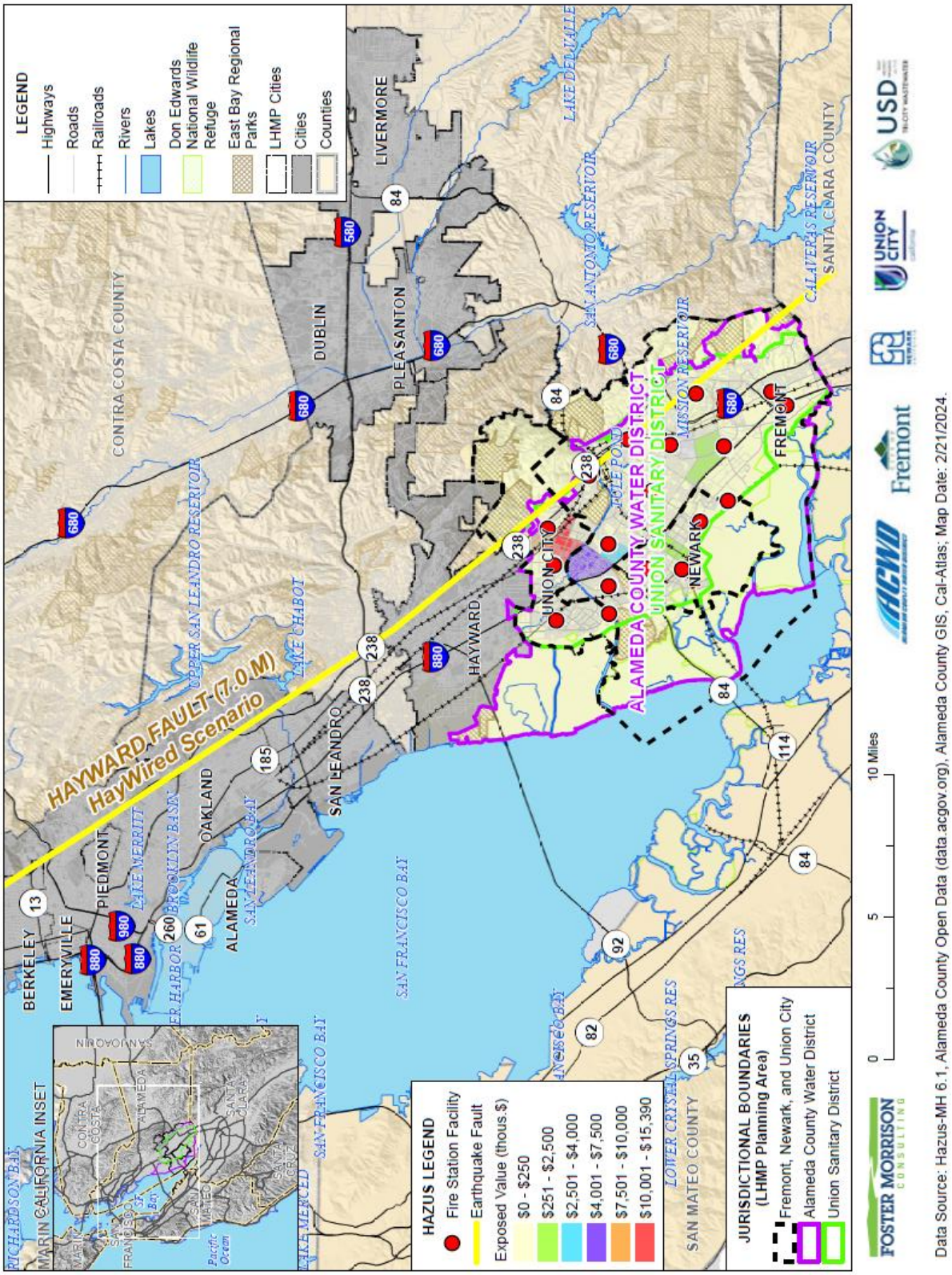


Figure 4-89 Haywired (Hayward Fault) Scenario 7.0 Magnitude Fire Water Demand in GPM (10 MPH Winds)

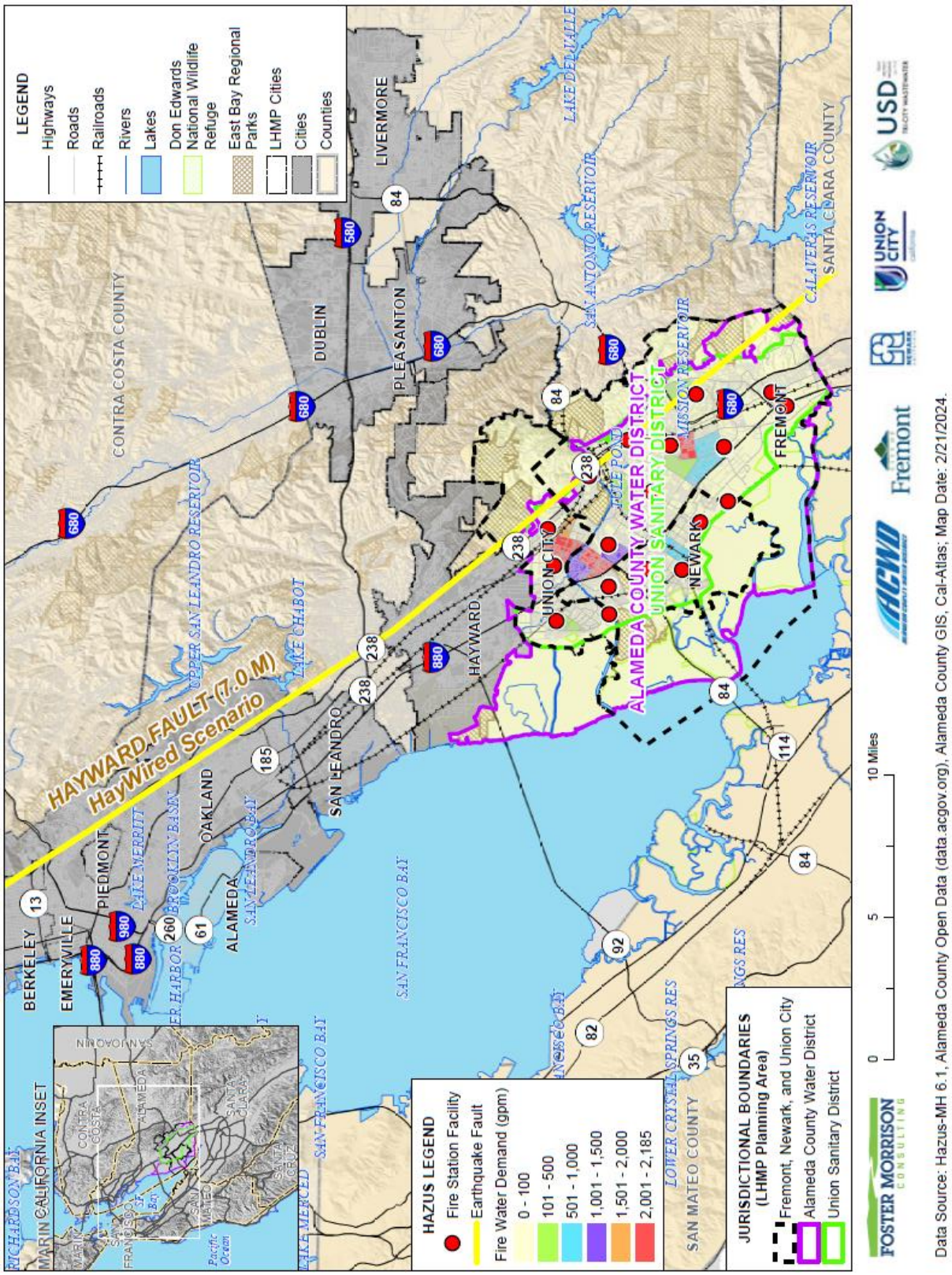


Figure 4-90 Haywired (Hayward Fault) Scenario 7.0 Magnitude Number of Ignitions (50 MPH Winds)

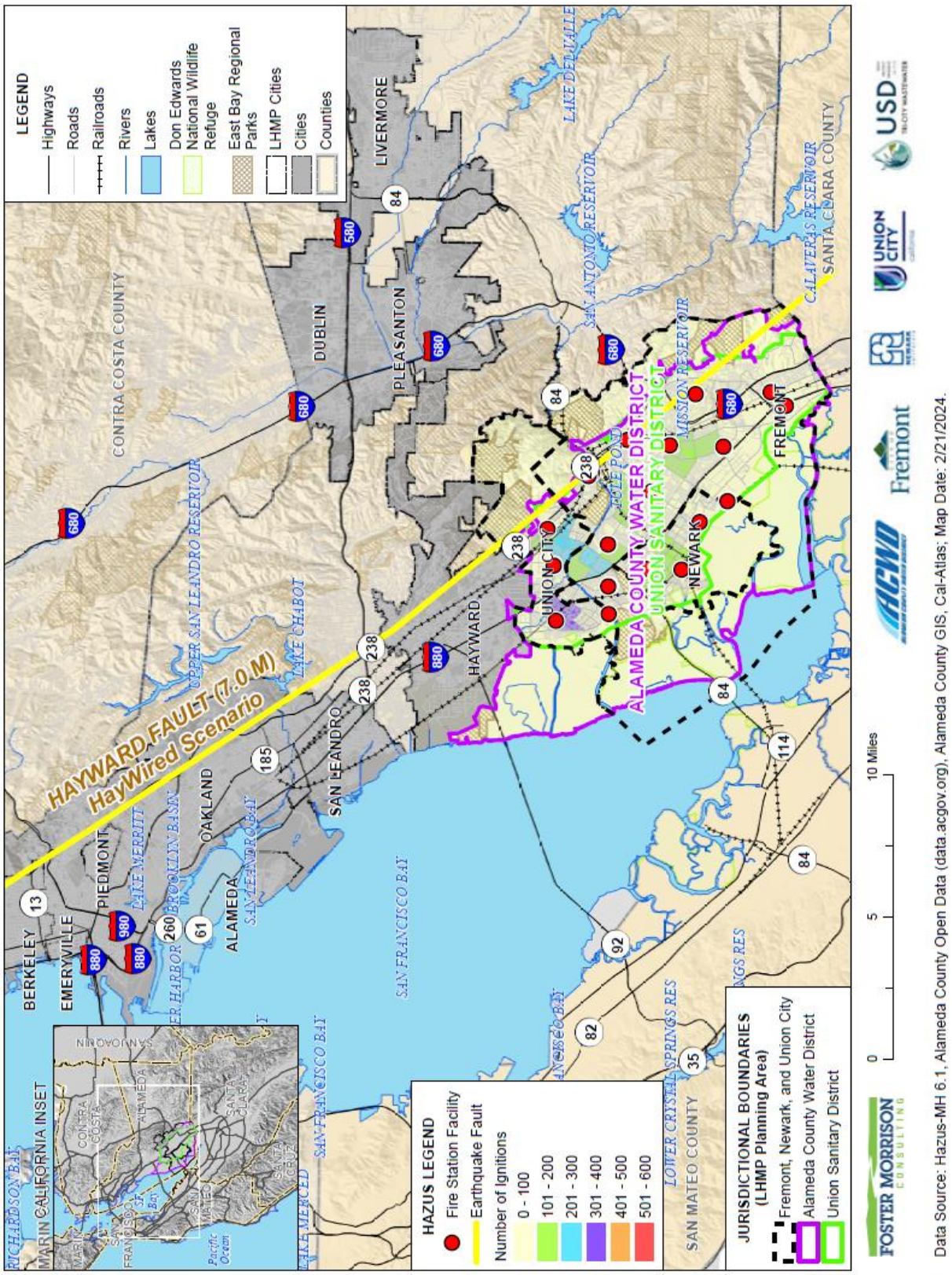


Figure 4-91 Haywired (Hayward Fault) Scenario 7.0 Magnitude Population Exposure (50 MPH Winds)

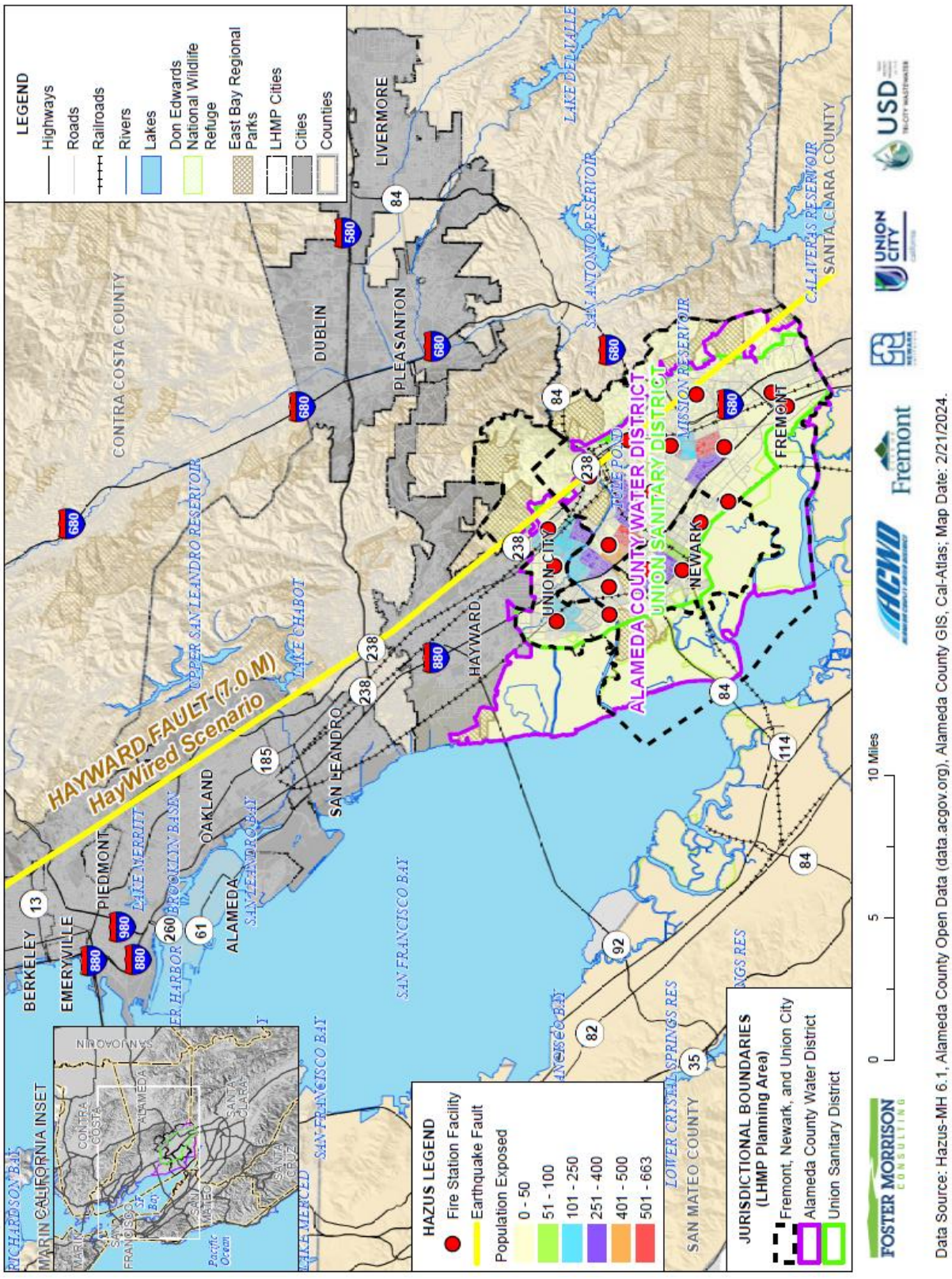


Figure 4-92 Haywired (Hayward Fault) Scenario 7.0 Magnitude Exposed Values (50 MPH Winds)

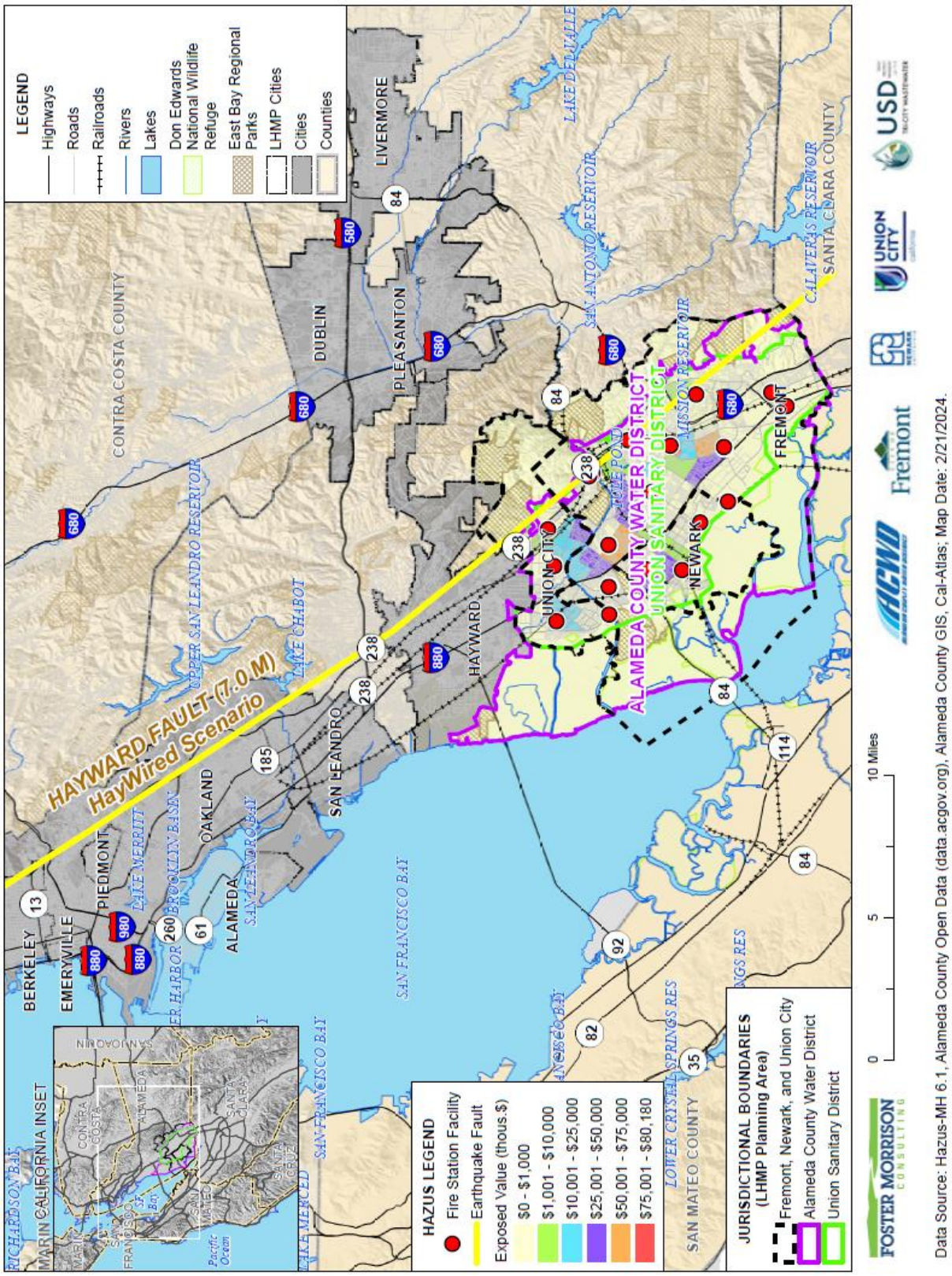
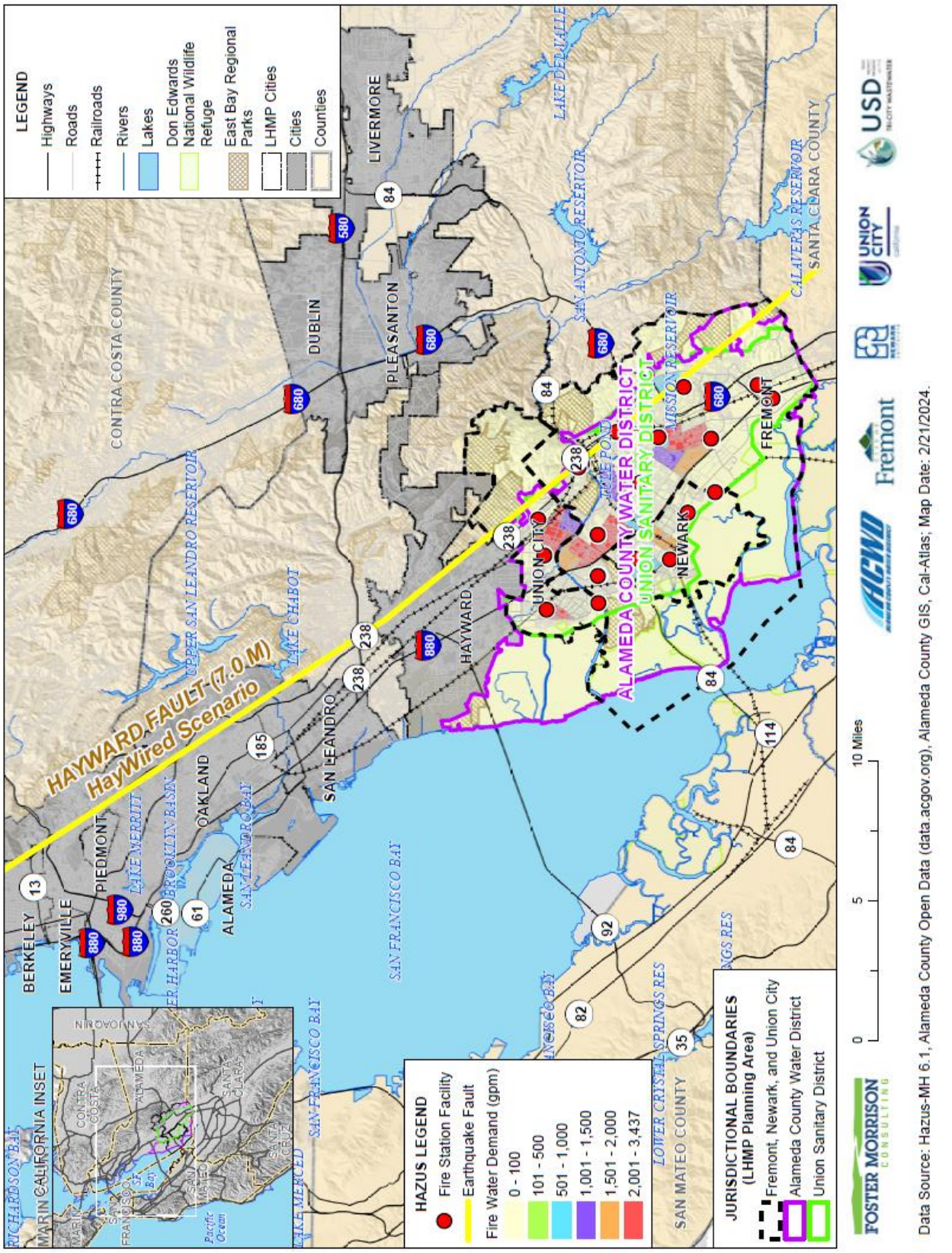


Figure 4-93 Haywired Scenario 7.0 Magnitude Fire Water Demand in GPM (50 MPH Winds)



San Andreas Scenario (Epicenter: Bay Bridge; Magnitude: 8.04)

The Hazus results for the San Andreas Fault Hazus Scenario is summarized below in Table 4-71. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained.

Table 4-71 Tri-City Planning Area– San Andreas Fault HAZUS Earthquake Deterministic Results for 8.04 M Event

Type of Impact	Impacts to City from 8.04 Deterministic Earthquake	
Total Buildings Damaged (based on 102,000 buildings)	Slight: 25,938 Moderate: 5,918 Extensive: 2,318 Complete: 556	
Building and Income Related Losses	$4,072,960,000	
Total Economic Losses (Includes building, income and lifeline losses)	$4,558,370,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 269 Requiring hospitalization: 42 Life threatening: 3 Fatalities: 5	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 459 Requiring hospitalization: 96 Life threatening: 15 Fatalities: 24	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 377 Requiring hospitalization: 100 Life threatening: 58 Fatalities: 26	
Damage to Transportation Systems	None with at least moderate damage	
Damage to Essential Facilities	4 schools with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	1 electrical power facility, and 3 communication facilities with at least moderate damage. 803 potable water line breaks, 403 wastewater line breaks, and 6 natural gas line breaks.	
Households without Power/Water Service (Based on 113,685 total households)	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 107,645 Water loss, Day 3: 106,623 Water loss, Day 7: 103,868 Water loss, Day 30: 6,937 Water loss, Day 90: 0
Displaced Households	1,731 displaced households	
Shelter Requirements	860 persons	
Debris Generation	471,000 tons	

Hazus 6.1

Loss Estimates Highlights

Hazus estimates that about 8,792 buildings will be at least moderately damaged. This is over 9.00 % of the buildings in the region. There are an estimated 555 buildings that will be damaged beyond repair.

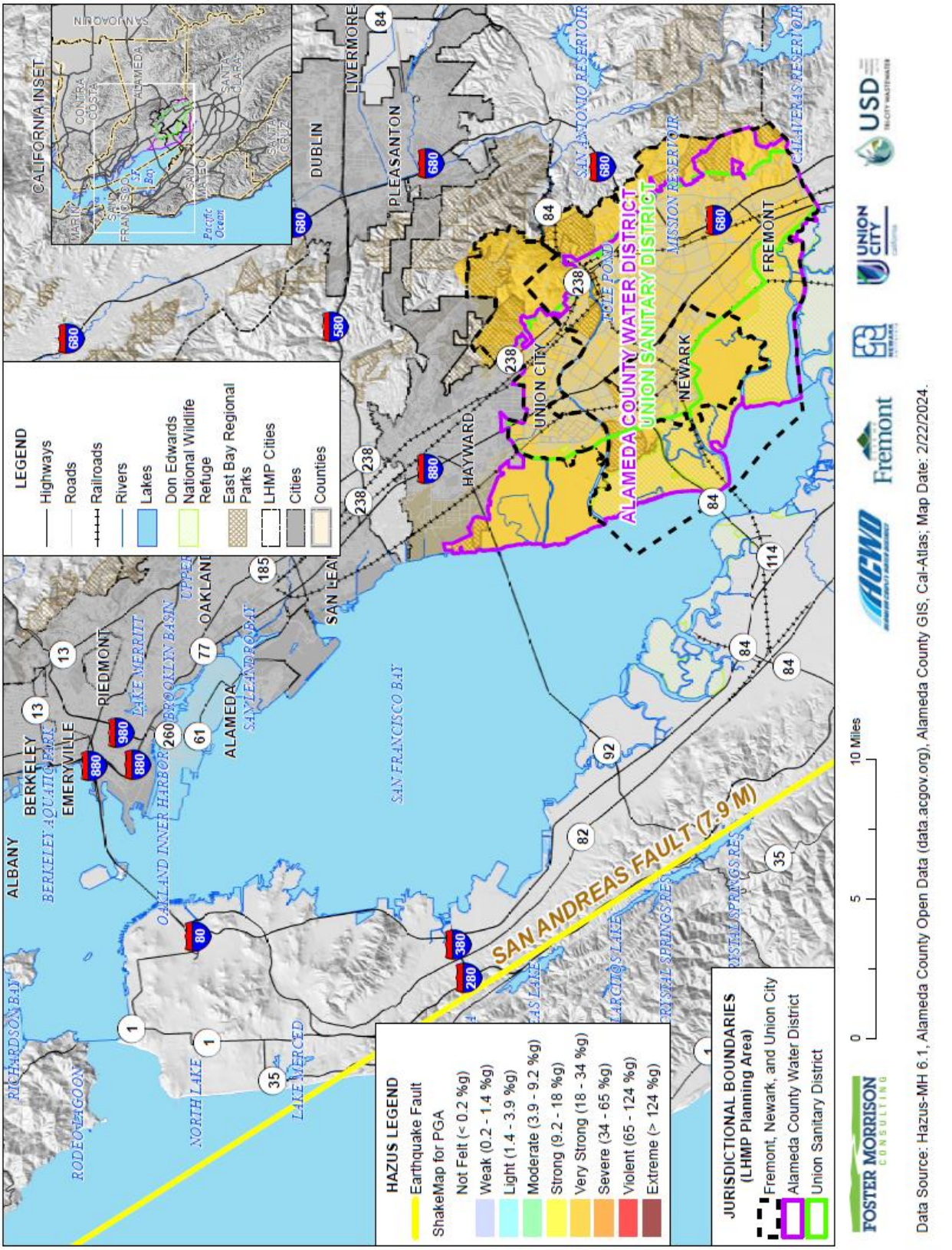
Before the earthquake, the region had 556 hospital beds available for use. On the day of the earthquake, the model estimates that only 424 hospital beds (76.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 91.00% of the beds will be back in service. By 30 days, 97.00% will be operational.

The total building-related losses were 4,072.96 (millions of dollars); 11 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 44 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure 4-94.

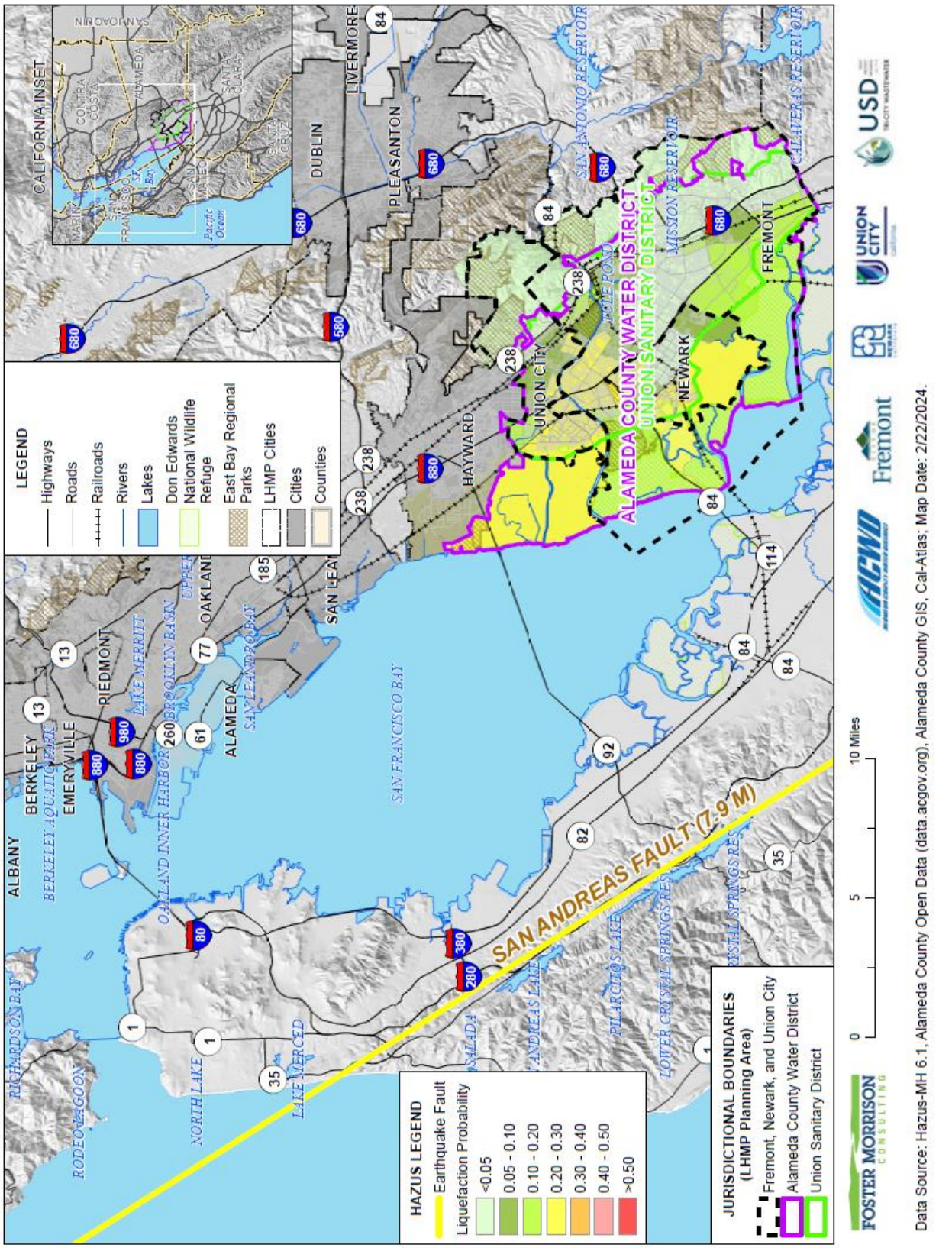
Figure 4-94 San Andreas Fault – 8.04 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure 4-95.

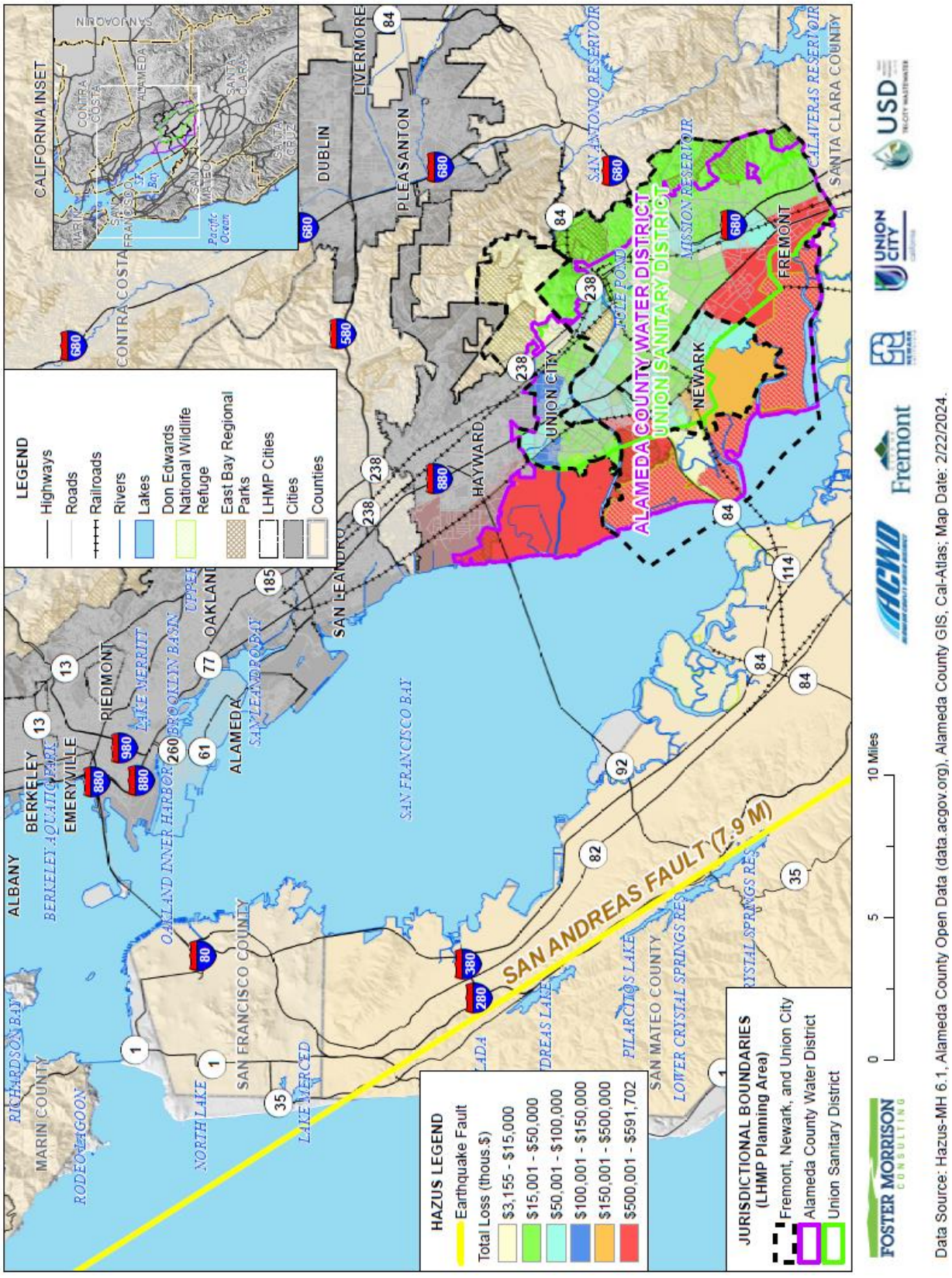
Figure 4-95 San Andreas Fault 8.04 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure 4-96.

Figure 4-96 San Andreas Fault 8.04 Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the San Andreas Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-97.
  - ✓ Population Exposure is shown on Figure 4-98.
  - ✓ Value Exposure is shown on Figure 4-99.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-100.
- Four maps were created for the 50-mph scenario:
  - ✓ Number of Ignitions is shown on Figure 4-101.
  - ✓ Population Exposure is shown on Figure 4-102.
  - ✓ Value Exposure is shown on Figure 4-103.
  - ✓ Fire Water Demand (gpm) is shown on Figure 4-104.

Figure 4-97 San Andreas Fault 8.04 Magnitude Number of Ignitions (10 MPH Winds)

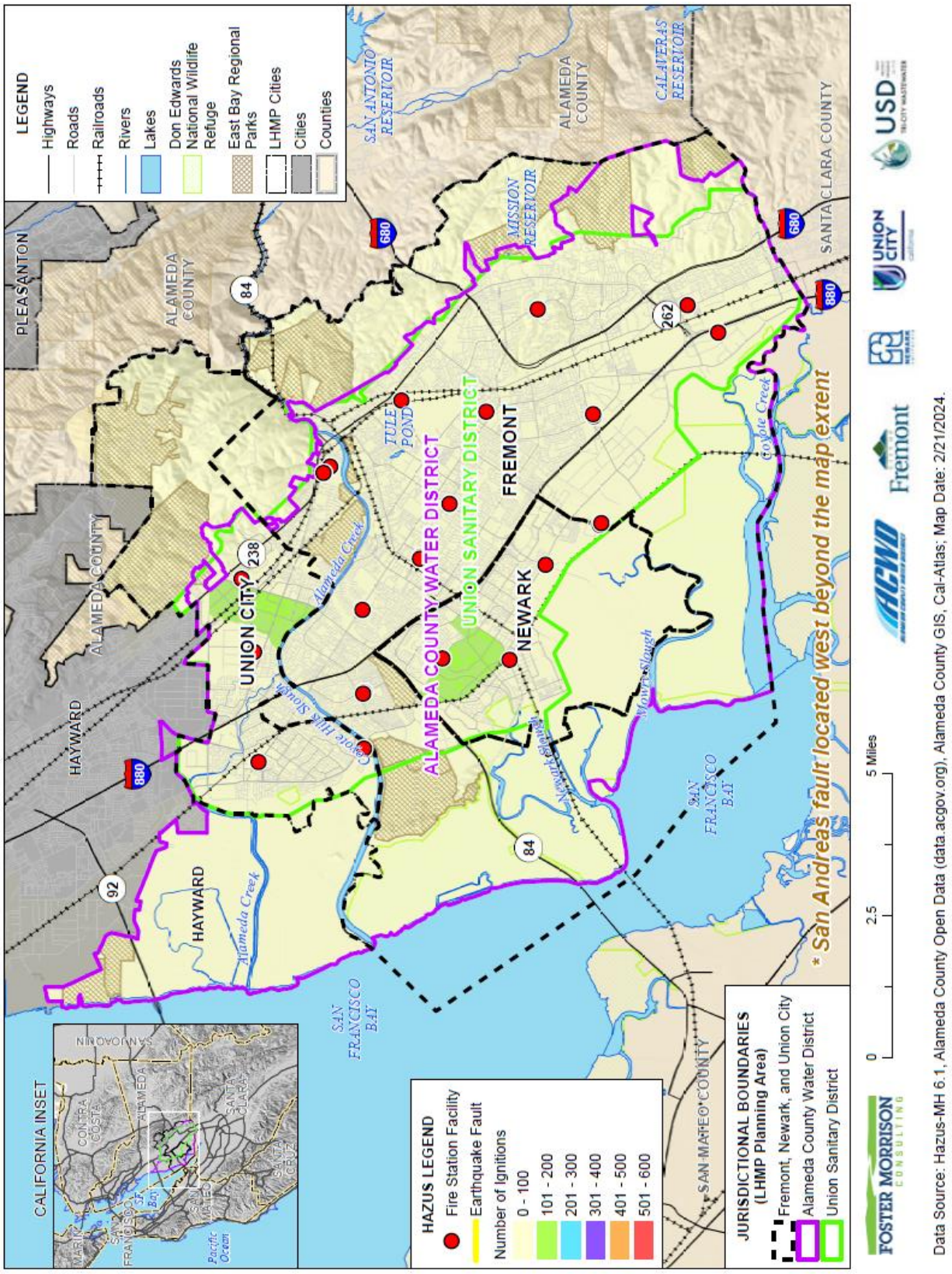


Figure 4-98 San Andreas Fault 8.04 Magnitude Population Exposure (10 MPH Winds)

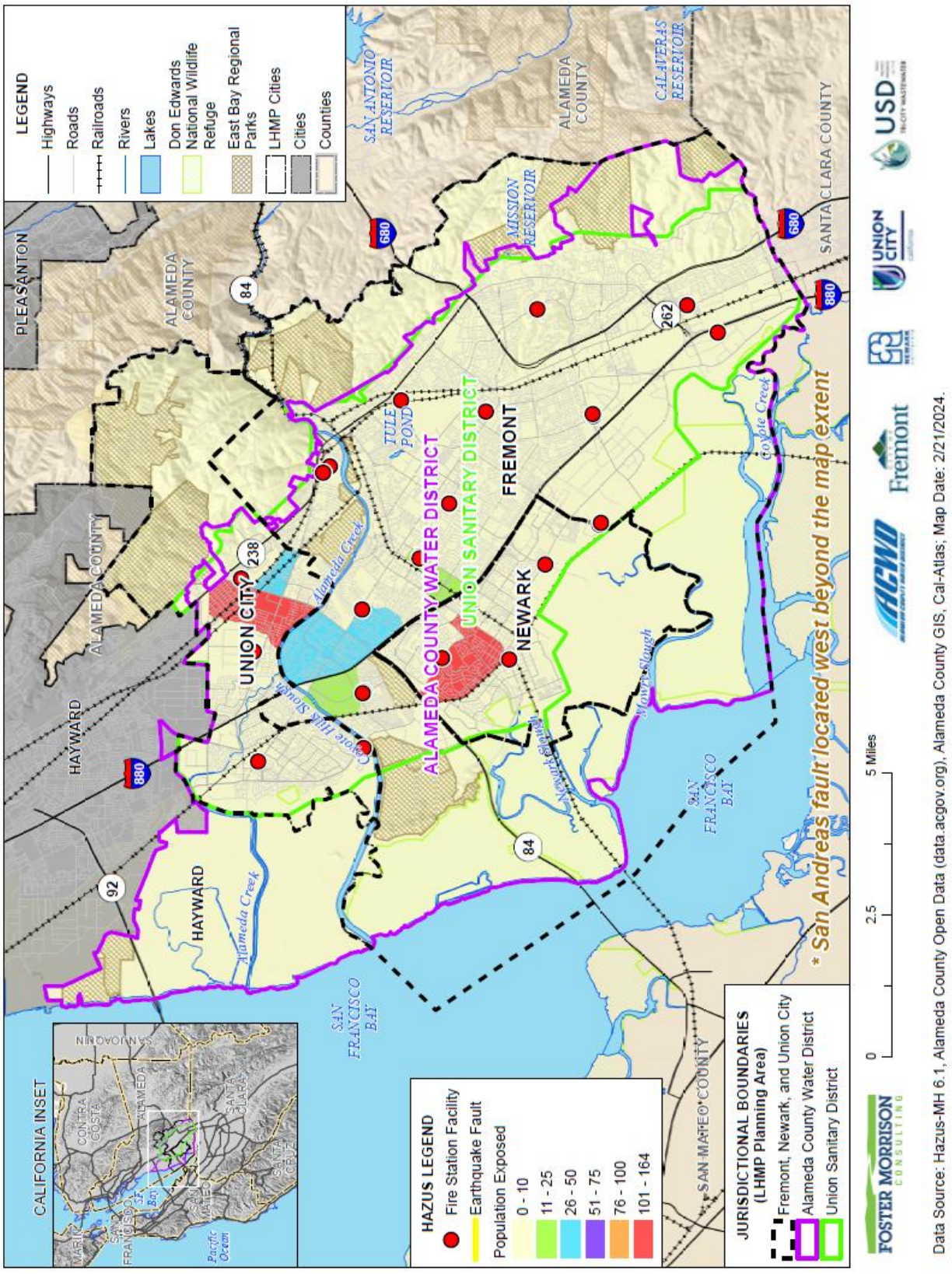


Figure 4-99 San Andreas Fault 8.04 Magnitude Exposed Values (10 MPH Winds)

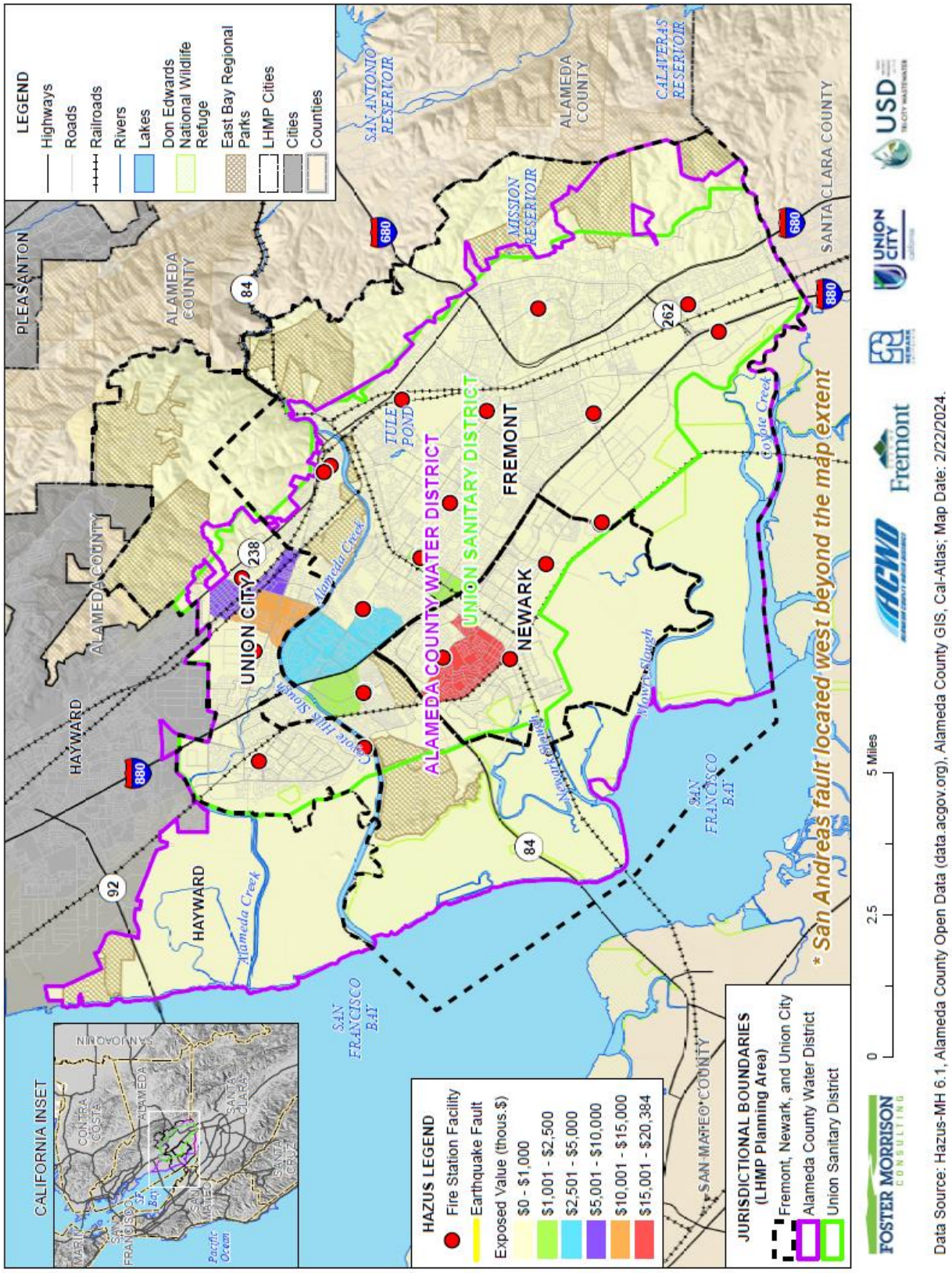


Figure 4-100 San Andreas Fault 8.04 Magnitude Fire Water Demand in GPM (10 MPH Winds)

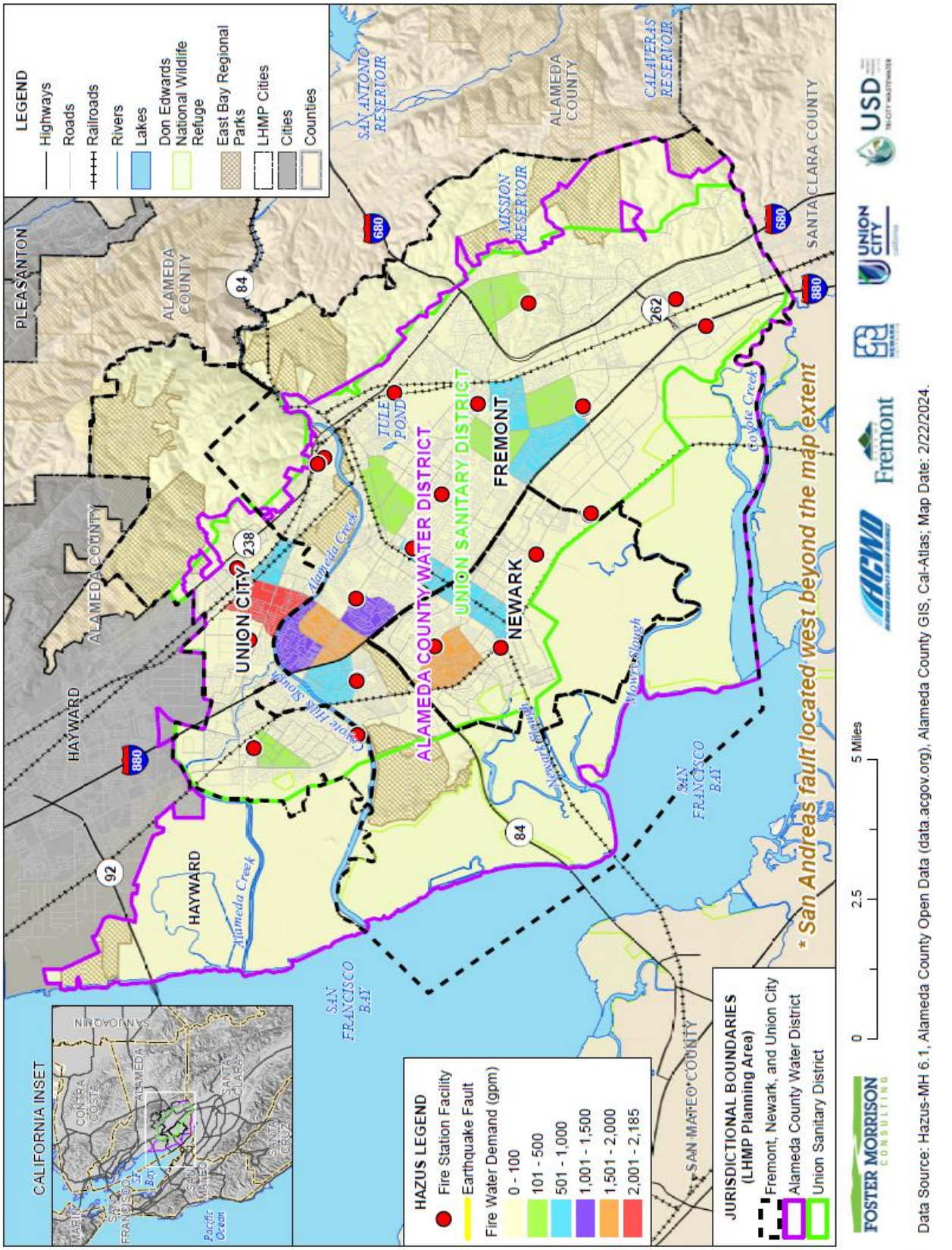


Figure 4-101 San Andreas Fault 8.04 Magnitude Number of Ignitions (50 MPH Winds)

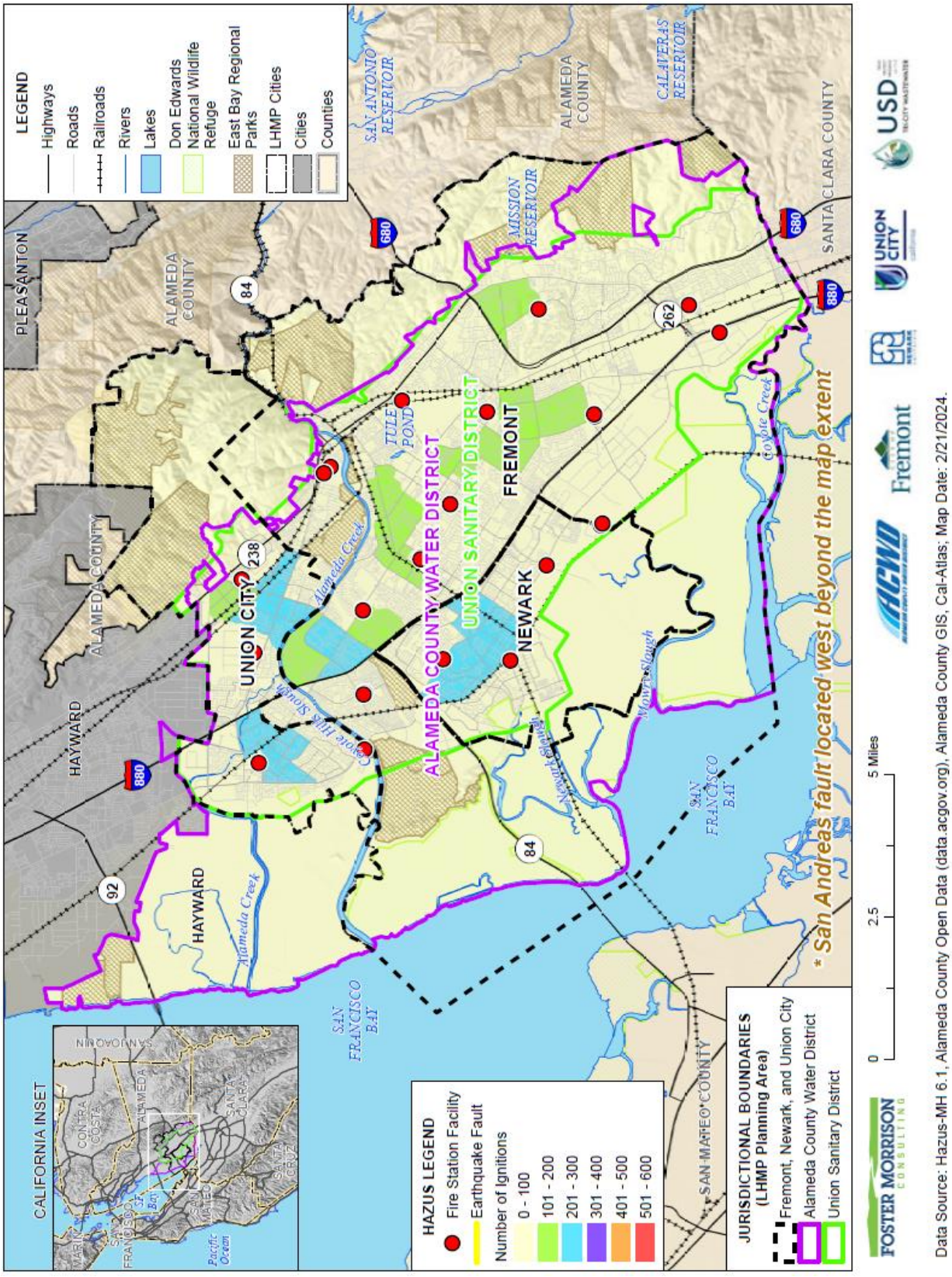


Figure 4-102 San Andreas Fault 8.04 Magnitude Population Exposure (50 MPH Winds)

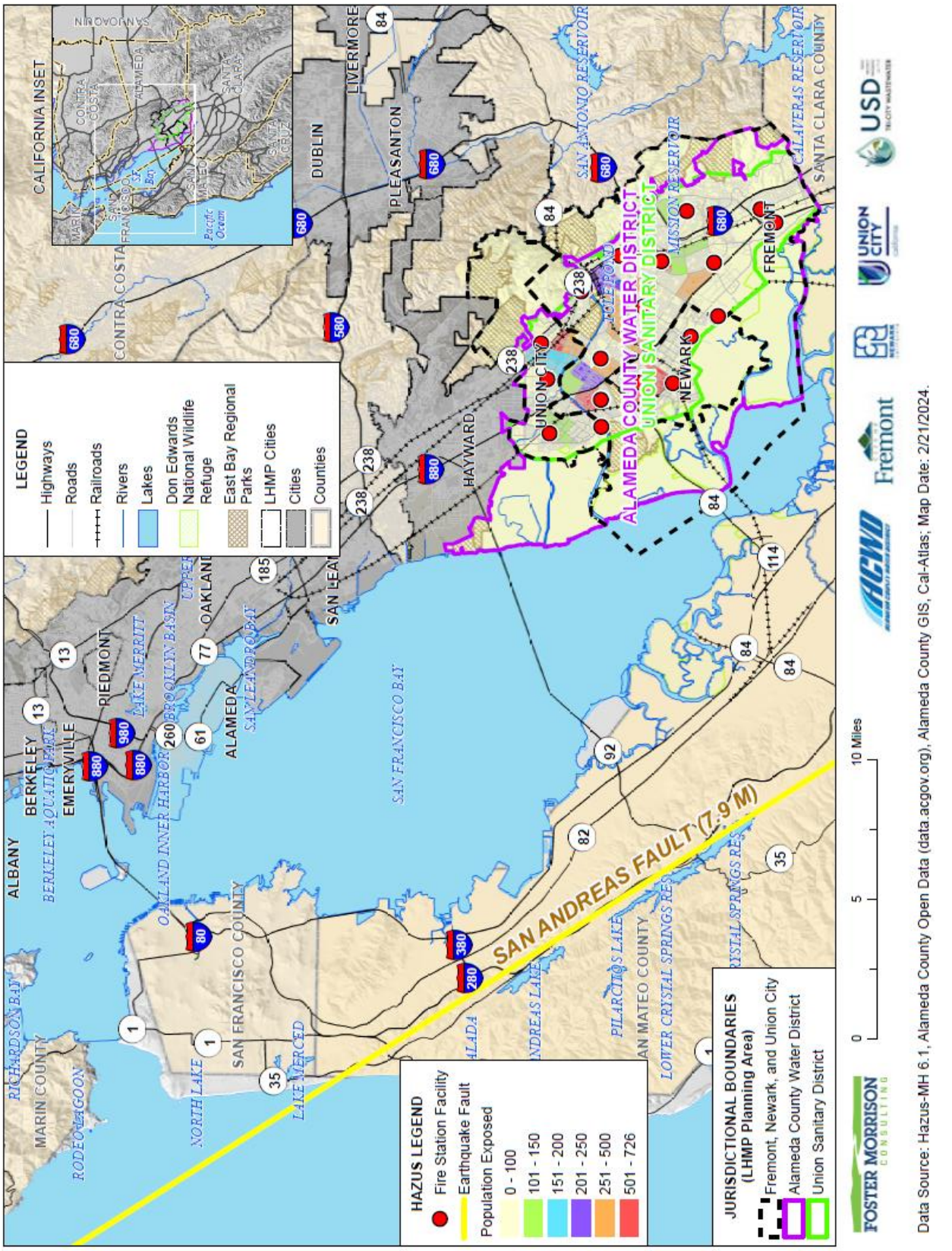


Figure 4-103 San Andreas Fault 8.04 Magnitude Exposed Values (50 MPH Winds)

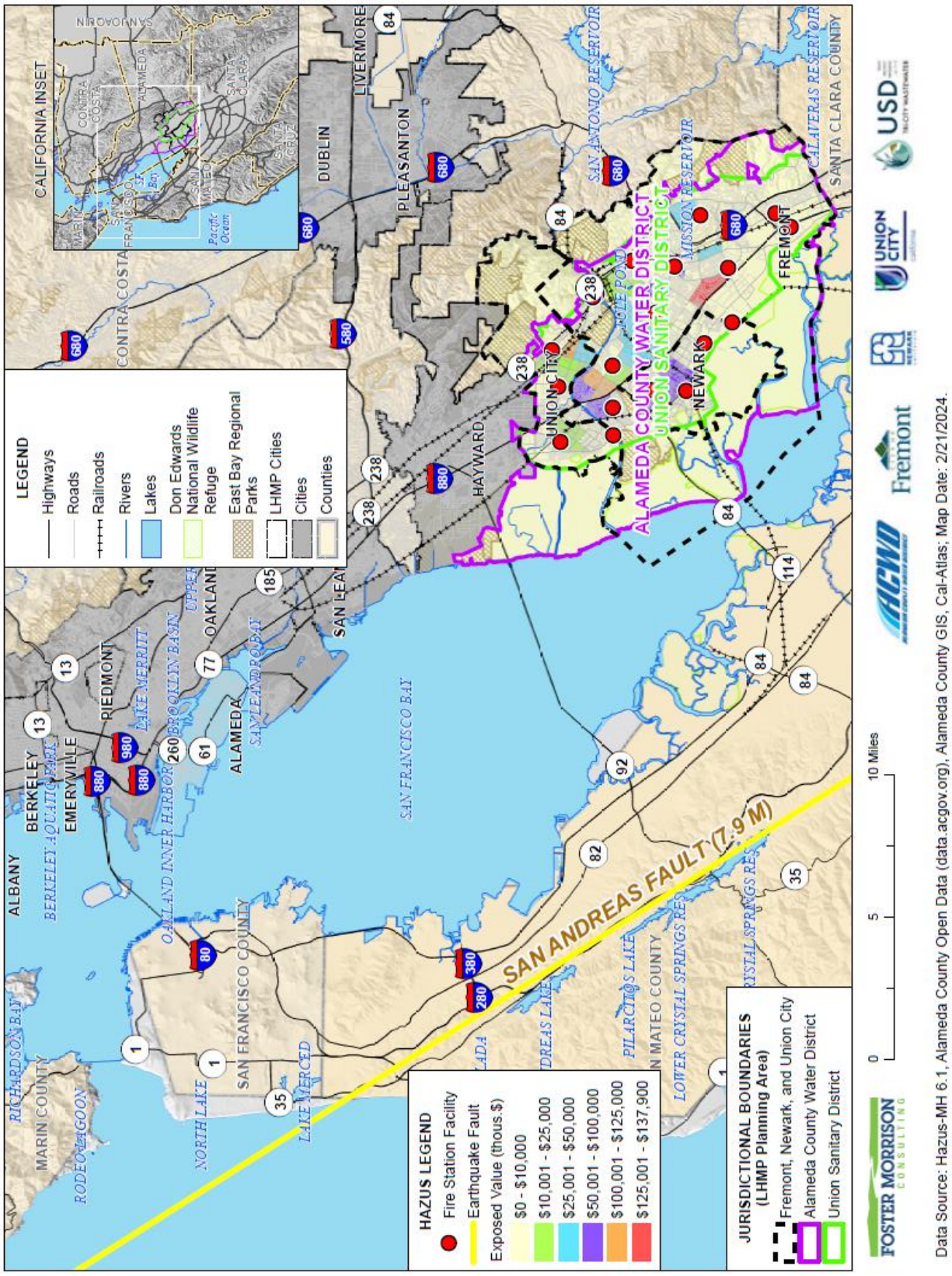


Figure 4-104 San Andreas Fault 8.04 Magnitude Fire Water Demand in GPM (50 MPH Winds)

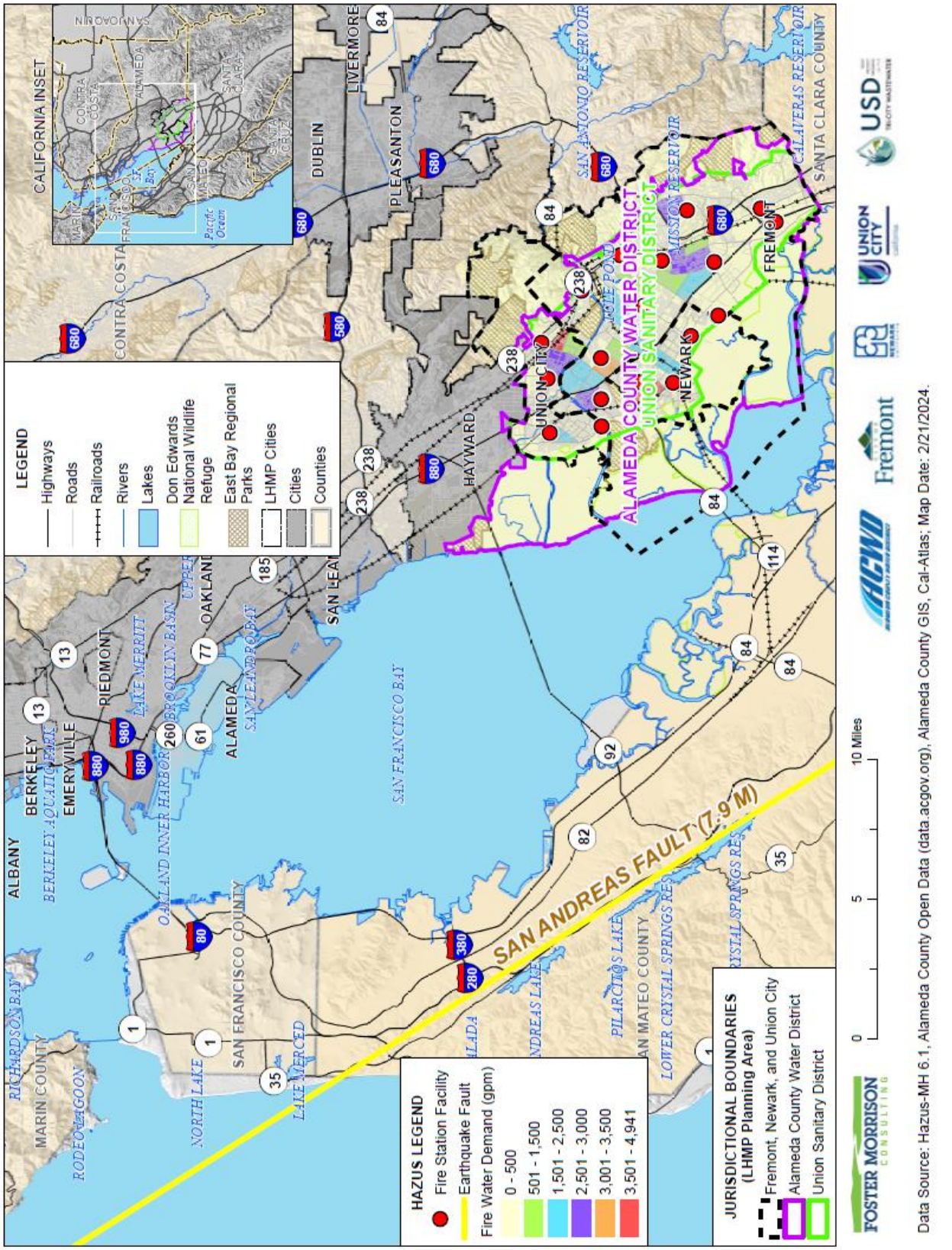


Table 4-72 Tri-City Planning Area – HAZUS-MH Earthquake Loss Estimation Scenario Comparison

Type of Impact	Calaveras Fault (CN+CC+CS+CE) Impacts to City from 7.43 Deterministic Earthquake	Hayward and Rodgers Creek Fault (RC+HN+HS) Impacts to City from 7.57 Deterministic Earthquake	Hayward Fault Haywired (HN+HS) Impacts to City from 7.0 Deterministic Earthquake	San Andreas Fault (SAO+SAN+SAP+SAS) Impacts to City from 8.04 Deterministic Earthquake
Total Buildings Damaged (based on 102,000 buildings)	Slight: 34,485 Moderate: 10,737 Extensive: 3,324 Complete: 802	Slight: 39,420 Moderate: 24,508 Extensive: 10,382 Complete: 3,703	Slight: 24,315 Moderate: 5,421 Extensive: 1,472 Complete: 327	Slight: 25,938 Moderate: 5,918 Extensive: 2,318 Complete: 556
Building and Income Related Losses	$6,072,200,000	$17,055,480,000	$3,287,230,000	$4,072,960,000
Total Economic Losses (Includes building, income and lifeline losses)	$6,694,910,000	$18,535,370,000	$4,058,120,000	$4,558,370,000
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 410 Requiring hospitalization: 64 Life threatening: 4 Fatalities: 7	Without requiring hospitalization: 1,344 Requiring hospitalization: 264 Life threatening: 22 Fatalities: 38	Without requiring hospitalization: 191 Requiring hospitalization: 27 Life threatening: 2 Fatalities: 3	Without requiring hospitalization: 269 Requiring hospitalization: 42 Life threatening: 3 Fatalities: 5
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 655 Requiring hospitalization: 134 Life threatening: 20 Fatalities: 32	Without requiring hospitalization: 3,083 Requiring hospitalization: 822 Life threatening: 131 Fatalities: 241	Without requiring hospitalization: 296 Requiring hospitalization: 55 Life threatening: 9 Fatalities: 12	Without requiring hospitalization: 459 Requiring hospitalization: 96 Life threatening: 15 Fatalities: 24
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 534 Requiring hospitalization: 138 Life threatening: 74 Fatalities: 34	Without requiring hospitalization: 2,315 Requiring hospitalization: 657 Life threatening: 199 Fatalities: 185	Without requiring hospitalization: 250 Requiring hospitalization: 55 Life threatening: 9 Fatalities: 12	Without requiring hospitalization: 377 Requiring hospitalization: 100 Life threatening: 58 Fatalities: 26
Damage to Transportation Systems	1 bridge with at least moderate damage	27 highway bridges, 8 railway bridges, 2 railway facilities, and 1 airport facility with at least moderate damage. 2 highway bridges with complete damage.	1 airport facility with at least moderate damage	None with at least moderate damage

Type of Impact	Calaveras Fault (CN+CC+CS+CE) Impacts to City from 7.43 Deterministic Earthquake		Hayward and Rodgers Creek Fault (RC+HN+HS) Impacts to City from 7.57 Deterministic Earthquake		Hayward Fault Haywired (HN+HS) Impacts to City from 7.0 Deterministic Earthquake		San Andreas Fault (SAO+SAN+SAP+SAS) Impacts to City from 8.04 Deterministic Earthquake	
Damage to Essential Facilities	4 schools and 1 EOC with at least moderate damage. 0 facilities with complete damage.		59 schools, 1 EOC, 5 police stations, and 2 fire stations with at least moderate damage. 4 school facilities with complete damage.		3 schools with at least moderate damage. 0 facilities with complete damage.		4 schools with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	1 wastewater facility, 1 electrical power facility, and 2 communication facilities with at least moderate damage. 0 facilities with complete damage. 1,018 potable water line breaks, 511 wastewater line breaks, and 8 natural gas line breaks.		1 wastewater facility, 1 electrical power facility, and 1 communication facility with at least moderate damage. None with complete damage. 2,251 potable water line breaks, 1,131 wastewater line breaks, and 17 natural gas line breaks.		1 electrical power facility and 2 communications facilities with at least moderate damage. 563 potable water line breaks, 268 wastewater line breaks, and 4 natural gas line breaks.		1 electrical power facility, and 3 communication facilities with at least moderate damage. 803 potable water line breaks, 403 wastewater line breaks, and 6 natural gas line breaks.	
Households without Power/Water Service (Based on 113,685 total households)	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 110,435 Water loss, Day 3: 109,958 Water loss, Day 7: 108,722 Water loss, Day 30: 72,925 Water loss, Day 90: 0	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 113,428 Water loss, Day 3: 113,406 Water loss, Day 7: 113,356 Water loss, Day 30: 112,715 Water loss, Day 90: 0	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 98,615 Water loss, Day 3: 95,442 Water loss, Day 7: 86,276 Water loss, Day 30: 0 Water loss, Day 90: 0	Power loss, Day 1: 113,685 Power loss, Day 3: 113,685 Power loss, Day 7: 113,685 Power loss, Day 30: 113,685 Power loss, Day 90: 113,685	Water loss, Day 1: 107,645 Water loss, Day 3: 106,623 Water loss, Day 7: 103,868 Water loss, Day 30: 6,937 Water loss, Day 90: 0
Displaced Households	2,703 displaced households		11,362 displaced households		993 displaced households		1,731 displaced households	
Shelter Requirements	1,328 persons		5,637 persons		499 persons		860 persons	
Debris Generation	624,000 tons		2,390,000 tons		367,000 tons		471,000 tons	

Impacts from Earthquake (and its subhazards)

Earthquakes can strike without warning and cause dramatic changes to the landscape of an area that can have devastating impacts on the built environment. The greatest impact is to life safety of the Tri-City Planning Area residents and visitors. Other impacts to the Planning Area would include damages to infrastructure such as roads, bridges, and dams; damages and loss of services to utilities and critical infrastructure, including those related to gas, power, water, wastewater and communication systems; damages to structures and other development; and possible loss of life and injuries.

Earthquakes can also cause failure of dams, levees, and reservoirs. Facilities and land downslope from dams or water reservoirs or behind levees might be subject to flooding, if the dams, reservoirs, or levees fail as a result of an earthquake. The Planning Area has locations with significant flood risk that include facilities downslope from dams or reservoirs or behind levees.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

These losses may be worsened in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

A large nearby earthquake can also increase the probability of secondary earthquake hazards affecting the Planning Area, including a surface fault rupture, liquefaction, landslides, and fire following earthquakes. These cascading events compound the impacts to the Planning Area during an earthquake.

Surface Fault Rupture

When a fault rupture extends to the earth's surface, the displacement can catastrophically damage structures or utilities. Fissuring, settlement, and permanent horizontal and vertical ground shifting often accompany large earthquakes. Such ground failures can significantly increase damage and may be a contributing cause of damage. Studies after the 1994 Northridge Earthquake showed that when ground failure was involved, damage to residential dwellings was three to four times greater than average shake damage. Because of their geographic extent and their tendency to be buried, networked infrastructures such as water, power, communication, and transportation lines are particularly vulnerable to ground failures.

Fault ruptures itself contributes very little to damage unless the structure or system element crosses the active fault; however, liquefaction can occur further from the source of the earthquake. In general, newer construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured housing is very susceptible to damage because their foundation systems are rarely braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even

from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of unreinforced masonry (URM) and soft story buildings.

Liquefaction

Ground settlement during liquefaction can cause damage when the amount of settlement varies significantly across the length of a structure. Liquefaction can occur in susceptible soils and can severely damage bridges, wharves, piers, and other structures at ports and harbors, as well as underground utility lines and structures.

Earthquake-Induced Landslides

Landslides caused by earthquakes can be widespread over the area of highest shaking intensity and also at greater distances if hillsides are in a susceptible condition. Earthquake landslides can significantly damage structures and transportation and utility lifelines.

Fire Following Earthquake

Earthquakes are often responsible for igniting fires that can contribute to a considerable share of the overall damage in a disaster. The fires can start from a variety of sources: appliances with natural gas pilot lights might tip, damaged electrical equipment might spark, and gas line connections might break. Recently, in the South Napa Earthquake, a number of mobile homes were destroyed and damaged when the gas connection to a home broke. In the Loma Prieta Earthquake, 36 fires broke out in San Francisco alone but luckily were quickly contained in large part due to the abnormally calm wind that evening, and the fires' proximity to the Bay that allowed a fire boat to pump water to the fire where the water lines had failed. In the 1906 earthquake, over 3.5 square miles of San Francisco burned, representing 80 percent of San Francisco's property value at the time.

Fires after earthquakes may severely strain fire departments that must respond to multiple simultaneous ignitions. Impaired communications, water supply, transportation, and other demands such as structural collapses, hazardous materials releases, or medical emergencies affect fire department response. A few characteristics can make specific facilities more vulnerable to fire following earthquake. If a building collapses, there is a high risk for gas or electrical lines to start "seed" fires that then impact undamaged neighboring structures or start wildfires. Areas of liquefaction, fault rupture, and landslide are more vulnerable to fire. There is a greater potential for underground gas mains to break due to ground displacements, and water lines in the area might also be damaged, which could prevent the ability to fight a fire with regular water resources. Areas that are largely built with wood frames or shingle roofs might be less prone to earthquake damage but are at a heightened risk for the spread of fires.

Future Development

Earthquakes and liquefaction hazards are taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.11. Flood: (1% and 0.2% Annual Chance)

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Flooding is the rising and overflowing of a body of water onto normally dry land. Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Floods can cause substantial damage to structures, landscapes, and utilities and can cause life safety issues. Floods can be extremely dangerous. Six inches of moving water can knock over a person given a strong current. A car will float in less than two feet of moving water and can be swept downstream into deeper waters. Floods kill more people trapped in vehicles than anywhere else.

During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Floodwaters can transport large objects downstream which can damage or remove stationary structures, such as dam spillways. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services. Standing water can cause damage to crops, roads, foundations, and electrical circuits. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Where flooding occurs in populated areas, warning and evacuation will be of critical importance to reduce life and safety impacts from any type of flooding.

There are three primary types of freshwater flood events in the Tri-City Planning Area: riverine and lake, flash flooding, and urban stormwater. Regardless of the type of flood, the cause is often the result of severe weather and excessive rainfall, either in the flood area or upstream reaches.

- **Riverine and lake flooding** is the most common type of flood event and occurs when a watercourse exceeds its "bank-full" capacity. Riverine flooding generally occurs as a result of prolonged rainfall, or rainfall that is combined with already saturated soils from previous rain events. The duration of riverine floods may vary from a few hours to many days. Factors that directly affect the amount of flood runoff include precipitation amount, intensity and distribution, the amount of soil moisture, seasonal variation in vegetation, snow depth, and water-resistance of the surface due to urbanization. The warning time associated with slow rise floods assists in life and property protection.
- The term "**flash flood**" describes localized floods of great volume and short duration. In contrast to riverine flooding, this type of flood usually results from heavy rainfall on a relatively small drainage area. Precipitation of this sort usually occurs in the winter and spring. Flash floods often require immediate evacuation within the hour.
- **Stormwater/Urban** flood events have increased as land has been converted from fields or woodlands to roads and parking lots and lost its ability to absorb rainfall. Urbanization increases runoff by two to six times that of natural terrain. This is discussed in the Section 4.3.12 below.

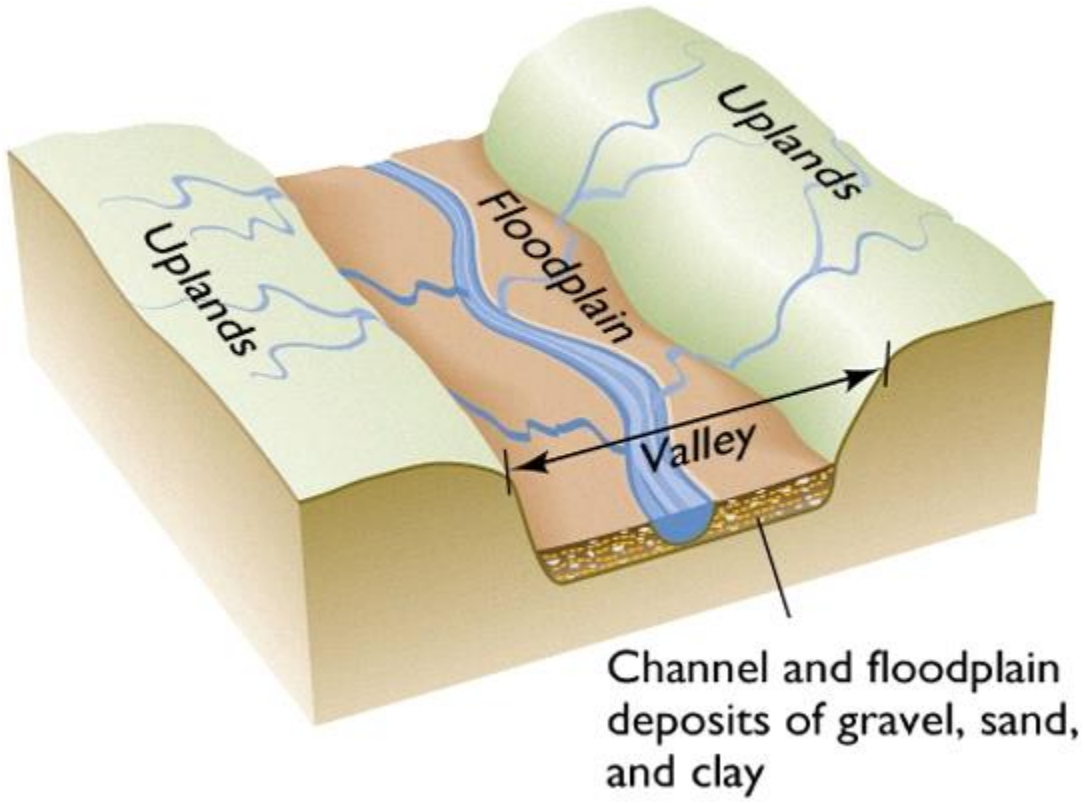
The Tri-City Planning Area is also at risk to flooding resulting from dam and levee failures. Dam failure flooding is discussed separately in Section 4.3.7 of this document, while levee failures are discussed in Section 4.3.14. Regardless of the type of flood, the cause is often the result of severe weather and excessive rainfall, either in the flood area or upstream reach. Areas of the Planning Area are also at risk to Coastal Flooding and Sea Level Rise, which is discussed in Section 4.3.7 of this document.

The potential for flooding can change and increase through various land use changes and changes to land surface, resulting in a change to the floodplain. Environmental changes can create localized flooding problems in and outside of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

Location and Extent

The area adjacent to a channel is the floodplain (see Figure 4-105). Floodplains are illustrated on inundation maps, which show areas of potential flooding and water depths. In its common usage, the floodplain most often refers to that area that is inundated by the 100-year flood, the flood that has a one percent chance in any given year of being equaled or exceeded (1% annual chance flood). The 1% annual chance flood is the national minimum standard to which communities regulate their floodplains through the National Flood Insurance Program (NFIP). The 500-year flood is a flood that has a 0.2 percent chance of being equaled or exceeded in any given year (0.2% annual chance flood). The potential for flooding can change and increase through various land use changes and changes to land surface, which result in a change to the floodplain. A change in environment can create localized flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. These changes are most often created by human activity.

Figure 4-105 Floodplain Schematic



Source: FEMA

Hydrologic Regions

According to Cal DWR, California is divided into 10 hydrologic regions. The Tri-City Planning Area is traversed by one hydrologic region – the San Francisco Bay Hydrologic Region:

- The San Francisco Bay Hydrologic Region covers approximately 2.88 million acres (4,500 square miles) and includes all of San Francisco and portions of Marin, Sonoma, Napa, Solano, San Mateo, Santa Clara, Contra Costa, and Alameda counties. The region corresponds to the boundary of RWQCB 2. Significant geographic features include the Santa Clara, Napa, Sonoma, Petaluma, Suisun-Fairfield, and Livermore valleys; the Marin and San Francisco peninsulas; San Francisco, Suisun, and San Pablo bays; and the Santa Cruz Mountains, Diablo Range, Bolinas Ridge, and Vaca Mountains of the Coast Range. While being the smallest in size of the 10 Hydrologic Regions, the region has the second largest population in the State. Major population centers include the cities of San Francisco, San Jose and Oakland.

A map of the California's hydrological regions is provided in Figure 4-106.

Figure 4-106 California Hydrologic Regions



Source: California Department of Water Resources

Floodplain Mapping

FEMA established standards for floodplain mapping studies as part of the NFIP. The NFIP makes flood insurance available to property owners in participating communities adopting FEMA-approved local floodplain studies, maps, and regulations. Floodplain studies that may be approved by FEMA include federally funded studies; studies developed by state, city, and regional public agencies; and technical studies generated by private interests as part of property annexation and land development efforts. Such studies may include entire stream reaches or limited stream sections depending on the nature and scope of a study.

Flood Insurance Study (FIS)

The FIS develops flood-risk data for various areas of the community that will be used to establish flood insurance rates and to assist the community in its efforts to promote sound floodplain management. The Tri-City Planning Area is covered by the Alameda County FIS (dated 12/21/2018).

Digital Flood Insurance Rate Maps (DFIRM)

As part of its Map Modernization program, FEMA has been converting paper FIRMS to digital FIRMs (DFIRMs). These digital maps:

- Incorporate the latest updates (Letters of Map Revision (LOMRs) and Letters of Map Amendment (LOMAs)
- Utilize community supplied data
- Verify the currency of the floodplains and refit them to community supplied basemaps
- Upgrade the FIRMs to a GIS database format to set the stage for future updates and to enable support for GIS analyses and other digital applications
- Solicit community participation

DFIRMs for Alameda County have been developed and are being used for the flood analysis for this LHMP. The Tri-City Planning Area is covered by the Alameda County DFIRM (dated 12/21/2018), with much of the mapped flood zones within the Planning Area seeing limited change from the flood zones established in the 2009 DFIRMs. FEMA DFIRM flood zones and the Planning Area are shown in Figure 4-107.

Figure 4-107 Tri-City Planning Area– FEMA DFIRM Flood Zones

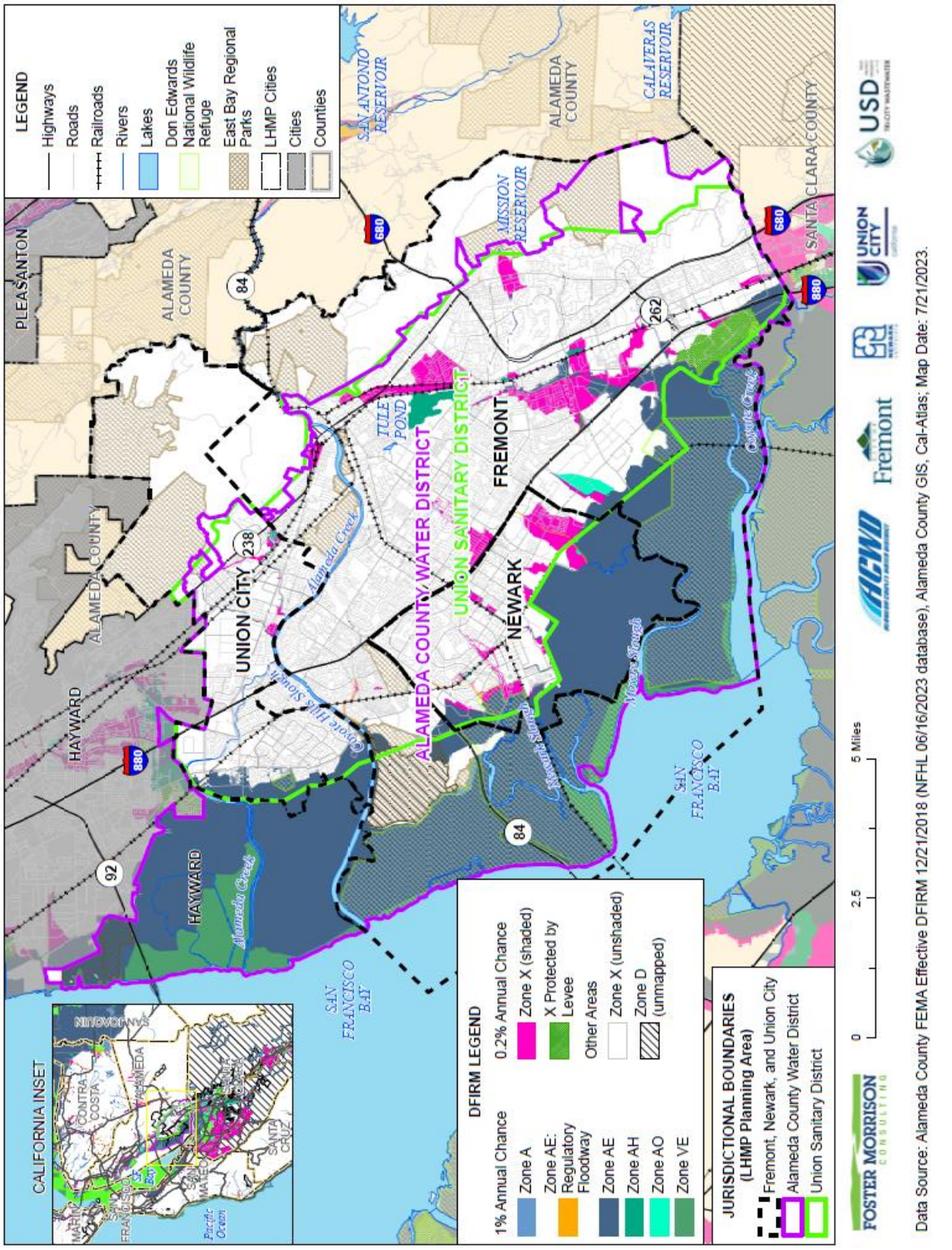


Table 4-73 details the DFIRM mapped flood zones located within the Planning Area.

Table 4-73 Tri-City Planning Area– DFIRM Detailed Flood Zones

Flood Zone	Description	Flood Zone Present in Planning Area
A	1% annual chance flooding: No base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
AE Regulatory Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	X
AE	1% annual chance flooding: Base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base Flood Elevations (BFEs) derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.	X
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood. Flood insurance is not mandatory but is available.	X
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone. Flood insurance is not mandatory but is available.	X
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.	X
X (unshaded)	No flood hazard	X

Source: FEMA

Flood extents are usually measured in depths of flooding, aerial extent of the floodplain, as well as flood zones that a location falls in (i.e., 1% or 0.2% annual chance flood). Expected flood depths in the Tri-City Planning Area vary and are not well defined. Flood durations in the Planning Area tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Aerial flood extent from the FEMA DFIRMs is shown on Table 4-74.

Table 4-74 Tri-City Planning Area – Geographical DFIRM Flood Extents

Jurisdiction /Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
1% Annual Chance Flood Hazard	16,440	20.27%	809	1.74%	15,631	45.36%
0.2% Annual Chance Flood Hazard	3,359	4.14%	2,790	5.98%	569	1.65%
Other Areas	61,290	75.58%	43,029	92.28%	18,261	52.99%
Fremont Total	**81,089**	**100.00%**	**46,628**	**100.00%**	**34,462**	**100.00%**
Newark						
1% Annual Chance Flood Hazard	4,712	32.08%	687	7.20%	4,025	78.14%
0.2% Annual Chance Flood Hazard	2,771	18.86%	2,452	25.71%	319	6.18%
Other Areas	7,205	49.06%	6,398	67.08%	807	15.67%
Newark Total	**14,688**	**100.00%**	**9,537**	**100.00%**	**5,151**	**100.00%**
Union City						
1% Annual Chance Flood Hazard	926	5.55%	223	2.39%	703	9.59%
0.2% Annual Chance Flood Hazard	65	0.39%	35	0.38%	29	0.40%
Other Areas	15,678	94.06%	9,083	97.23%	6,595	90.01%
Union City Total	**16,668**	**100.00%**	**9,341**	**100.00%**	**7,327**	**100.00%**
Alameda County Water District						
1% Annual Chance Flood Hazard	29,393	27.52%	1,808	2.83%	27,585	64.39%
0.2% Annual Chance Flood Hazard	6,195	5.80%	5,278	8.25%	918	2.14%
Other Areas	71,222	66.68%	56,885	88.92%	14,337	33.47%
Alameda County Water District Total	**106,810**	**100.00%**	**63,970**	**100.00%**	**42,840**	**100.00%**

Jurisdiction /Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Union Sanitary District						
1% Annual Chance Flood Hazard	3,905	5.04%	1,089	1.72%	2,815	19.88%
0.2% Annual Chance Flood Hazard	6,114	7.89%	5,257	8.30%	857	6.05%
Other Areas	67,484	87.07%	56,997	89.98%	10,486	74.06%
Union Sanitary District Total	**77,502**	**100.00%**	**63,344**	**100.00%**	**14,159**	**100.00%**

Source: FEMA 12/21/2018 DFIRM

CA DWR Floodplain Mapping

FEMA DFIRMs are just one measure of flood risk in a community. Also to be considered when evaluating the flood risks in the Tri-City Planning Area are various floodplain maps developed by Cal DWR for various areas throughout California.

DWR Best Available Maps

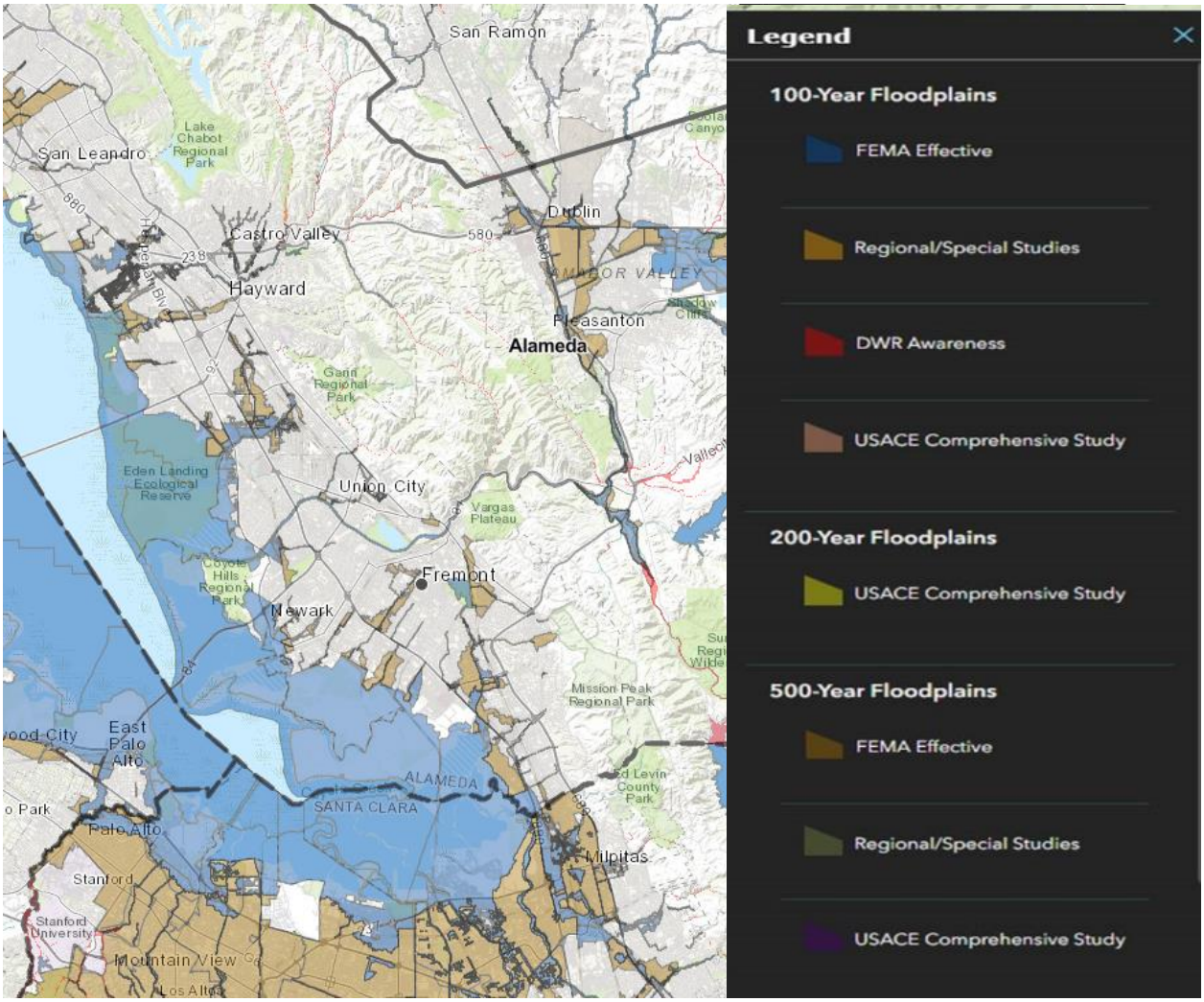
The FEMA regulatory maps provide just one perspective on flood risks in the Tri-City Planning Area. Senate Bill 5 (SB 5), enacted in 2007, authorized the California DWR to develop the Best Available Maps (BAM) displaying 100- and 200-year floodplains originally for areas located within the Sacramento-San Joaquin (SAC-SJ) Valley watershed. DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.

Different than the FEMA DFIRMs which have been prepared to support the NFIP and determining the need for flood insurance, the BAMs are provided for informational purposes and are intended to reflect current 100- and 500-year (0.2%) event risks using the best available data. The 100-year floodplain limits on the BAM are a composite of multiple 100-year floodplain mapping sources. It is intended to show all currently identified areas at risk for a 100-year flood event, including FEMA's 100-year floodplains. The BAM maps are comprised of different engineering studies performed by FEMA, Corps, and DWR for assessment of potential 100- and 500-year floodplain areas. These studies are used for different planning and/or regulatory applications. They are for the same flood frequency; however, they may use varied analytical and quality control criteria depending on the study type requirements.

The value in the BAMs is that they provide a bigger picture view of potential flood risk to the Planning Area than that provided in the FEMA DFIRMs. This provides the community and residents with an additional tool for understanding potential flood hazards not currently mapped as a regulated floodplain. Improved awareness of flood risk can reduce exposure to flooding for new structures and promote increased protection for existing development. Informed land use planning will also assist in identifying levee maintenance needs and levels of protection. By including the FEMA 100-year floodplain, it also supports identification of the need and requirement for flood insurance.

These BAM floodplain maps for Planning Area can be seen in Figure 4-108.

Figure 4-108 Tri-City Planning Area – Best Available Map



Source: California DWR, map created 6/13/2023

Legend explanation: Blue - FEMA 100-Year, Orange – Local 100-Year (developed from local agencies), Red – DWR 100-year (Awareness floodplains identify the 100-year flood hazard areas using approximate assessment procedures.), Pink – USACE 100-Year (2002 Sac and San Joaquin River Basins Comp Study), Yellow – USACE 200-Year (2002 Sac and San Joaquin River Basins Comp Study), Tan – FEMA 500-Year, Grey – Local 500-Year (developed from local agencies), Purple – USACE 500-Year (2002 Sac and San Joaquin River Basins Comp Study).

Past Occurrences

Disaster Declaration History

There have been 19 state and 19 federal disaster declarations due to flooding in Alameda County as shown in Table 4-75.

Table 4-75 Alameda County Disaster Declarations 1950-2023 from Flood

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	20	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (three)

Source: Cal OES, FEMA

The Planning Team noted that winter of 2022/2023 multiple atmospheric rivers affected the State and the Planning Area. This was also the case in the winter of 2023/2024. More information on these events can be found in the respective jurisdictional annexes to this LHMP Update.

NCDC Events

The NCDC tracks flood events for each County since 1996. These are shown on Table 4-76 for Alameda County.

*Table 4-76 Alameda County NCDC Flooding Events 1/1/1996-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Flash Flood	12	0	0	0	0	$100,000	$0
Flood	43	0	0	0	0	$44,325,500	$0
Heavy Rain	5	0	2	0	1	$60,000	$30,000
Total	**60**	**0**	**2**	**0**	**1**	**$44,485,500**	**$30,000**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of Alameda County.

Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

1% Annual Chance Flood

Occasional—This is the flood that has a 1- percent chance of being equaled or exceeded in the Tri-City Planning Area in any given year. Thus, the 1% annual chance flood could occur more than once in a relatively short period of time.

0.2% Annual Chance Flood

Unlikely—The flood has a 0.2 percent chance of being equaled or exceeded in the Tri-City Planning Area in any given year.

Climate Change and Flood

The 2016/2017/2022 LHMPs noted that the frequency and severity of coastal flooding is expected to gradually increase as sea level gradually rises. For riverine flooding, flood risk in a given location often increases with time because increasing development within the watershed increases runoff, and because development and fill within floodplains or sedimentation in a river channel may increase flood elevations. Flood risk at a given location may also decrease over time if flood control structures such as levees or upstream dams for flood control are constructed or improved. Climate change and its effect on flooding is discussed using three sources:

- 2021 CAS
- Cal-Adapt
- National Center for Atmospheric Research

California Climate Adaptation Strategy

According to the CAS, climate change may affect flooding in California and the Planning Area. While average annual rainfall may increase or decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century. It is possible that average soil moisture and runoff could decline, however, due to increasing temperature, evapotranspiration rates, and spacing between rainfall events. Reduced snowpack and increased number of intense rainfall events are likely to put additional pressure on water infrastructure which could increase the chance of flooding associated with breaches or failures of flood control structures such as levees and dams.

Cal Adapt

Cal Adapt future precipitation projections were shown in Figure 4-30 in Section 4.3.4. These could affect flooding in the Tri-City Planning Area.

National Center for Atmospheric Research

Also, according to the National Center for Atmospheric Research in Boulder, Colorado, atmospheric rivers are likely to grow more intense in coming decades, as climate changes warms the atmosphere enabling it to hold more water.

Vulnerability Assessment

Vulnerability—High

Historically, the Tri-City Planning Area has always been at risk to flooding during the rainy season from November through April. The Alameda County FIS noted that floods result from prolonged heavy rainfall and are characterized by high peak flows of moderate duration and by a large volume of runoff. Flooding is more severe when antecedent rainfall has resulted in saturated ground conditions. Several areas of the Planning Area are subject to flooding by the overtopping of rivers and creeks, levee failures, and the failure of urban drainage systems that cannot accommodate large volumes of water during severe rainstorms. In addition to the major rivers, there are many streams, channels, canals, and creeks that serve the drainage

needs of the Planning Area and communities surrounding it. There is significant threat of flooding in areas of the Planning Area from several of these streams. These streams can be prone to rapid flooding with little notice.

Much of the Planning Area is at some measure of vulnerability to floods. An assessment of a community's vulnerability to flood begins with an understanding of local exposure to flood. This is included int the discussion of the Planning Area's Assets at Risk to this hazard.

Assets at Risk

The Planning Area has mapped FEMA flood hazard areas. GIS was used to determine the possible impacts of flooding within the Planning Area and how the risk varies across the Tri-City Planning Area. The following methodology was utilized in determining assets at risk to the 1% annual chance flood event and 0.2% annual chance flood event.

Methodology (Parcel and Structures)

2023 Alameda County Parcel/Assessor Data was used as the basis for the Tri-City inventory of parcels, values, and acres. Alameda County has a FEMA effective DFIRM dated 12/21/2018, which was obtained from FEMA's National Flood Hazard Layer to perform the flood analysis. In some cases, there are parcels in multiple flood zones, such as Zone A, Zone X, or Shaded X. GIS was used to create a centroid, or point representing the center of the parcel polygon. DFIRM flood data was then overlaid on the parcel layer. For the purposes of this analysis, the flood zone that intersected a parcel centroid was assigned the flood zone for the entire parcel. The parcels and associated values were segregated and analyzed in this fashion to determine parcels and values at risk to the flood hazard for the Tri-City Planning Area.

Methodology (Loss Estimate)

The loss estimate for flood is based on the total of improved and contents value. Improved parcels include those with improved structure values identified in the Alameda County Assessor's database. Only improved parcels and the value of their structure improvements were included in the flood loss analysis. The value of land is not included in the loss estimates as generally the land is not at loss to floods, just the value of improvements and structure contents. The land value is represented in the detailed flood tables, but is primarily present to show the value of the land associated with each flood zone.

The land use categories for the Tri-City Planning Area (derived from general plan land use descriptions) were used to develop estimated content replacement values (CRV) that are potentially at loss from hazards, using FEMA Hazus methodologies as previously described in Section 4.2. The CRVs were added to the improved parcel values.

Once the potential value of affected parcels was calculated, a damage factor was applied to obtain loss estimates by flood zone. When a flood occurs, seldom does the event cause total loss of an area or building. Potential losses from flooding are related to a variety of factors including flood depth, flood velocity, building type, and construction. The percentage of damage is primarily related to the flood depth. FEMA's flood benefit/cost module uses a simplified approach to model flood damage based on building type and flood depth. The values at risk in the flood analysis tables were refined by applying an average damage

estimation of 20% of the total building value. The 20% damage estimate utilized FEMA's Flood Building Loss Table based on an assumed average flood depth of 2 feet. The end result of the flood hazard analysis is an inventory of the numbers, types, and values of parcels subject to the flood hazard.

People and Populations

All people and populations located in the 1% and 0.2% annual chance floodplains are at some risk to flooding. Certain vulnerable populations located within areas prone to flooding may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unhoused, those with limited mobility, and those that lack the resources to leave the area.

Tri-City Planning Area residents that live in the 1% and 0.2% annual chance floodplains are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to the Planning Area's residential population residing within these hazard areas, the DFIRM flood zones were overlayed on the parcel layer and linked to the Assessor Data. Those residential parcel centroids that intersect the flood zones were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction. This is shown in Table 4-77.

Table 4-77 Tri-City Planning Area – Improved Residential Parcels and Population by FEMA DFIRM Flood Zone by Jurisdiction

Jurisdiction	1% Annual Chance		0.2% Annual Chance	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Fremont	280	837	3,667	10,964
City of Newark	258	857	2,050	6,806
City of Union City	356	1,200	252	849

Source: FEMA DFIRM 12/21/2018, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023, 2020 US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City (3.37).

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums as well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

Structures

Certain structures in the Tri-City Planning Area are at risk of DFIRM flooding and primarily include those structures located within the 1% and 0.2% annual chance floodplains. GIS was used to determine the possible impacts of flooding on parcels and structures within the Planning Area. Table 4-78 shows parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the Planning area. This is shown for the 1% and 0.2% annual chance flood zones, as well as for those properties that fall outside of the mapped FEMA DFIRM flood zones.

Table 4-78 Tri-City Planning Area – Count and Value of Parcels (and Structures) in FEMA DFIRM 1% and 0.2% Annual Chance Flood Zones by Jurisdiction

Jurisdiction / Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
1% Annual Chance Flood Hazard	934	406	$414,526,782	$748,428,979	$859,718,876	$2,022,674,637
0.2% Annual Chance Flood Hazard	4,684	4,161	$1,990,481,907	$3,064,142,751	$2,484,150,767	$7,538,775,425
Other Areas	78,629	73,564	$20,306,306,743	$41,644,070,893	$24,851,695,009	$86,802,072,645
Fremont Total	**84,247**	**78,131**	**$22,711,315,432**	**$45,456,642,623**	**$28,195,564,652**	**$96,363,522,707**
Newark						
1% Annual Chance Flood Hazard	850	285	$409,592,873	$591,325,221	$681,200,593	$1,682,118,687
0.2% Annual Chance Flood Hazard	2,301	2,080	$561,495,519	$1,263,386,061	$821,589,229	$2,646,470,809
Other Areas	14,007	13,021	$3,218,815,821	$6,369,551,848	$3,989,939,277	$13,578,306,946
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**
Union City						
1% Annual Chance Flood Hazard	498	386	$174,623,202	$389,391,236	$303,384,322	$867,398,760
0.2% Annual Chance Flood Hazard	273	255	$74,226,171	$151,700,109	$78,185,120	$304,111,400
Other Areas	17,831	16,848	$3,747,943,216	$8,120,663,111	$5,049,837,749	$16,918,444,076
Union City Total	**18,602**	**17,489**	**$3,996,792,589**	**$8,661,754,456**	**$5,431,407,191**	**$18,089,954,236**
Alameda County Water District (Service Territory)						
1% Annual Chance Flood Hazard	2,428	1,129	$1,061,497,211	$1,796,381,645	$1,915,191,863	$4,773,070,719
0.2% Annual Chance Flood Hazard	7,269	6,498	$2,626,264,042	$4,479,234,478	$3,383,930,673	$10,489,429,193
Other Areas	110,180	103,382	$27,213,412,011	$56,142,706,107	$33,945,020,501	$117,301,138,619

Jurisdiction / Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Alameda County Water District (Service Territory) Total	**119,877**	**111,009**	**$30,901,173,264**	**$62,418,322,230**	**$39,244,143,037**	**$132,563,638,531**
Union Sanitary District (Service Territory)						
1% Annual Chance Flood Hazard	1,992	1,070	$947,347,736	$1,738,439,645	$1,857,886,250	$4,543,673,631
0.2% Annual Chance Flood Hazard	7,254	6,494	$2,615,013,887	$4,477,575,346	$3,383,035,205	$10,475,624,438
Other Areas	110,114	103,395	$27,182,838,969	$56,086,909,305	$33,861,914,641	$117,131,662,915
Union Sanitary District (Service Territory) Total	**119,360**	**110,959**	**$30,745,200,592**	**$62,302,924,296**	**$39,102,836,096**	**$132,150,960,984**

Source: FEMA 12/21/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)
*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone
**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table 4-79 shows Planning Area loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones. More detailed tables and discussions can be found in each jurisdiction's respective annex to this Base Plan.

Table 4-79 Tri-City Planning Area – FEMA DFIRM Flood Loss Estimates by Jurisdiction

Jurisdiction/ Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
Fremont							
1% Annual Chance Flood Hazard	934	406	$748,428,979	$859,718,876	$1,608,147,855	$321,629,571	0.47%
0.2% Annual Chance Flood Hazard	4,684	4,161	$3,064,142,751	$2,484,150,767	$5,548,293,518	$1,109,658,704	1.63%
Other Areas	78,629	73,564	$41,644,070,893	$24,851,695,009	$66,495,765,902	$13,299,153,180	19.51%
Fremont Total	**84,247**	**78,131**	**$45,456,642,623**	**$28,195,564,652**	**$73,652,207,275**	**$14,730,441,455**	**21.61%**

Jurisdiction/ Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
Newark							
1% Annual Chance Flood Hazard	850	285	$591,325,221	$681,200,593	$1,272,525,814	$254,505,163	2.05%
0.2% Annual Chance Flood Hazard	2,301	2,080	$1,263,386,061	$821,589,229	$2,084,975,290	$416,995,058	3.36%
Other Areas	14,007	13,021	$6,369,551,848	$3,989,939,277	$10,359,491,125	$2,071,898,225	16.69%
Newark Total	**17,158**	**15,386**	**$8,224,263,130**	**$5,492,729,099**	**$13,716,992,229**	**$2,743,398,446**	**22.10%**
Union City							
1% Annual Chance Flood Hazard	498	386	$389,391,236	$303,384,322	$692,775,558	$138,555,112	1.09%
0.2% Annual Chance Flood Hazard	273	255	$151,700,109	$78,185,120	$229,885,229	$45,977,046	0.36%
Other Areas	17,831	16,848	$8,120,663,111	$5,049,837,749	$13,170,500,860	$2,634,100,172	20.81%
Union City Total	**18,602**	**17,489**	**$8,661,754,456**	**$5,431,407,191**	**$14,093,161,647**	**$2,818,632,329**	**22.27%**
Alameda County Water District (Service Territory)							
1% Annual Chance Flood Hazard	2,428	1,129	$1,796,381,645	$1,915,191,863	$3,711,573,508	$742,314,702	0.80%
0.2% Annual Chance Flood Hazard	7,269	6,498	$4,479,234,478	$3,383,930,673	$7,863,165,151	$1,572,633,030	1.69%
Other Areas	110,180	103,382	$56,142,706,107	$33,945,020,501	$90,087,726,608	$18,017,545,322	19.31%
Alameda County Water District (Service Territory) Total	**119,877**	**111,009**	**$62,418,322,230**	**$39,244,143,037**	**$101,662,465,267**	**$20,332,493,053**	**21.79%**
Union Sanitary District (Service Territory)							
1% Annual Chance Flood Hazard	1,992	1,070	$1,738,439,645	$1,857,886,250	$3,596,325,895	$719,265,179	0.77%
0.2% Annual Chance Flood Hazard	7,254	6,494	$4,477,575,346	$3,383,035,205	$7,860,610,551	$1,572,122,110	1.69%
Other Areas	110,114	103,395	$56,086,909,305	$33,861,914,641	$89,948,823,946	$17,989,764,789	19.33%

Jurisdiction/ Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
Union Sanitary District (Service Territory) Total	**119,360**	**110,959**	**$62,302,924,296**	**$39,102,836,096**	**$101,405,760,392**	**$20,281,152,078**	**21.80%**

Source: FEMA 12/21/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)
*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone
**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Insurance Coverage, Claims Paid, and Repetitive Losses

Standard property insurance does not include flood coverage because of the relatively high risk. The NFIP provides flood insurance to residents in those communities that participate in the NFIP. Federal financial assistance requires the purchase of flood for structures located within a 100-year floodplain – a requirement that affects nearly all mortgages financed through commercial lending institutions. Flood insurance is also recommended for all structures protected by levees, even if not mapped within a floodplain.

Each City in the Planning Area participates in the National Flood Insurance Program. The two Districts are not eligible jurisdictions for purposes of the NFIP. A summary of insurance coverages in each city can be found in Table 4-80. More details can be found in each respective city's annex to this Base Plan.

Table 4-80 Tri-City Planning Area - Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain by City Jurisdictions

Jurisdiction	Improved Parcels in SFHA (1% Annual Chance) Floodplain*	Insurance Policies in the SFHA (1% Annual Chance) Floodplain	Percentage of 1% Annual Chance Floodplain Parcels Currently Insured
City of Fremont	406	86	21.2%
City of Newark	285	13	4.6%
City of Union City	386	35	9.1%

Source: FEMA 12/21/2018 DFIRM, FEMA CIS

Critical Facilities and Infrastructure, and Community Lifelines

Flooding presents a threat to critical facilities and infrastructure, and community lifelines. Critical infrastructure plays an immensely important role in our communities. As previously noted, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. The following GIS analysis

identifies critical facilities and infrastructure at risk to 1% and 0.2% annual chance flooding, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

1% and 0.2% annual chance flooding presents a threat to life and property, including community lifelines in the Planning Area. Community lifelines that would be vulnerable to flooding include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. During large events, these services may become stretched.
- **Food, Hydration, and Shelter -** Public health can also be at risk from flooding. Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water.
- **Health and Medical** – Loss of life and injuries can occur during significant flood events, Flooding may complicate the ability to transport the injured possibly requiring rerouting of injured to other facilities.
- **Energy** – Floods can cause power grid issues and lead to power outages. During extreme flood events gas lines may break or otherwise be damaged from erosion and debris in floodwaters.
- **Communications** – Communication infrastructure can be inundated by a flood event causing damage and disruption in service. As well an influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about lane and road closures, washouts, debris on roads, and requirements for evacuations or sheltering.
- **Transportation** – Transport networks can be affected, such as flood damage to bridges, railways and roads. This can cause lane and road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents and impact evacuation routes. Life safety can also be an issue on flooded roads.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these times can be comingles with flood waters, contaminate drinking water, as well as create additional exposures to the environment.
- **Water Systems** – Floods can affect the ability for water and wastewater systems to operate, since many are located near flood zones.

Generally, even major flood events are temporary events with flood waters receding back to pre-storm levels at the conclusion of the storm. However, depending on the location, duration, and magnitude and severity of any given flood event, some of these community lifelines may be overwhelmed in the short term.

Natural, Historic, and Cultural Resources

Large flood events can affect natural, historic, and cultural resources. There are a number of ways floodwaters can impact natural resources and the environment: Wildlife habitats can be destroyed by

floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the flooded areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme flood events. Any of these resources that fall in the flood zones would be vulnerable.

Economic Assets and Community Activities of Value

Major flood events could affect any economic asset that lies in the floodplain and can have long lasting effects. This could cause those businesses and economic assets within these areas to close or relocate. This could cause temporary or permanent loss of sales tax revenue. These events can also affect those economic assets outside of the floodplain, at least in the short term until the Planning Area has sufficiently recovered.

Impacts from Flood: 1% and 0.2% Annual Chance Flood

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Large flood events, including those associated with 1% and 0.2% annual chance floods, can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. People may be swept away in floodwaters, causing injuries or deaths. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Structures can be damaged directly from floodwaters and can also be damaged from trees falling as a result of water-saturated soils. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services causing power outages. The interruption of power causes major problems and can result in the closure of governmental offices and community businesses. Public schools may also be required to close or be placed on a delayed start schedule. Roads can be damaged and closed, causing safety and evacuation issues.

Standing water can cause damage to crops, roads, foundations, and electrical circuits. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

Health Hazards from Flooding

According to FEMA, certain health hazards are also common to flood events. While such problems are often not reported, three general types of health hazards accompany floods. The first comes from the water itself. Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm, and industrial chemicals. Pastures and areas where cattle and other livestock are kept or their wastes are stored can contribute polluted waters to the receiving streams.

Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as e. coli and other disease-causing agents.

The second type of health problem arises after most of the water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet areas of a building that have not been properly cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly.

Another health hazard occurs when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If a water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

The third problem is the long-term psychological impact of having been through a flood and seeing one's home damaged and irreplaceable keepsakes destroyed. The cost and labor needed to repair a flood-damaged structure puts a severe strain on people, especially the unprepared and uninsured. There is also a long-term problem for those who know that their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Future Development

Flooding is taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.12. Flood: Localized/Stormwater

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Localized, stormwater flooding also occurs throughout the Tri-City Planning Area, primarily during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration. Flooding is more severe when previous rainfall has created saturated ground conditions. Storm drain culverts and drainage systems have a finite capacity. When rainfall exceeds this capacity, or the system is clogged, water accumulates in areas until it reaches a level of overland release. This type of flooding may occur when intense storms occur over areas of developed areas.

The Planning Area is traversed by several streams and drainages. The development that has occurred during the past has accentuated existing drainage problems and has increased the potential for localized flooding. Continued construction of new buildings increases the area of impermeable surface and thus the amount of storm water that flows through the Planning Area's storm drain systems.

Location and Extent

In the Tri-City Planning Area, numerous locations and roads throughout not included in the FEMA 1% and 0.2% annual chance floodplains are subject to flooding in heavy rains. These are discussed in each jurisdictional annex to this LHMP Update. In addition to flooding, damage to these areas during heavy storms includes pavement deterioration, washouts, landslides, debris areas, erosion, and downed trees. The frequency and type of damage or flooding that occurs varies from year to year, depending on the quantity of precipitation and runoff.

Vulnerable areas are mostly adjacent to creeks that flow through the Tri-City Planning Area; although other areas can be affected where water is conveyed and collected. There is no established scientific scale or measurement system for localized flooding. Localized flooding is generally measured by depth of flooding, volume of water, runoff velocity, and the area affected. Localized flooding often happens quickly and has a short speed of onset and short duration, with flood waters receding when the storm drainage system can catch up or when the water is absorbed into the ground.

Past Occurrences

Disaster Declaration History

There have been 19 state and 19 federal disaster declarations due to flooding (and localized flooding and heavy rains and storms) in Alameda County as shown in Table 4-81. These events caused localized flooding in the Tri-City Planning Area.

Table 4-81 Alameda County Disaster Declarations 1950-2023 from Flood

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	19	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (twice)

Source: Cal OES, FEMA

NCDC Events

The NCDC does not track localized flooding.

Planning Committee

The Planning Committee noted major events that occurred in 2017 and 2023 associated with the disaster declarations above. More detail on each jurisdictions previous events can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Highly Likely—Natural drainage systems located throughout the Tri-City Planning Area have a finite capacity to convey water. Likewise, storm drainage systems have a finite capacity generally based on the design criteria. When rainfall exceeds the capacity of natural and storm drainage systems or systems clog, water accumulates until it reaches a level of overland release. Due to aging and often undersized infrastructure, this type of flooding will continue to occur annually during heavy rains.

Climate Change and Localized Flood

Cal Adapt future precipitation projections were shown in Figure 4-30 in Section 4.3.4. While average annual rainfall may decrease slightly, the intensity of individual rainfall events is likely to increase during the 21st century, increasing the likelihood of overwhelming stormwater systems built to historical rainfall averages. This makes localized flooding more likely.

Vulnerability Assessment

Vulnerability—Medium

Flood vulnerability and their impacts vary by location and severity of any given flood event and will likely only affect certain areas of the Planning Area during specific times. Based on the risk assessment, it is evident that floods will continue to have potentially significant economic impacts to certain areas of the Tri-City Planning Area. However, while flooding can cause significant impacts depending on the duration and volume of precipitation and the drainage in any given area, many of the floods in the Planning Area are minor, localized flood events that are more of a nuisance than a disaster.

Many areas of the Planning Area are at some measure of vulnerability to localized flooding. An assessment of a community's vulnerability to localized flood begins with an understanding of local exposure to localized flooding. This is included in the discussion of the Planning Area's Assets at Risk to this hazard.

Assets at Risk

Assets at risk from localized flood include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

People and populations are traditionally not highly vulnerable to localized flooding, but their structures and contents can be at risk. Localized flooding may also cause transportation issues as roads and lanes are impacted or closed and affect the ability for people to travel throughout the Planning Area.

Structures

Structures in areas with localized flooding can be affected if floodwaters intrude into the structure. Structures in low lying areas, or those with basements can be at greater risk. Buildings with older foundations that are prone to water intrusion are also at greater risk. Once water finds its way into a structure, it tends to continue to do so until the path that brings water into a structure is mitigated.

Critical Facilities and Infrastructure, and Community Lifelines

Localized flooding, while often more of a nuisance, can cause damage to critical facilities and infrastructure during a heavy rain and storm event. Any facility that experiences localized flooding can be impacted. Utilities and other critical infrastructure can all be affected, causing interruptions in service until repairs can be made. For example, water and wastewater systems can be vulnerable to heavy rains and flood events. Rainfall creates a high water table, surging streams and creeks, and saturates soil. Infiltration of stormwater into water and wastewater systems may occur and presents a threat to public health and safety, when the infrastructure is no longer able to meet operational needs and local demands.

Due to the relatively minor nature of localized flooding, community lifelines are unlikely to be overwhelmed. There may be minor vulnerabilities to the following:

- **Safety and Security** – Law Enforcement/Security, Fire Service, and Community Safety officials may be needed to close roads and redirect traffic during localized flood events. These agencies may also experience flooded roads when responding to emergencies.
- **Communications** – Unless directly affected by flooding, communication systems are not likely to be impacted. Warnings and Messaging may be required to reroute traffic away from localized flooding areas.
- **Transportation** – Highways, roads, and bridges may be temporarily blocked until localized floodwaters recede.
- **Water Systems** – Water and wastewater systems can be infiltrated during localized flooding events. Stormwater drainage systems are often undersized and inadequate to convey the volume of flood waters.

Natural, Historic, and Cultural Resources

Natural resource assets may have some vulnerabilities to localized flood during major storm events, but can benefit from floodwaters, often by design. Many parks and green spaces are designed to take overflow water and release it into the underlying soils and natural areas. Wetlands areas in the Planning Area actually help reduce the risk of flooding, as they can absorb excess rainfall that would have to be drained away from impervious surfaces. Flooding can provide many benefits to the natural environment, including recharging wetlands and groundwater, increasing fish production, creating wildlife habitat, and rejuvenating soil fertility. These smaller localized flooding events often provide more benefits to the environment in comparison to negative impacts associated with large flood events. Historic and cultural resources may be at some measure of vulnerability if they are located in areas subject to repeated localized flooding.

Economic Assets and Community Activities of Value

Localized flooding occurs on an annual basis throughout the Tri-City Planning Area during storm events. Most of these events have limited impacts and include those associated with localized flooding due to undersized drainage systems, affecting nearby roads, structures, and other nearby assets. Unless directly affected by localized flooding, these events are unlikely to affect the Planning Area's key economic assets.

Community activities of value may have minor vulnerabilities if a localized flood event were to occur during the activity. This may cause the activity to be relocated, cancelled, or rescheduled.

Impacts from Localized Flood

Primary concerns associated with stormwater flooding include impacts to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to crops, roads, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Life safety issues from localized flooding would be more limited. The amount and type of damage or flooding that occurs varies from year to year and from storm to storm, depending on the quantity of precipitation and runoff. Localized flooding impacts may be exacerbated in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

Impacts may be exacerbated in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

More detail on each jurisdiction's previous events can be found in their respective annexes to this LHMP Update.

Future Development

Localized flooding is taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.13. Landslide

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

Like its earthquake-generating faults, California's mountainous terrain is a consequence of dynamic geologic processes in operation as the North American Plate grinds past the Pacific Plate. According to the CGS, a landslide is a general term for a variety of mass-movement processes that generate a down-slope movement of mud, soil, rock, and/or vegetation. Landslides are classified into many different types based on form and type of movement. They range from slow-moving rotational slumps and earth flows, which can slowly distress structures but are less threatening to personal safety, to fast-moving rock avalanches and debris flows that are a serious threat to structures and have been responsible for most fatalities during landslide events. For the purposes of this LHMP Update, the term landslide includes mudslides, debris flows, and rockfalls that tend to occur suddenly; as well as hillside erosion, which is a similar process that tends to occur on smaller scales and more gradually but can exacerbate landslide events.

Landslides, debris flows and mudslides are closely related to flooding, as both processes are related to precipitation, runoff, and the saturation of ground by water. In addition, landslides, mud flows, and debris flows can occur on small, steep stream channels and are often mistaken for floods. However, landslide events may be much more destructive than floods because of their higher densities, high debris loads, and high velocities.

Natural conditions that contribute to landslide, mudslides, debris flows, hillside and streambank erosion, include the following:

- Degree of slope
- Water (heavy rain, river flows, or wave action)
- Unconsolidated soil or soft rock and sediments
- Lack of vegetation (no stabilizing root structure)
- Previous wildfires and other forest disturbances (discussed in Section 4.3.17)
- Road building, excavation, and grading
- Earthquake

The 2023 State of California Hazard Mitigation Plan noted that more than one third of California is mountainous terrain that generally trends parallel to the coast, forming a barrier that captures moisture from

offshore storms originating in the Gulf of Alaska and Mexico. Steep topography, weak rocks, heavy winter rains, and occasional earthquakes all lead to slope failures more frequently than would otherwise occur under gravity alone. This is true in the sloped areas bordering the Planning Area where the topography is characterized by rolling hills and ridges.

Location and Extent

Landslides can be expected in areas with steep slopes and weak soils. It can also occur in areas where erosion has previously occurred. Both winter storms (precipitation-induced) and earthquake triggered landslides tend to occur in or near places that have experienced previous landslides. However, landslides may also occur in other locations over time.

Figure 4-109 shows the CGS areas at susceptible to deep seated landslides. The legend on Figure 4-109 shows the susceptibility scale (from 0-X with 0 being the least and X being the most susceptible) that the CGS uses to show the susceptibility of landslides. It is a primarily a combination of slope class and rock strength. Geographic extents of these classes for the Planning Area are shown on Table 4-82. According to the 2023 State Hazard Mitigation Plan, the susceptibility classes were further categorized into Very High (susceptibility class X) and High (susceptibility classes VII, VIII, & IX) for exposure analysis. The rest of the classes were not categorized. CGS mapping indicates that the eastern portions of the Planning Area and surrounding area are at high to very high susceptibility areas for landslides. This can be seen in the darker orange and red colors. The speed of onset of landslide is often short, especially in post-wildfire burn scar areas, but it can also take years for a slope to fail. Landslide duration is usually short, though digging out and repairing landslide areas can take some time.

Figure 4-109 Tri-City Planning Area – Susceptibility to Deep Seated Landslides

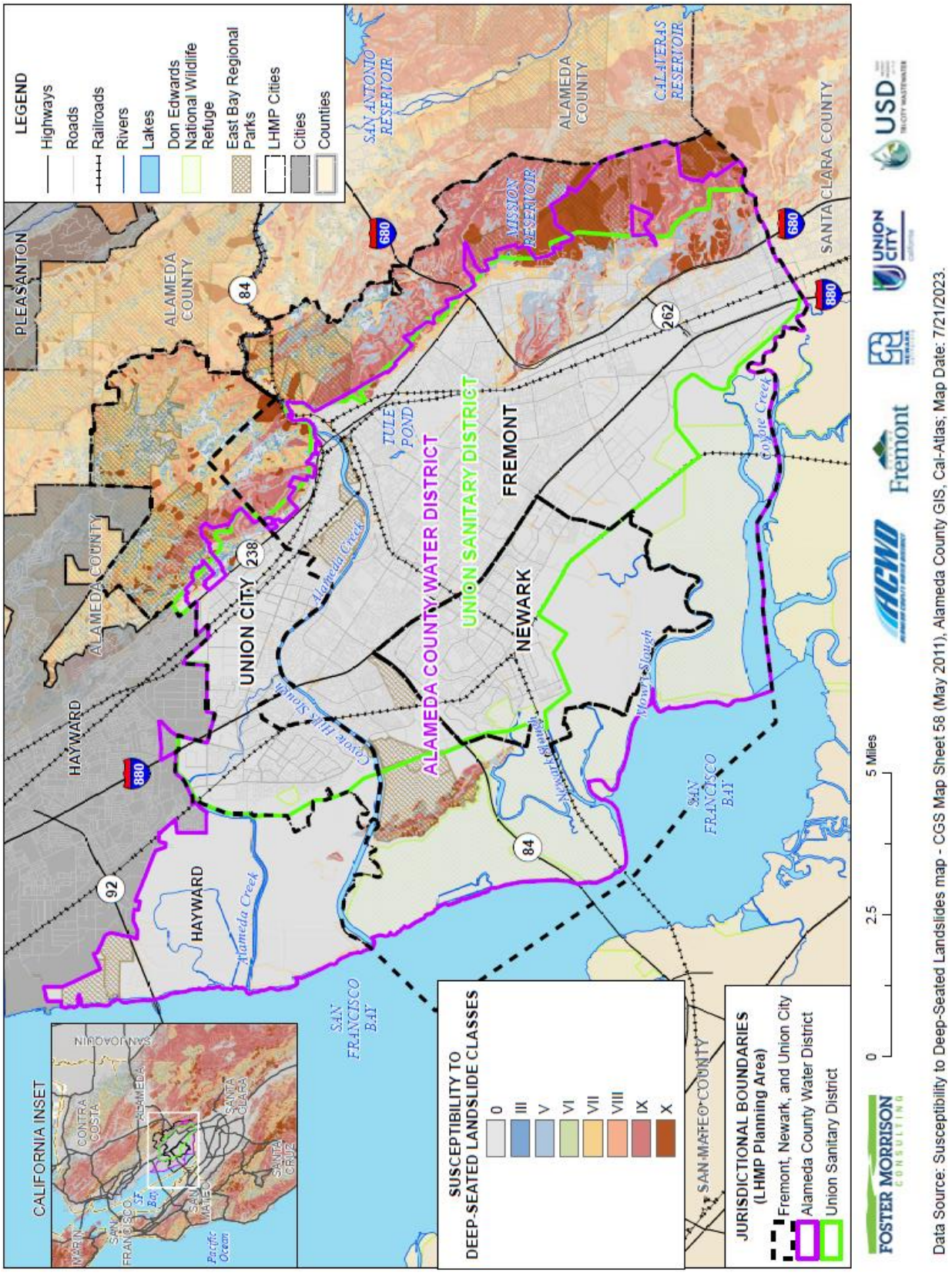


Table 4-82 Tri-City Planning Area – Susceptibility to Deep Seated Landslides Geographical Extents by Class and Jurisdiction

Jurisdiction/ Susceptibility to Deep-Seated Landslide Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
0	62,158.14	81.8%	43,375.35	93.0%	18,782.79	64.0%
III	366.77	0.5%	55.77	0.1%	311.00	1.1%
IX	4,850.10	6.4%	868.98	1.9%	3,981.12	13.6%
V	1,915.73	2.5%	745.99	1.6%	1,169.74	4.0%
VI	376.85	0.5%	39.62	0.1%	337.22	1.1%
VII	2,091.28	2.8%	776.29	1.7%	1,314.98	4.5%
VIII	2,014.88	2.7%	520.81	1.1%	1,494.07	5.1%
X	2,195.42	2.9%	237.37	0.5%	1,958.06	6.7%
Fremont Total	**75,969.16**	**100.0%**	**46,620.18**	**100.0%**	**29,348.98**	**100.0%**
Newark						
0	13,256.48	99.1%	9,489.94	99.7%	3,766.54	97.5%
III	0	0.0%	0	0.0%	0	0.0%
IX	2.79	0.0%	0.22	0.0%	2.57	0.1%
V	21.10	0.2%	10.96	0.1%	10.13	0.3%
VI	0	0.0%	0	0.0%	0	0.0%
VII	96.18	0.7%	15.53	0.2%	80.65	2.1%
VIII	2.96	0.0%	0.71	0.0%	2.25	0.1%
X	0	0.0%	0	0.0%	0	0.0%
Newark Total	**13,379.51**	**100.0%**	**9,517.37**	**100.0%**	**3,862.14**	**100.0%**
Union City						
0	11,105.35	66.8%	8,753.13	93.7%	2,352.22	32.3%
III	756.11	4.5%	48.92	0.5%	707.19	9.7%
IX	409.40	2.5%	108.46	1.2%	300.94	4.1%
V	101.81	0.6%	35.71	0.4%	66.10	0.9%
VI	885.21	5.3%	59.13	0.6%	826.09	11.3%
VII	1,918.21	11.5%	238.89	2.6%	1,679.31	23.0%
VIII	1,103.02	6.6%	57.25	0.6%	1,045.77	14.3%
X	350.52	2.1%	39.79	0.4%	310.74	4.3%
Union City Total	**16,629.64**	**100.0%**	**9,341.28**	**100.0%**	**7,288.36**	**100.0%**

Jurisdiction/ Susceptibility to Deep-Seated Landslide Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Alameda County Water District (Service Territory)						
0	90,701.58	92.2%	61,601.08	96.3%	29,100.50	84.5%
III	102.00	0.1%	28.84	0.0%	73.16	0.2%
IX	2,142.47	2.2%	290.77	0.5%	1,851.70	5.4%
V	1,187.03	1.2%	600.47	0.9%	586.56	1.7%
VI	92.22	0.1%	30.74	0.0%	61.48	0.2%
VII	1,760.77	1.8%	887.26	1.4%	873.51	2.5%
VIII	915.27	0.9%	310.39	0.5%	604.88	1.8%
X	1,490.04	1.5%	190.90	0.3%	1,299.14	3.8%
Alameda County Water District Total	**98,391.37**	**100.0%**	**63,940.44**	**100.0%**	**34,450.94**	**100.0%**
Union Sanitary District (Service Territory)						
0	72,371.73	94.2%	60,901.80	96.2%	11,469.93	84.7%
III	104.90	0.1%	49.78	0.1%	55.12	0.4%
IX	796.47	1.0%	302.82	0.5%	493.65	3.6%
V	967.91	1.3%	596.92	0.9%	371.00	2.7%
VI	89.85	0.1%	49.00	0.1%	40.85	0.3%
VII	1,372.40	1.8%	907.01	1.4%	465.39	3.4%
VIII	623.76	0.8%	313.26	0.5%	310.49	2.3%
X	532.79	0.7%	196.47	0.3%	336.32	2.5%
Union Sanitary District Total	**76,859.81**	**100.0%**	**63,317.06**	**100.0%**	**13,542.76**	**100.0%**

Source: CGS

Past Occurrences

Disaster Declaration History

There have been no disaster declarations associated with landslides in Alameda County, as shown in Table 4-5. However, many of the flood and heavy rain and storm disaster declarations likely resulted in some landslide issues in or around the Tri-City Planning area.

NCDC Events

The NCDC contains no records for landslides in Alameda County.

Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Likely— There are multiple areas with vulnerability to landslides, mudslides, and debris flows to the Tri-City Planning Area. Due to the topography in and around the Planning Area and the rainfall the area receives during the winter, future occurrences of landslide, mudslide, and debris flow will occur annually and are considered likely.

Climate Change and Landslides

According to the 2021 CAS and Cal-Adapt, increased precipitation may result from climate change. Increased precipitation makes areas more vulnerable to landslide potential. More information on precipitation increases can be found in Section 4.3.4.

Vulnerability Assessment

Vulnerability—Medium

Portions of the Tri-City Planning Area is at some measure of vulnerability to landslide. An assessment of a community's vulnerability to landslide begins with an understanding of local exposure to landslide. This is included in the discussion of the Planning Area's Assets at Risk to this hazard.

Assets at Risk

Assets at risk from landslide include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

Methodology

The 2011 California Geologic Survey Deep Seated Landslide Susceptibility data was obtained for the Tri-City Planning Area. The 2023 Alameda County Parcel/Assessor Data was used as the basis for the inventory of all parcels within the Tri-City Planning Area. GIS was used to overlay the landslide hazard layer onto the parcel layer, and where the landslide susceptibility classes intersected a parcel centroid, it was assigned with that hazard class for the entire parcel.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

All populations located within areas of landslide susceptibility, especially in the High to Very High hazard areas (i.e., Classes VII to X) are at some vulnerability to landslide. This includes those people residing in

these landslide potential areas as well as those that might reside or work within the landslide run out areas. People residing in these areas may also be cut off from transportation routes if roads and streets providing a means of ingress and egress are impacted. Certain vulnerable populations may be at greater risk due to the often sudden onset of a landslide event and include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

Tri-City Planning Area residents that live in the High and Very High landslide susceptibility areas are often the most vulnerable, but those who live in in the landslide run out areas (which are not mapped) are also vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to Planning Area's residential population residing within these hazard areas, an analysis was conducted of those who physically reside in the mapped landslide susceptibility areas. The CGS Susceptibility to Deep Seated Landslide maps were overlayed on the parcel layer and linked to the assessor data. Those residential parcel centroids that intersect the High or Very High risk areas (Class VII or higher) were counted and multiplied by the 2020 Census Bureau average household factors each jurisdiction in the Planning Area. Analysis results are shown in Table 4-83.

Table 4-83 Tri-City Planning Area – Improved Residential Parcels and Population in Susceptibility to Deep Seated Landslides - Classes VII, VIII, IX, and X by Jurisdiction

Deep Seated Landslide Class/Jurisdiction	Improved Residential Parcels	Population at Risk
Class VIII		
City of Fremont	558	1,668
City of Newark	43	143
City of Union City	52	175
Class IX		
City of Fremont	283	846
City of Newark	84	279
City of Union City	36	121
Class X		
City of Fremont	218	652
City of Newark	8	27
City of Union City	26	88

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), 2020 US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37.

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums and well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

Structures

Landslides can affect the built environment of the Tri-City Planning Area and those structures located within the High to Very High hazard areas (i.e., Classes VII to X) are especially vulnerable, as are the structures located within the landslide run out areas. The CGS Deep Seated Landslide Susceptibility layer was overlaid with the County parcel (structure) layer in GIS and linked to the assessor data. The mapped landslide areas are shown on Figure 4-109. Table 4-84 summarizes parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the Planning Area for deep seated landslide classes.

Table 4-84 Tri-City Planning Area – Count and Value of Parcels (and Structures) Susceptible to Deep Seated Landslide by Jurisdiction

Jurisdiction / Susceptibility to Deep-Seated Landslide Class	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
0	78,271	72,828	$20,274,884,322	$40,769,786,789	$25,796,108,004	$86,840,779,115
III	33	24	$8,887,389	$14,973,551	$7,486,775	$31,347,715
V	1,798	1,677	$748,055,015	$1,519,712,931	$760,785,797	$3,028,553,743
VI	37	24	$10,230,044	$20,455,557	$16,190,176	$46,875,777
VII	2,765	2,494	$1,012,771,725	$1,897,555,572	$997,713,067	$3,908,040,364
VIII	627	567	$288,901,531	$555,553,977	$276,730,452	$1,121,185,960
IX	438	292	$184,354,112	$313,256,137	$159,683,993	$657,294,242
X	297	225	$184,418,004	$365,348,109	$180,866,388	$730,632,501
Fremont Total	**84,266**	**78,131**	**$22,712,502,142**	**$45,456,642,623**	**$28,195,564,652**	**$96,364,709,417**
Newark						
0	16,945	15,248	$4,127,403,042	$8,152,660,662	$5,447,436,205	$17,727,499,909
V	95	43	$23,937,601	$22,690,382	$11,345,191	$57,973,174
VII	107	87	$35,823,015	$46,096,086	$32,539,703	$114,458,804
VIII	11	8	$2,740,555	$2,816,000	$1,408,000	$6,964,555
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**
Union City						
0	18,098	17,112	$3,898,436,147	$8,462,877,308	$5,303,614,153	$17,664,927,608
III	33	12	$3,022,570	$3,746,350	$1,974,459	$8,743,379
V	69	63	$16,063,999	$26,014,916	$13,007,455	$55,086,370
VI	28	7	$4,385,094	$59,129,379	$57,440,357	$120,954,830
VII	219	180	$41,042,182	$70,940,382	$35,538,544	$147,521,108

Jurisdiction / Susceptibility to Deep-Seated Landslide Class	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
VIII	68	53	$16,097,385	$17,958,145	$9,288,240	$43,343,770
IX	48	36	$14,098,205	$12,918,786	$6,459,390	$33,476,381
X	39	26	$3,647,007	$8,169,190	$4,084,593	$15,900,790
Union City Total	**18,602**	**17,489**	**$3,996,792,589**	**$8,661,754,456**	**$5,431,407,191**	**$18,089,954,236**
Alameda County Water District (Service Territory)						
0	113,442	105,253	$28,359,809,498	$57,504,883,472	$36,706,490,767	$122,571,183,737
III	41	34	$9,054,757	$16,303,932	$8,151,965	$33,510,654
V	1,938	1,775	$782,166,691	$1,565,813,628	$782,906,809	$3,130,887,128
VI	30	26	$10,902,851	$65,771,746	$60,999,485	$137,674,082
VII	3,030	2,744	$1,080,791,852	$2,008,423,621	$1,060,298,180	$4,149,513,653
VIII	679	620	$301,197,441	$571,156,540	$283,077,338	$1,155,431,319
IX	408	311	$172,850,096	$314,890,560	$159,421,744	$647,162,400
X	309	246	$184,400,078	$371,078,731	$182,796,749	$738,275,558
Alameda County Water District (Service Territory) Total	**119,877**	**111,009**	**$30,901,173,264**	**$62,418,322,230**	**$39,244,143,037**	**$132,563,638,531**
Union Sanitary District (Service Territory)						
0	113,024	105,230	$28,229,157,944	$57,404,356,724	$36,570,095,695	$122,203,610,363
III	42	35	$9,142,791	$16,506,501	$8,354,534	$34,003,826
V	1,881	1,747	$768,427,116	$1,552,232,728	$776,116,359	$3,096,776,203
VI	33	26	$10,961,827	$65,771,746	$60,999,485	$137,733,058
VII	3,016	2,746	$1,074,043,607	$2,011,364,273	$1,064,190,946	$4,149,598,826
VIII	668	617	$298,874,567	$564,701,573	$279,849,854	$1,143,425,994
IX	394	312	$169,660,241	$316,912,020	$160,432,474	$647,004,735
X	302	246	$184,932,499	$371,078,731	$182,796,749	$738,807,979
Union Sanitary District (Service Territory) Total	**119,360**	**110,959**	**$30,745,200,592**	**$62,302,924,296**	**$39,102,836,096**	**$132,150,960,984**

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure and Community Lifelines

Landslides present a threat to critical facilities and infrastructure, and community lifelines. The following analysis discusses critical facilities and infrastructure, followed by community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Community lifelines at risk to landslide include:

- **Safety and Security** – Many Planning Area personnel would be involved in response and recovery efforts. This includes police, fire, EMS, public works, and other personnel.
- **Food, Hydration, and Shelter** – As homes are damaged, shelter needs would significantly increase. Temporary housing would be to be established. Water supplies could be offline for an extended period. Residents, visitors and others caught in a large event would need to find sources of food and water until the Planning Area recovers.
- **Health and Medical** – Injuries and deaths can occur. This causes EMS calls and ER visits to spike. Transporting patients to medical facilities may be difficult. Depending on the extent of injuries and deaths the capacity of medical facilities could be strained and eventually overwhelmed.
- **Energy** – The power grid may be damaged from landslide. Fuel transportation may need to be delayed or rerouted, causing temporary shortages.
- **Communications** – Communications systems may be damaged during landslide events. Messaging boards and alerts need to be then put into place to ensure public safety and order.
- **Transportation** – Major damage can occur to roads and bridges in the Planning Area. Damage can also occur to rail lines and airports in and near the Planning Area. Roads may be closed due to damage, or to debris on the roads from earthquake events. These closures could be place for an extended period while debris clearing efforts are undertaken to allow repairs to be made.
- **Hazardous Material** – Hazardous materials facilities can be compromised during times of landslide events causing releases of contaminants into the environment. Natural gas pipelines can be affected by earthquakes. This can affect not only residents, but those who are charged with responding to or resolving the spill/rupture.
- **Water Systems** – Water, drainage, and wastewater systems can be damaged.

As shown on Figure 4-109, the Tri-City Planning Area has limited areas of landslide vulnerability, with most of these areas located in the foothills to the east. As such, impacts to community lifelines from landslides in the Planning Area would be limited. Community lifelines are not likely to be overwhelmed by a landslide event.

Natural, Historic, and Cultural Resources

Landslides can affect natural, historic, and cultural resources that lie in the landslide area, or the landslide run out area. Landslides can destroy large tracts of forest and open space areas, destroy wildlife habitat, and remove productive soils and vegetation from slopes. It can also fill in waterways, impact water quality,

and potentially affect flooding potential. Natural resources that fall in the High or Very High susceptibility classes shown on Figure 4-109 would be most vulnerable, as well as those in the run out areas. As shown on the map, this would include a relatively small area of the developed area, since most of this occurs in the undeveloped areas in the Planning Area.

Economic Assets and Community Activities of Value

Landslides can affect economic assets and community activities of value if they fall into the higher landslide susceptibility areas, the landslide run out areas, or if economic assets are cut off from transportation routes in the Planning Area. Very few, if any, economic assets would be at risk, Since most of the landslide risk is in the foothills area in the east of the Planning Area that is bordered by mostly residential homes, most economic assets in the Planning Area are unlikely to be affected. Very few community activities of value occur in areas threatened by landslide.

Impacts from Landslide

Any type of landslide may result in damages or complete destruction of buildings in their path, as well as deaths and injuries. Landslides can cause road blockages by depositing debris on road surfaces or road damage if the road surface itself slides downhill. Utility lines and pipes are also prone to breakage in slide areas. Large landslides can collapse into water bodies, causing tsunamis or seiches. Landslides can relocate river channels. Landslides and debris flows can also impact water quality and the storage capacity of surface water reservoirs used to store potable water.

Landslides can collapse into water bodies, causing tsunamis or seiches. In 1958, a magnitude 8 earthquake collapsed a hillside into Lituya Bay, Alaska, causing a water splash wave that reached 1,720 feet up a mountain slope, stripping all vegetation. A massive landslide into the Vaoint Reservoir in Italy in 1963 caused a water splash wave that swept 800 feet over the top of a dam, causing a major flood that killed an estimated 2,600 people below. Landslides can relocate river channels, as occurred during the Oso mudslide in Washington State in March 2014. This occurred in an area not considered landslide prone on local maps. Landslides and debris flows can impact water quality and the storage capacity of surface water reservoirs used to store potable water.

Landslides, debris flows, and mud flows impacts vary by location and severity of any given event and will likely only affect certain areas of the Planning Area susceptible to landslide. Based on the risk assessment, there is limited potential for significant landslides to occur in the Planning Area. Most, but not all, of the historic landslides in the Planning Area have been minor, localized events that are more of a nuisance than a disaster. Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

Future Development

Landslide, mudslide, and debris flows are taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.14. Levee Failure

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

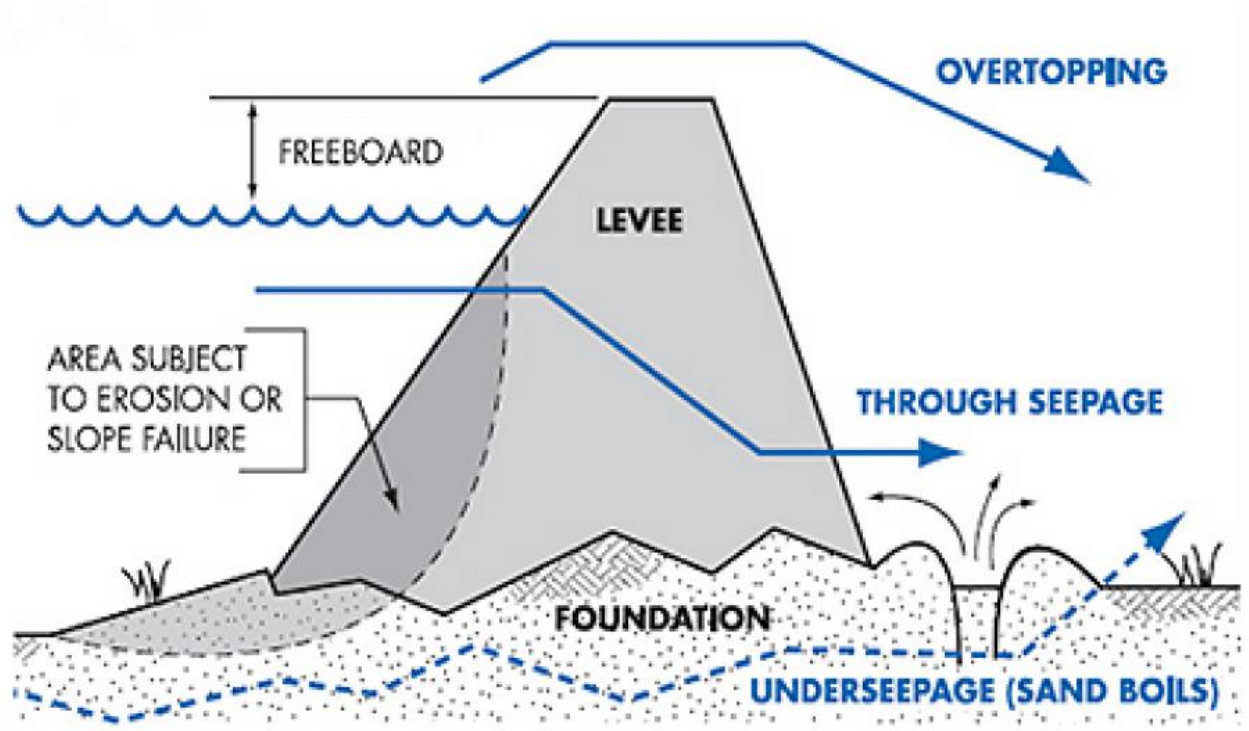
A levee is a raised area that runs along the banks of a stream or canal. Levees reinforce the banks and help prevent flooding by containing higher flow events to the main stream channel. By confining the flow to a narrower steam channel, levees can also increase the speed of the water. Levees can be natural or man-made. A natural levee is formed when sediment settles on the stream bank, raising the level of the land around the stream. Man-made levees are formed by the hauling of sediment and fill in order to protect the area behind the levee.

Levees can provide strong flood protection, but they are not failsafe. Levees are often designed to protect against a specific flood level and could be overtopped during severe weather events or a dam failure. Levees reduce, not eliminate, the risk to individuals and structures located behind them. A levee system failure or overtopping can create severe flooding and high-water velocities. It's important to remember that no levee provides protection from events for which it was not designed, and proper operation and maintenance are necessary to reduce the probability of failure.

Under-seepage refers to water flowing under the levee through the levee foundation materials, often emanating from the bottom of the landside slope and ground surface and extending landward from the landside toe of the levee. Through-seepage refers to water flowing through the levee prism directly, often emanating from the landside slope of the levee. Both conditions can lead to failure by several mechanisms, including excessive water pressures causing foundation heave and slope instabilities, slow progressing internal erosion, and piping leading to levee slumping.

Rodents burrowing into and compromising the levee system can also contribute to a levee failure as can erosion of the leveed area. Levee failure can also be caused by high winds creating wave action and high tides, especially combined with storm events. Figure 4-110 depicts the causes of levee failure.

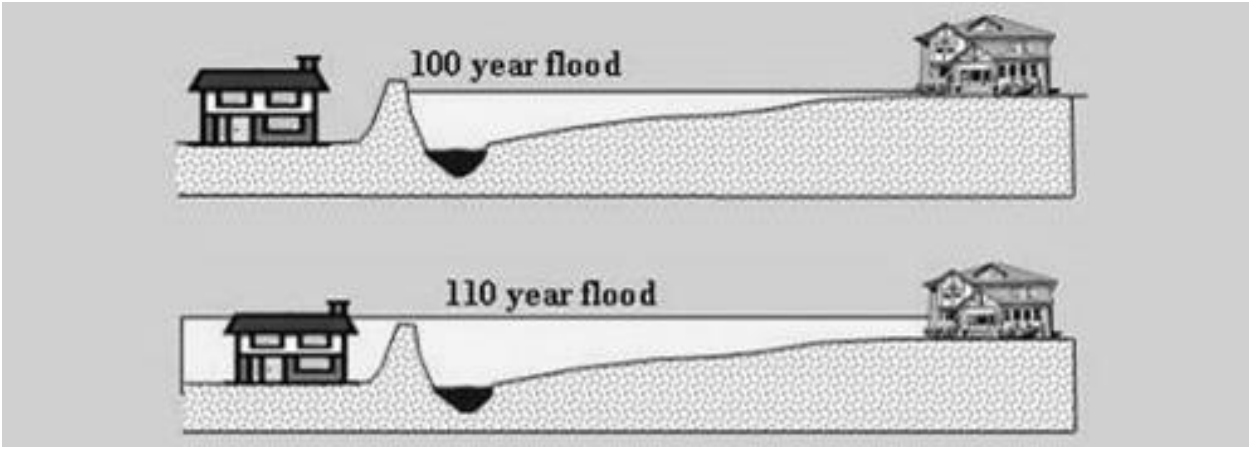
Figure 4-110 Potential Causes of Levee Failure



Source: USACE

Overtopping failure occurs when the flood water level rises above the crest of a levee. As shown in Figure 4-111, overtopping of levees can cause greater damage than a traditional flood due to the often, lower topography behind the levee.

Figure 4-111 Flooding from Levee Overtopping



Source: Levees in History: The Levee Challenge. Dr. Gerald E. Galloway, Jr., P.E., Ph.D., Water Policy Collaborative, University of Maryland, Visiting Scholar, USACE, IWR.

Location and Extent

The National Levee Database and the Alameda County FIS were searched for levee locations in and near the Tri-City Planning Area. According to the National Levee Database, there are 130 levees in Alameda County, many of which protect lands in the Tri-City Planning Area. This can be seen for the Tri-City Planning Area in Figure 4-112. The red lines indicate the levee segments. Certain of these levees are certified as providing protection from the 1% annual chance flood event. The areas behind these levees are noted by FEMA as X Protected by Levee Areas. These areas are shown on Figure 4-112 and detailed in Table 4-85.

Levee failure in the Planning Area would likely have a short onset, and the duration would be short. However, if the levee failed during an atmospheric river event, the duration could be prolonged.

Figure 4-112 Tri-City Planning Area– Levee Locations

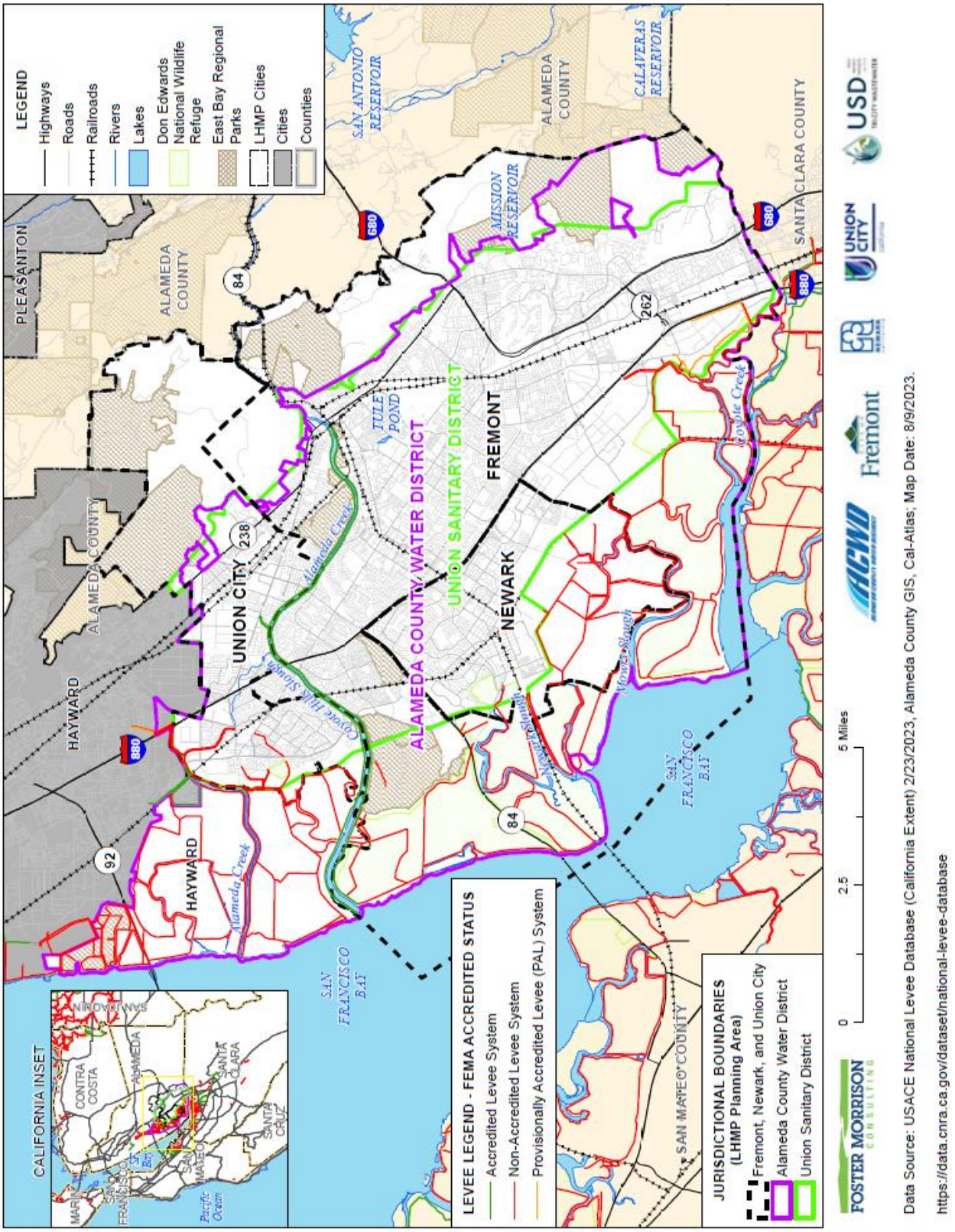


Figure 4-113 Tri-City Planning Area – FEMA DFIRM X Protected by Levee Flood Zone

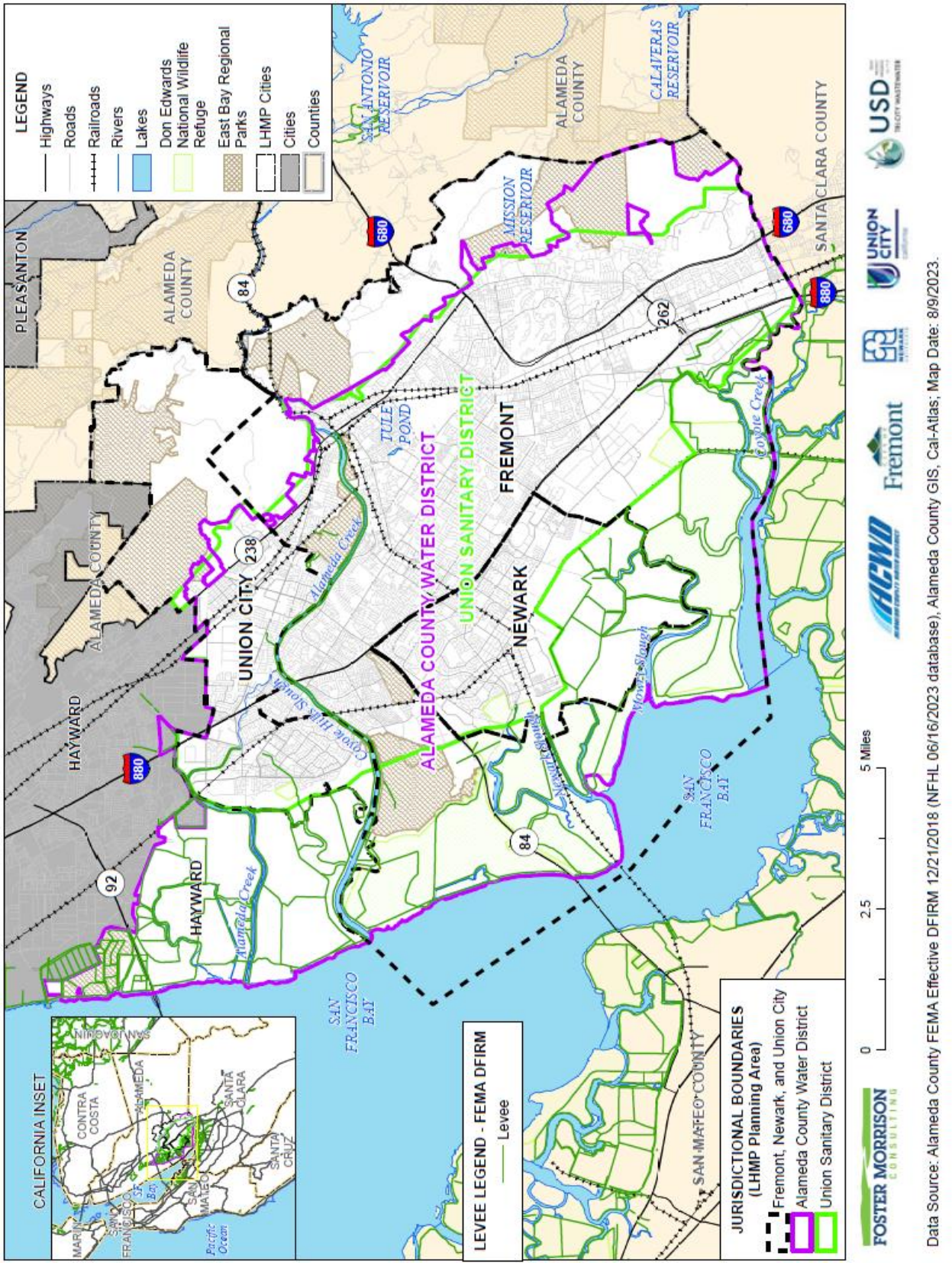


Table 4-85 Tri-City Planning Area – Geographical FEMA DFIRM X Protected by Levee Flood Zone by Jurisdiction

Jurisdiction / Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
X Protected by Levee	1,440	1.775%	1,318	2.826%	122	0.354%
Newark						
X Protected by Levee	0	0.00%	0	0.00%	0	0.00%
Union City						
X Protected by Levee	0	0.00%	0	0.00%	0	0.00%
Alameda County Water District						
X Protected by Levee	1,440	1.348%	1,318	2.060%	122	0.285%
Union Sanitary District						
X Protected by Levee	1,440	1.858%	1,318	2.080%	122	0.863%

Source: FEMA 12/21/2018 DFIRM

Past Occurrences

Disaster Declaration History

There have been no disaster declarations for levee failure in Alameda County as shown on Table 4-5.

NCDC Events

The NCDC does not track levee failure events.

Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Unlikely – The Planning Committee determined the likelihood of levee failure is occasional. This rating was in part determined due to issues surrounding ongoing maintenance of the levee system as well as many of the levees not being certified as providing protection against the 1% annual chance flood within the Planning Area. It was noted that other hazards like earthquakes, floods, and coastal flooding and sea level rise could increase the likelihood of future occurrence.

Climate Change and Levee Failure

In general, increased flood frequency in California is a predicted consequence of climate change. Mechanisms whereby climate change leads to an elevated flood risk include more extreme precipitation events and shifts in the seasonal timing of river flows. This threat may be particularly significant because recent estimates indicate the additional force exerted upon the levees is equivalent to the square of the water level rise. These extremes are most likely to occur during storm events, leading to more severe damage from waves and floods.

Vulnerability Assessment

Vulnerability—Medium

The probability of levee failure is increasing over time due to increased storms and flooding potential from global climate change. Levee failure flooding can occur as the result of partial or complete collapse of an impoundment, and often results from prolonged rainfall and flooding. A levee failure can range from a small uncontrolled release to a catastrophic failure. The primary danger associated with levee failure is the high velocity flooding of those properties downstream of the breach. Vulnerability to levee failures is generally confined to the areas subject to inundation downstream of the levee. In addition, levee failure can cause stream bank erosion, which can in some instances have effects worse than those of flooding itself.

Note: the analysis of Tri-City Planning Area vulnerability to levee failure in this section is primarily based on the X protected by Levee flood zone based on availability of data. The X Protected by Levee flood zone is part of the 0.2% annual chance floodplain, as the levee is certified by FEMA as protecting against the 1% annual chance flood. Other levees within the Planning Area were not analyzed due to the lack of available data. However, while not certified, these other levees provide some level of flood protection to surrounding areas and are also subject to failure during heavy storm and rain events.

Portions of the Tri-City Planning Area are at some measure of vulnerability to levee failure. An assessment of a community's vulnerability to levee failure begins with an understanding of local exposure to levee failure. This is included in the discussion of the Planning Area's Assets at Risk to this hazard. It should be noted that in the following sections, only the certified levees are analyzed.

Assets at Risk

Assets at risk from levee failure include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

Methodology

2023 Alameda County Parcel/Assessor Data was used as the basis for the Tri-City inventory of parcels, values, and acres. Alameda County has a FEMA effective DFIRM dated 12/21/2018, which was obtained from FEMA's National Flood Hazard Layer to perform the flood analysis. In some cases, there are parcels in multiple flood zones, such as Zone A, Zone X, or Shaded X. GIS was used to create a centroid, or point representing the center of the parcel polygon. DFIRM flood data was then overlaid on the parcel layer. For

the purposes of this analysis, the flood zone that intersected a parcel centroid was assigned the flood zone for the entire parcel. The parcels and associated values were segregated and analyzed in this fashion to determine parcels and values at risk to the flood hazard for the Tri-City Planning Area.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

Populations in the floodplains are at risk to flooding, including the X Protected by Levee flood zone. Certain vulnerable populations may be at greater risk to the effects of levee failure flooding. Certain vulnerable populations may be at a greater risk of a sudden levee failure, including the unsheltered, those with limited mobility and those that lack the resources to leave the area.

Planning Area residents that live in the X Protected by Levee flood zones are often the most vulnerable to certified levees Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To evaluate the population of residents of the Planning Area that live within the X Protected by Levee flood zone, the DFIRM flood zones were overlayed on the parcel layer and linked to the Assessor data. Those residential parcel centroids that intersect the X Protected by Levee flood zone were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction. Results are shown in Table 4-86.

Table 4-86 Tri-City Planning Area – Improved Residential Parcels and Population in FEMA DFIRM X Protected by Levee Flood Zone and Jurisdiction

Jurisdiction	X Protected by Levee	
	Improved Residential Parcels	Population at Risk
City of Fremont	0	0
City of Newark	0	0
City of Union City	0	0

Source: FEMA DFIRM 11/2/2018, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), 2020 US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City (3.37)

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums and well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

Structures

A levee failure can affect the built environment of the Tri-City Planning Area, with some structures in the Planning Area at risk to a levee failure event. GIS was used to determine the possible impacts of levee failure flooding from X Protected by Levee flood zones within the Planning Area. Table 4-87 shows the parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated

content replacement values, and total values by property use in the Planning Area that fall in FEMA X Protected by Levee flood zone.

Table 4-87 Tri-City Planning Area – Count and Value of Parcels (and Structures) in FEMA DFIRM X Protected by Levee Flood Zone by Jurisdiction

Jurisdiction / Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
X Protected by Levee	194	179	$441,856,625	$582,713,918	$824,216,164	$1,848,786,707
Newark						
X Protected by Levee	0	0	$0	$0	$0	$0
Union City						
X Protected by Levee	0	0	$0	$0	$0	$0
Alameda County Water District (Service Territory)						
X Protected by Levee	194	179	$441,856,625	$582,713,918	$824,216,164	$1,848,786,707
Union Sanitary District (Service Territory)						
X Protected by Levee	194	179	$441,856,625	$582,713,918	$824,216,164	$1,848,786,707

Source: FEMA 11/2/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)
*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

Critical Facilities and Infrastructure, and Community Lifelines

Levee failure flooding presents a threat to critical facilities and infrastructure, and community lifelines. Critical infrastructure failures such as loss of power, impacts to potable and wastewater treatment systems, and road and bridge failures can all be caused by levee failure events, depending on the magnitude of the resulting flood. The following analysis discusses critical facilities and infrastructure at risk to levee failure flooding, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Levee failure flooding presents a threat to life and property, including community lifelines in the Tri-City Planning Area. Community lifelines that would be vulnerable to levee failure flooding include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of levee failure and flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies which at times may stretch their capacity.
- **Food, Hydration, Shelter –** Floodwater is often contaminated with sewage and other contaminants, which can lead to illness and affect clean drinking water. These life safety and public health issues can tax the ability of the health and medical systems to provide necessary services, even if only temporarily.
- **Health, and Medical** – Loss of life and injuries can occur during significant levee failure events. Flooding may complicate the ability to transport the injured possibly requiring rerouting of injured to other facilities. Public health can also be at risk from flooding.
- **Energy** – Levee failure flooding could affect power distribution locations in the Planning Area. Power outages may occur. Fuel supplies may be temporarily cut off until levees are repaired (allowing for transport of fuel to resume).
- **Communications** – Communication infrastructure can be inundated by a levee failure event causing damage and an interruption in service. As well, an influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems may need to be deployed during these times to let the public know about road and lane closures, washouts, and debris or flooding on roads.
- **Transportation** – Highways and local roads may experience levee failure flooding. This can cause lane or road closures, bridge closures and significantly limit mobility in the Planning Area. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents and impact evacuation routes.
- **Hazardous Material** – Hazardous material facilities can be affected by levee failure flooding. Hazardous materials releases can occur if waters that overtop levees rupture storage tanks and other containment structures and cause them to spill into streams, rivers or drainage systems. Releases during these times can be comingled with flood waters, contaminate drinking water, as well as create additional exposures to the environment.
- **Water Systems** – Floods from levee failures can affect the ability for water and wastewater systems to operate, since many are located near leveed areas.

Given the small amount of area that falls in the X Protected by Levee flood zones shown on Figure 4-113, these community lifelines are unlikely to be overwhelmed during a levee failure event.

Natural, Historic, and Cultural Resources

Large levee failure events can affect natural, historic, and cultural resources. There are a number of ways levee failures and associated floodwaters can impact natural resources and the environment: Wildlife habitats can be destroyed. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the areas protected by levees, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme levee failure events. Any of these that fall in the X Protected by Levee flood zones would be vulnerable.

Economic Assets and Community Activities of Value

Major levee failure flooding events could affect any economic asset that lies in the areas protected by levees. These events can also affect those economic assets outside of the areas protected by levees, at least in the short term until floodwaters have receded and the Planning Area has sufficiently recovered. The Planning Area felt that a levee failure would have little bearing on community activities of value, unless a failure had a direct impact on the activity while it was occurring.

Impacts from Levee Failure

Floods and their impacts vary by location, including the added impacts associated with a levee failure flood event, and will only affect certain areas of the Tri-City Planning Area that are in areas protected by levees. Based on the X Protected by Levee analysis, as well as the large number of non-certified levees, it is evident that levee failure floods could potentially have significant impacts to areas of the Planning Area protected by levees, depending on the severity of the event. Impacts that are not quantified, but could be anticipated in large future levee failure events, include:

- Injury and loss of life.
- Commercial and residential structural and property damage.
- Disruption of and damage to public critical infrastructure and services.
- Health hazards associated with mold and mildew, contamination of drinking water, etc.
- Impacts to natural resource areas, including stream bank erosion.
- Damage to roads/bridges resulting in loss of mobility.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

In addition to flood related levee failures, the levees in the Planning Area are at risk to failure during earthquake. Levee failure flooding could accompany an earthquake if a dam or storage reservoir or tank fails. Severe ground shaking from an earthquake event can cause a dam to fail or overflow to the surrounding area.

Channels and water courses with earthen banks and levees are particularly vulnerable and could collapse in a major earthquake resulting in partial or complete blockage of channels causing flooding upstream of the impoundment. Shoreline levees could also collapse, eliminating or impairing the control capabilities of the system. Levees are especially susceptible to rapid settlement due to liquefaction or horizontal spreading of underlying soils.

Future Development

Levee failures are taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.15. Subsidence

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard Profile

Hazard/Problem Description

Land subsidence, as defined by the CGS, is the sinking of the land over man-made or natural underground voids. Subsidence can result in serious structural damage to buildings, roads, irrigation ditches, underground utilities, and pipelines. It can disrupt and alter the flow of surface or underground water. Weight, including surface developments such as roads, reservoirs, and buildings and manmade vibrations from such activities as blasting or heavy truck or train traffic can accelerate the natural processes of subsidence. Fluctuations in the level of underground water caused by pumping or by injecting fluids into the earth can initiate sinking to fill the empty space previously occupied by water or soluble minerals. This can also cause sinkholes to occur. The consequences of improper use of land subject to ground subsidence can be excessive economic losses, including the high costs of repair and maintenance for buildings, irrigation works, highways, utilities, and other structures. This hazard profile covers non-earthquake subsidence. Earthquake based subsidence is discussed in the Earthquake discussion (Section 4.3.10) above.

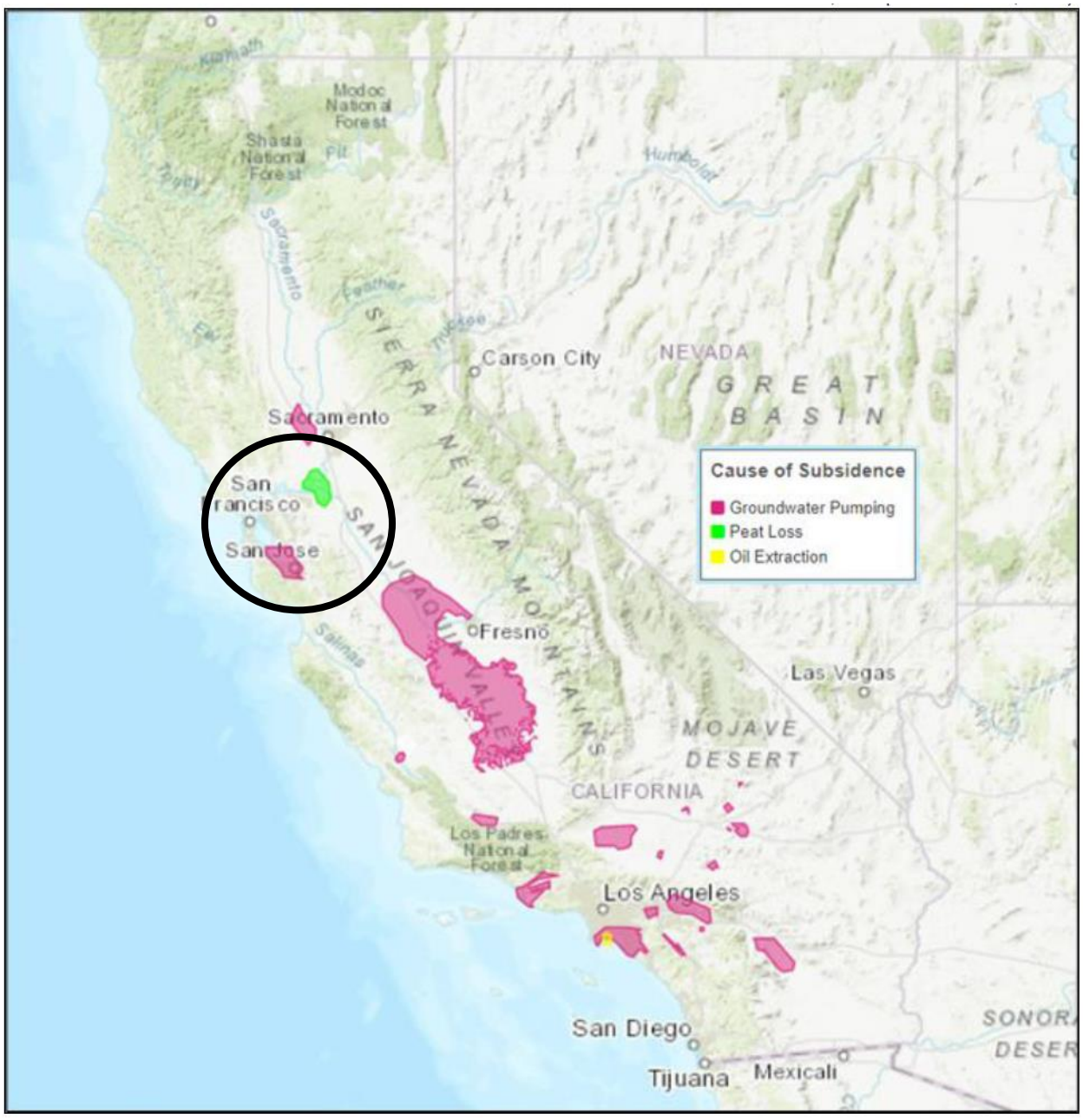
The 2023 State Hazard Mitigation Plan noted that subsidence happens either due to natural processes (organic soil decomposition) or as a result of human activities (groundwater pumping). Groundwater pumping is more likely to affect the Tri-City Planning Area. Fine-grained sediments (clays and silts) in an aquifer system are the main causes of land subsidence due to groundwater pumping. Such sediments tend to be deposited in random orientations with a lot of room between them to store water. However, when groundwater levels fall, the sediments are rearranged into stacks that occupy less space and have less space between them to store water.

Location and Extent

The 2023 State of California Hazard Mitigation Plan noted that subsidence happens either due to natural processes or as a result of human activities and in the Tri-City Planning Area is most likely associated with groundwater pumping and draw down of aquifers. In other cases, pits and wells may have been abandoned and backfilled with undocumented fill materials. Existing pits and wells backfilled with undocumented materials may be subject to differential settlement, which causes structures to shift, and often become damaged, due to the uneven lowering of the earth. Differential settlement is closely related to subsidence, which is the sudden sinking or gradual downward settling of the earth's surface with little or no horizontal movement. Subsidence can be caused by natural geologic processes or by human activity such as subsurface mining or pumping of oil or groundwater. There is no scientific scale for measuring subsidence. It is traditionally measured in historical changes in land elevations. The speed of onset may be gradual or sudden.

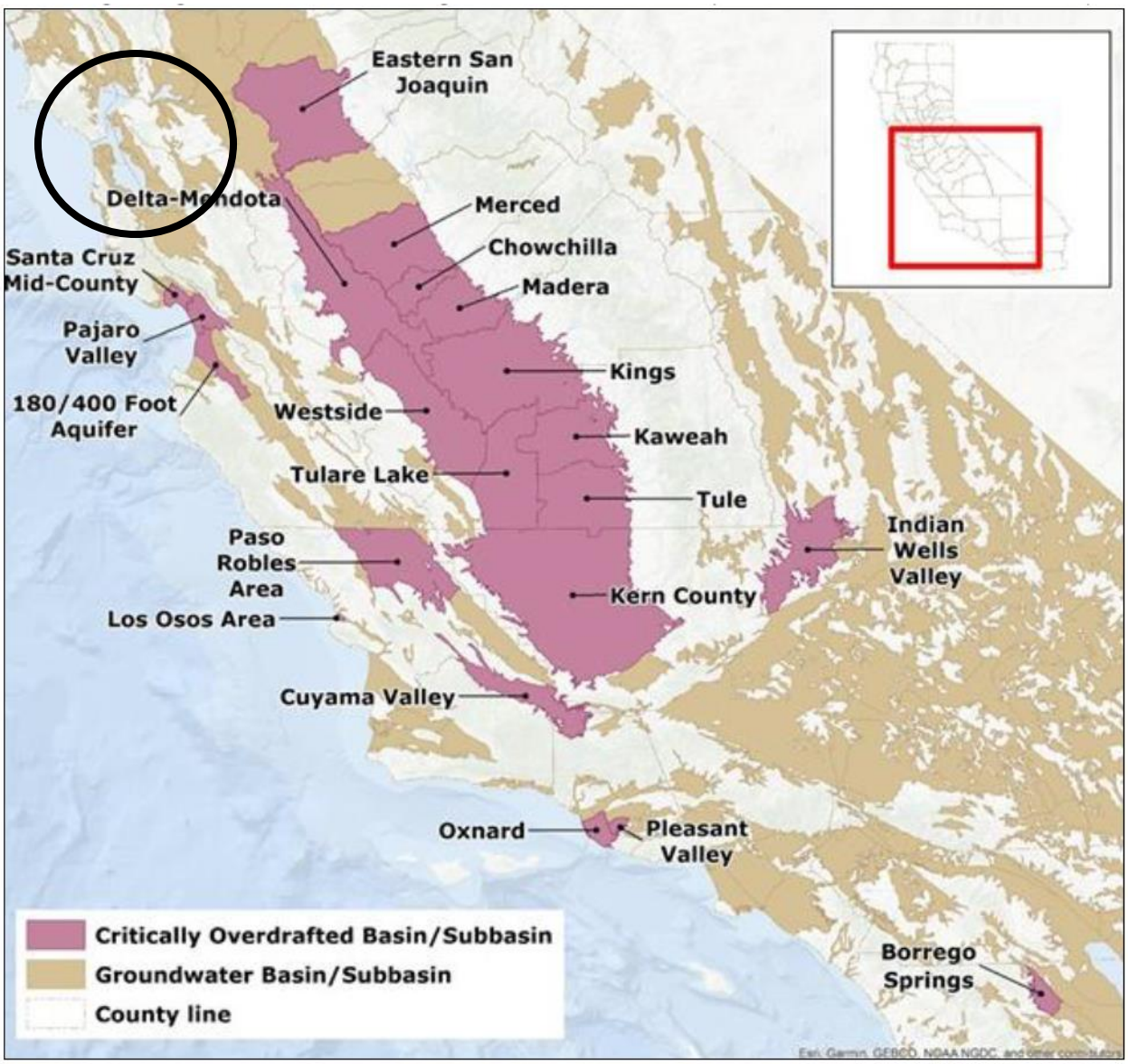
Figure 4-114 shows known areas of subsidence risk in California today. Figure 4-115 shows the critically over-drafted groundwater basins in California. The areas shown are potentially more susceptible to subsidence.

Figure 4-114 Tri-City Planning Area – Areas of Potential Land Subsidence



Source: 2023 State of California Hazard Mitigation Plan

Figure 4-115 Tri-City Planning Area – Critically Over-Drafted Groundwater Basins



Source: 2023 State of California Hazard Mitigation Plan

Additionally, there is concern about levees built with Bay Mud. During periods of shaking, there is concern the levees will lose integrity. More information on this can be found in the Union Sanitary District annex to this Base Plan.

Past Occurrences

Disaster Declaration History

There have been no past federal or state disaster declarations due to subsidence, as detailed in Table 4-5.

NCDC Events

The NCDC data does not track subsidence events.

Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Probability of Future Occurrences

Likely—California's land subsidence is tied to prolonged droughts and simultaneous record-breaking heat. When the state endures prolonged periods of drought, surface water stores are depleted, and the reliance on groundwater for water supply is increased. Given the frequency and duration of these types of events, it is reasonable to assume an increase in probability of subsidence events as well. Subsidence due to water drawdown may occur in areas in and around the Planning Area.

Climate Change and Subsidence

Changes in precipitation, reduced snowpack, and more frequent droughts are likely to increase the demand on groundwater sources, risking overdraft, ground subsidence, and decreased water quality.

Vulnerability Assessment

Vulnerability—Low

California's land subsidence is often tied to prolonged droughts and simultaneous record-breaking heat. When the state endures prolonged periods of drought, surface water stores are depleted, and the reliance on groundwater for water supply is increased. A discussion of assets at risk follows.

Assets at Risk

Assets at risk from subsidence include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

People and Populations

Since subsidence generally happens over a long period of time, there is only a minimal risk to people and populations. Tri-City Planning Area groundwater levels have been lowered due to pumping; no related subsidence has resulted. Under the ACWD directed groundwater recharge program, groundwater levels are now stable.

Structures

All structures in the Tri-City Planning Area bear some measure of risk to subsidence. Subsidence could cause damages as building footings become unstable. However, as noted above, area groundwater levels have been lowered due to pumping, and no related subsidence has resulted. According to the Alameda County Water District, a groundwater recharge program has been successful, and groundwater levels are now stable. A sinkhole (though rare) could affect a structure.

Critical Facilities and Infrastructure and Community Lifelines

All critical facilities in the Tri-City Planning Area bear some measure of risk to subsidence. Gradual sinking could cause foundation damages. If a sinkhole were to open as a result of subsidence, there could be damages to infrastructure and lifelines. A sinkhole (though rare) could affect critical facilities, infrastructure, or community lifelines. The likelihood of this is low.

Natural, Historic, and Cultural Resources

All natural, historic, and cultural resources in the Tri-City Planning Area bear some measure of risk to subsidence. Gradual sinking could cause foundation damages. A sinkhole (though rare) could affect a structure. Historic structures built when building codes were less restrictive may be at greater risk should a sinkhole occur.

Economic Assets and Community Activities of Value

Economic assets bear some measure of risk to subsidence. Subsidence could cause damages as building footings become unstable. Community activities of value are thought to have little to no risk from subsidence.

Impacts from Subsidence

Effects of land subsidence in California include increased flood risk in low-lying areas, damage to buildings and infrastructure, loss of groundwater aquifers, and damage to aquatic ecosystems. As the land sinks, it can experience increased flooding and adverse impacts on sewer lines, stormwater drainage systems, and other impacts to critical facilities and infrastructure. As subsidence progresses, areas protected by levees can be impacted. Compaction of the aquifer system due to subsidence may permanently decrease its capacity to store water.

These impacts can be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development. Impacts in the Tri-City Planning Area are expected to be minimal, as limited areas of subsidence exist and no past occurrences in the Planning Area have been noted.

Future Development

Subsidence is taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.16. Tsunami

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

The 2023 State of California Hazard Mitigation Plan defines a tsunami as a wave triggered by any form of land displacement along the edge or bottom of an ocean or lake. This can be submarine landslides or submarine dip slip fault ruptures that result in seafloor uplift or down-drop. This mass movement often translates to a tsunami or gravity wave within the overlying water. The coastline of California and the San Francisco Bay are at risk to tsunami both from land displacement events occurring locally or from those from many miles away.

Tsunamis travel radially outward from the point of initiation. The size of a tsunami is proportional to the mass movement that generated the tsunami. The speed of a tsunami is proportional to the depth of the water in which the tsunami originated. Tsunamis can travel at great speeds but in the open ocean result in relatively little wave height above the mean sea level as the energy is distributed throughout the water column. The wave length of a tsunami is much longer than wind generated waves, making it hard to detect in the open ocean.

As a tsunami approaches the shore and the depth of the water column decreases, the energy in the wave pushes the wave crest above the water surface resulting in a large wave height. Wave run-up is the elevation above mean sea level on dry land that a tsunami reaches. Run-up is what causes inundation of coastal areas that are below the run-up height. Identifying tsunami hazards requires 1) evaluating the potential for submarine mass movement both locally and at great ocean distances, and 2) identifying coastal regions within the direct or indirect path of a potential tsunami wave that are below the run-up height.

There are two types of tsunamis—local and distant. Local tsunamis are more threatening because they afford at-risk populations only a few minutes to find safety. Distant tsunamis allow for more notice to at-risk populations that a tsunami is inbound. California is vulnerable to, and must consider, both types.

Tsunamis can travel at speeds of over 600 miles per hour in the open ocean and can grow to over 50 feet in height when they approach a shallow shoreline, causing severe damage to coastal development. Recent studies of the continental shelf off the California coast indicate a potential for underwater landslides capable of generating damaging tsunamis that could threaten coastal communities. As well, tsunami events

originating as far away as Alaska and Japan can also trigger events that could be damaging to California coastal areas.

Location and Extent

Tsunami can affect lower lying areas of the Tri-City Planning Area adjacent to the Bay or tidally influenced rivers. This occurs in Planning Area along the San Francisco Bay area. There is no scientific scale for tsunami, only depth of inundation and measure of the water penetration inland. Speed of onset can be short (minutes to hours). CGS has prepared maps for tsunami coastal evacuation zones. The CGS Coastal Evacuation Zone is shown on Figure 4-116 and geographic extents are detailed in Table 4-88. In these maps, there is no zone classification other than inside or outside the evacuation zone.

Figure 4-116 Tri-City Planning Area – Tsunami Coastal Evacuation Zone

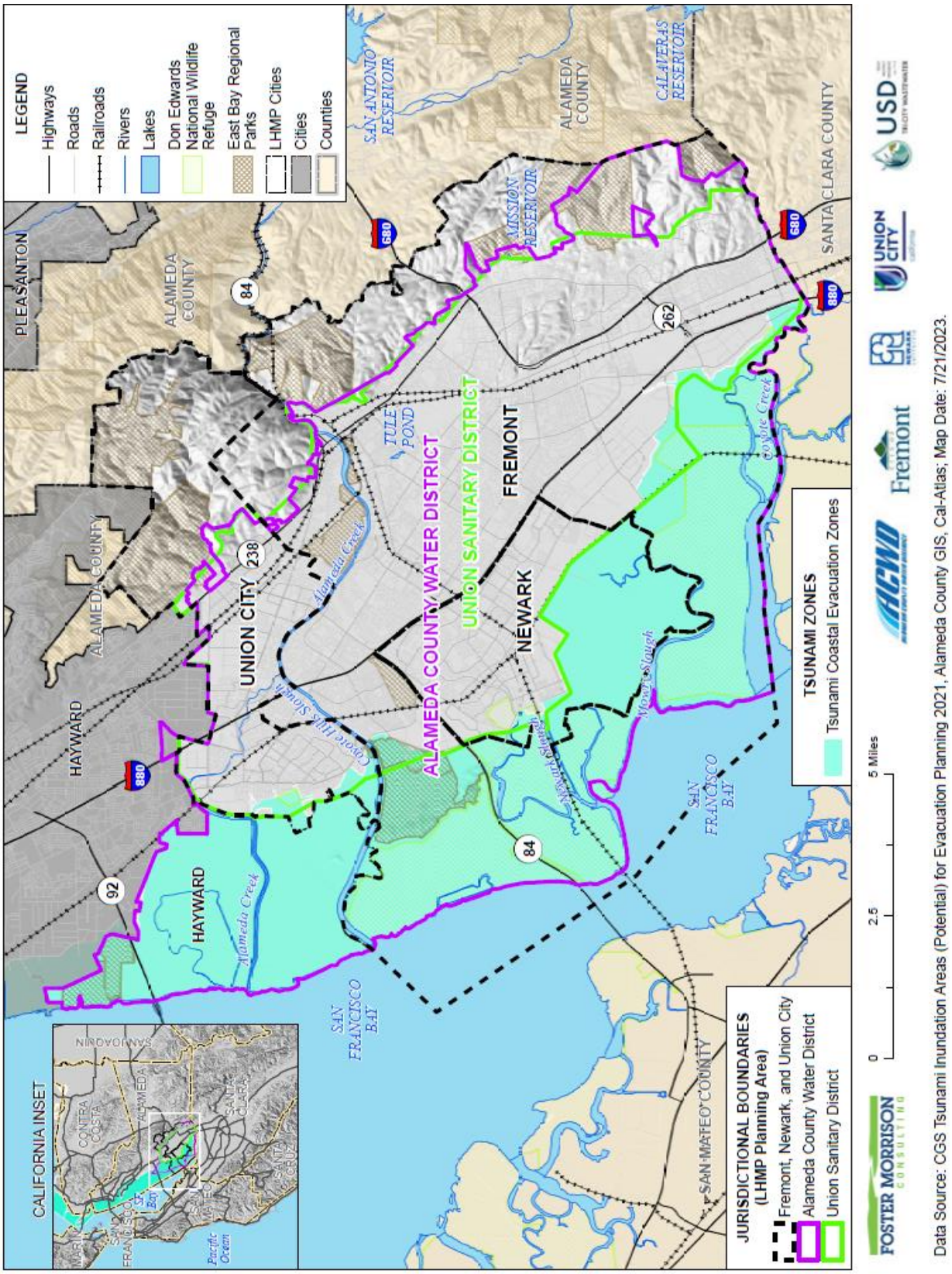


Table 4-88 Tri-City Planning Area – Coastal Evacuation Zone Geographical Extents by Jurisdiction

/ Jurisdiction	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont	21,139.77	26.9%	447.87	1.0%	20,691.91	64.9%
Newark	4,210.69	28.7%	363.71	3.8%	3,846.98	74.8%
Union City	476.81	2.9%	0.55	0.0%	476.27	6.5%
Alameda County Water District	28,780.72	27.6%	823.07	1.3%	27,957.65	69.1%
Union Sanitary District	1,780.08	2.3%	96.46	0.2%	1,683.62	11.9%

Source: CGS

Past Occurrences

Disaster Declaration History

There have been no past federal or state disaster declarations due to tsunami, according to Table 4-5.

NCDC Events

The NCDC has tracked tsunami events in each County dating back to 1996. The events in Alameda County are shown in Table 4-89. This is from a March 11, 2011, event. This was from an earthquake off the coast of Japan. This is often referred to as the Fukushima earthquake, as the tsunami caused a meltdown of three reactors at the Fukushima Daiichi nuclear power plant. More information can be found in the Hazard Mitigation Planning Team events section below.

*Table 4-89 Alameda County NCDC Tsunami Events 1/1/1996–12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Tsunami	1	0	0	0	0	$50,000	$0
Total	**1**	**0**	**0**	**0**	**0**	**$50,000**	**$ 0**

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

Planning Committee Events

The 2021 Alameda County LHMP reported that more than 71 tsunamis have been recorded in San Francisco Bay since 1854. Most of these tsunamis were generated by earthquakes in distant subduction zones near Russia, Japan, or Alaska. The worst tsunami to hit the Bay Area was generated in Alaska by a M 9.2 earthquake on March 27, 1964. This event produced a 2-foot runup in the nearby City of Alameda and a 4-foot runup in the City of Oakland. On March 11, 2011, a tsunami generated in Japan from the Fukushima

earthquake resulted in a 2-foot runup in the nearby cities of Alameda and Berkeley. Minor damage to docks and piles was reported. No damage was reported in the Tri-City Planning Area.

Likelihood of Future Occurrence

Unlikely – Strong earthquakes, or other major land displacement events, occurring near the Tri-City Planning Area or elsewhere on the Pacific "Ring of Fire," especially Alaska, give the Planning Area limited warning of the overwhelming waves that move up to 600 mph. A massive earthquake in the central Aleutian Islands of Alaska could send 30-foot waves to the nearby coast within about five hours. Since earthquakes of this magnitude are somewhat rare, the likelihood of future occurrence is unlikely.

Climate Change and Tsunami

Earthquakes are the main cause of tsunamis in the Pacific Ocean. According to the CAS, climate change is unlikely to increase earthquake frequency or strength.

Vulnerability Assessment

Vulnerability—Medium

Tsunamis arrive as a series of successive crests (high water levels) and troughs (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart; however, they usually occur 10 to 45 minutes apart. As a tsunami enters the shoaling waters near a coastline, its speed diminishes, its wavelength decreases, and its height increases greatly. The first wave usually is not the largest. Several larger and more destructive waves often follow the first one. As tsunamis reach the shoreline, they may take the form of a fast-rising tide, a cresting wave, or a bore (a large, turbulent wall-like wave). The bore phenomenon resembles a step-like change in the water level that advances rapidly (from 10 to 60 miles per hour).

Portions of the Tri-City Planning Area are at some measure of vulnerability to tsunami. An assessment of a community's vulnerability to tsunami begins with an understanding of local exposure to tsunami. This is included in the discussion of the Planning Area's Assets at Risk to this hazard.

Assets at Risk

Assets at risk from tsunami include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

Methodology

2023 Alameda County Parcel/Assessor Data was used as the basis for the Tri-City inventory of parcels, values, and acres. The Tsunami Coastal Evacuation Zones were gathered from the CGS and used to perform the tsunami analysis. In some cases, there are parcels in multiple flood zones, such as Zone A, Zone X, or Shaded X. GIS was used to create a centroid, or point representing the center of the parcel polygon. Tsunami evacuation zone data was then overlaid on the parcel layer. The parcels and associated values

were segregated and analyzed in this fashion to determine parcels and values at risk to the tsunami hazard for the Tri-City Planning Area.

People and Populations

People and populations in the tsunami evacuation zones are at risk to high velocity wave or flood inundation. Certain vulnerable populations within areas prone to a tsunami event may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unhoused, those with limited mobility, and those that lack the resources to leave the area. Given the coastal location of a potential Tsunami, people that live, work, visit, or recreate in these areas would be at risk. Risks to people include drowning as well as being injured or killed by debris that gets added to the floodwaters in this type of event.

Planning Area residents that live in the tsunami coastal evacuation zone would be the most vulnerable. To further evaluate the impact to the residential populations within the Planning Area, the CGS Tsunami Coastal Evacuation Zone was overlayed on the parcel layer and linked to the Assessor data to identify parcels with a residential property use. Based on this data no residential parcels were identified in the tsunami evacuation zone, thus no people "officially" reside in these areas. However, there is always the potential for unhoused individuals and transient populations to temporarily live in these areas which may put them at greater vulnerability to a tsunami.

Structures

Certain structures in the Planning Area are at risk from tsunami. GIS was used to determine the possible impacts of tsunami inundation within the Planning Area. The CGS Tsunami Coastal Evacuation Zone was overlaid with the 2022 Alameda County Parcel/Assessor database. Table 4-90 shows the parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the Planning Area by jurisdiction use that fall in the CGS Tsunami Coastal Evacuation Zone.

Table 4-90 Tri-City Planning Area – Count and Value of Parcels (and Structures) in Tsunami Coastal Evacuation Zone by Jurisdiction

Jurisdiction / Tsunami Coastal Evacuation Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
Tsunami Coastal Evacuation Zone	276	7	$96,814,653	$139,827,797	$152,213,294	$388,855,744

Jurisdiction / Tsunami Coastal Evacuation Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Newark						
Tsunami Coastal Evacuation Zone	935	320	$281,402,205	$228,818,764	$112,796,934	$623,017,903
Union City						
Tsunami Coastal Evacuation Zone	39	2	$24,094,799	$2,264,465	$2,264,465	$28,623,729
Alameda County Water District (Service Territory)						
Tsunami Coastal Evacuation Zone	1,330	335	$414,935,597	$375,060,400	$272,783,067	$1,062,779,064
Union Sanitary District (Service Territory)						
Tsunami Coastal Evacuation Zone	812	275	$294,031,039	$342,644,430	$248,354,097	$885,029,566

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023),

Critical Facilities and Infrastructure and Community Lifelines

As previously noted, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. These can be affected by a tsunami. Tsunami inundation presents a threat to critical facilities and infrastructure, and community lifelines as discussed in the following sections.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Tsunami inundation presents a threat to life and property in the Tri-City Planning Area, including impacts to community lifelines. Community lifelines that would be vulnerable to flooding include:

- **Safety and Security** – Search and rescue teams may be called on to perform riskier duties during a tsunami event. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. During large events, these services may become stretched.
- **Food, Hydration, Shelter –**Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water. Those who are displaced by tsunami may need to be provided both clean drinking water, as well as food.
- **Health and Medical** – Loss of life and injuries can occur during significant tsunami events. A large tsunami flood event may make locating and rescuing affected individuals extremely difficult; many may we washed out to the Bay. As well associated flooding may complicate the ability to transport the injured possibly requiring workarounds or rerouting of injured to other facilities. Public health can also be at risk. Floodwaters generated from a tsunami can become contaminated, which can lead to illness and affect clean drinking water. Floodwaters can also pick up large amounts of debris which can further injure those that get caught up in the floodwaters.
- **Energy** – Floods can cause power grid issues and lead to power outages. During tsunami flood events gas lines may break or otherwise be damaged from erosion and debris in floodwaters.
- **Communications** – Communication systems in these areas can be damaged. An influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about closures of roads, beaches, and coastal areas as well as any requirements for evacuations or sheltering.
- **Transportation** – Transportation networks can be affected, such as flood and debris damage to bridges, railways and roads. This can cause road closures and cut off entire areas. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Life safety can also be an issue on roads flooded by a tsunami.
- **Hazardous Material** – Hazardous material facilities can be affected by tsunami flooding. Releases during these times can cause public health concerns, contaminate drinking water, and can cause impacts to natural systems and the environment.
- **Water Systems** – Tsunami flooding can affect the ability for water and wastewater systems to operate, especially in areas where pipes and critical infrastructure are located within tsunami evacuation zones.

During a tsunami event, many community lifelines in the Tri-City Planning Area have some level of vulnerability, but it is unlikely that any of these lifelines would be overwhelmed.

Natural, Historic, and Cultural Resources

A tsunami event can affect natural, historic and cultural resources located within the coastal areas of the Planning Area within the Tsunami Coastal Evacuation Zone. Wildlife habitats and wetland areas can be damaged or destroyed by floodwaters. This is true in the marshland and Don Edwards Park areas around the Tri-City Planning Area. Contaminated floodwaters can pollute rivers and habitats. Silt and sediment can destroy natural areas. Trees can be uprooted by high-velocity water flow. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to historic structures within the tsunami inundation areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme tsunami events.

Economic Assets and Community Activities of Value

Tsunami events can cause direct damage to economic assets such as businesses and commercial centers located in affected areas. Based on the hazard parcel analysis, numerous commercial and industrial parcels

as well as government/institutional use parcels are located in these coastal areas. During extreme events, the economy may slow while recovery efforts are prioritized. Business revenue may be reduced during extended events. Community activities and events in these coastal areas may be cancelled or rescheduled.

Impacts from Tsunami

Coastal areas located within Tsunami Coastal Evacuation Zone could be significantly affected by a tsunami. Tsunamis can cause loss of life, damage to property and critical facilities and infrastructure, and adversely impact the environment and local economies. Tsunami inundation can result in flooding, erosion and scouring, water contamination, and spread of disease due to standing water.

Natural resource areas, marsh areas, and wetlands lie along the coastal areas, and could be negatively impacted by tsunami inundation. Water quality issues can also occur due to contamination of floodwaters. Loss of wetlands and marsh lands from erosion and wetland migration due to tsunami inundation can reduce the natural filtration provided by wetland plants, also increasing contributing to water quality issues. Healthy coastal ecosystems can be degraded or lost.

Future Development

Tsunami is taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.17. Wildfire

Hazard Profile

This hazard profile contains multiple sections that detail how this hazard can affect the Tri-City Planning Area. These sections include a hazard/problem description; description of location and extent; past occurrences of this hazard; and how climate change can affect this hazard.

Hazard/Problem Description

California is recognized as one of the most fire-prone and consequently fire-adapted landscapes in the world. The combination of complex terrain, Mediterranean climate, and productive natural plant communities, along with ample natural and aboriginal ignition sources, has created conditions for extensive wildfires. Wildland fire is an ongoing concern for the Planning Area. Generally, the fire season extends from early spring through late fall of each year during the hotter, dryer months. However, in recent years, wildfire season is more of a year around event. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, an accumulation of vegetation, and high winds.

Potential losses from wildfire include human life, structures and other improvements, natural and cultural resources, quality and quantity of water supplies, cropland, timber, and recreational opportunities. Economic losses could also result. Smoke and air pollution from wildfires can be a severe health hazard. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides and mudflows, and erosion during the rainy season. Additional losses could occur if PG&E

initiates a power shutdown during extreme fire weather conditions. This is discussed in greater detail at the end of Section □.

Wildfire Smoke and Air Quality

Smoke from wildfires is made up of gas and particulate matter, which can be easily observed in the air. Air quality standards have been established to protect human health with the pollutant referred to as PM2.5 which consists of particles 2.5 microns or less in diameter. These smaller sizes of particles are responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract.

As noted above, the 2023 State Hazard Mitigation Plan noted that the danger of wildfire smoke comes primarily from particulate matter 2.5 (PM2.5). On a given day, California wildfires can produce 10 times more PM2.5 air pollution than is produced by all other pollution sources combined. The small particles in PM2.5 pollution are capable of reaching deep into the lungs, causing a host of complications, including significantly increased risks of heart disease, respiratory disease, asthma, and premature mortality. Smoke from wildfires that burn homes and other structures can additionally contain toxic materials such as asbestos and heavy metals. Studies indicate that wildfire smoke is up to 10 times more harmful than other forms of PM2.5 pollution.

Location and Extent

Wildfire is part of California's natural ecology. However, its danger and cost have increased as fire-prone areas across the State have been increasing as well. This is especially true in the Tri-City Planning Area. Over the years, fire suppression practices and invasive plants have contributed to fuel build-up and increased the risk of more catastrophic wildfire events.

Wildland fires affect grass, forest, and brushlands, as well as any structures located within them. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Generally, there are four major factors that sustain wildfires and allow for predictions of a given area's potential to burn. These factors include fuel, topography, weather, and human actions.

- **Fuel** – Fuel is the material that feeds a fire and is a key factor in wildfire behavior. Fuel is generally classified by type and by volume. Fuel sources are diverse and include everything from dead tree leaves, twigs, and branches to dead standing trees, live trees, brush, and cured grasses. Also to be considered as a fuel source are manmade structures, such as homes and other associated combustibles. The type of prevalent fuel directly influences the behavior of wildfire. Fuel is a primary factor that is under human control.
- **Topography** – An area's terrain and land slopes affect its susceptibility to wildfire spread. Both fire intensity and rate of spread increase as slope increases due to the tendency of heat from a fire to rise via convection. The arrangement of vegetation throughout a hillside can also contribute to increased fire activity on slopes.
- **Weather –** Weather components such as temperature, relative humidity, wind, and lightning also affect the potential for wildfire. High temperatures and low relative humidity dry out fuels that feed wildfires, creating a situation where fuel will ignite more readily and burn more intensely. Thus, during periods of drought, the threat of wildfire increases. Wind is the most treacherous weather factor. The greater

a wind, the faster a fire will spread and the more intense it will be. In addition to wind speed, wind shifts can occur suddenly due to temperature changes or the interaction of wind with topographical features such as slopes or steep hillsides. Winds have caused power lines to arc and become fire risks to the Planning Area. Lightning also ignites wildfires. Lightning can come both during thunderstorms, or can be dry lightning. In 2020, a lightning siege caused multiple fires near the Planning Area. During much of the year (winter and spring months), temperatures in the East Bay are moderate, and vegetation is relatively moist and less prone to catastrophic wildfires. Summers often bring overnight and morning fog along the hills until around noon, with moist midday winds blowing westerly in from the coast. However, with limited precipitation during Summer and Fall, vegetation dries out and is more susceptible to wildfire ignitions and spread. When combined with a phenomenon known as "Diablo winds" the potential for an out of control wildfire exists. These hot, dry winds blow from the east, often in the early morning when major fires are least expected. They can fan the flames of small sparks into wildfires that have been observed to move down from a ridge top in 30 minutes, expand to one square mile in an hour, and consume hundreds of residences in one day. The limited days each year when all of the high fire danger conditions—low humidity, high temperatures, and hot, dry Diablo winds blowing in from the east—are extreme are labeled Red Flag days, and often occur in the fall months.

- **Human Actions** – Most wildfires are ignited by human action, the result of direct acts of arson, carelessness, or accidents. Many fires originate in populated areas along roads and around homes, and are often the result of arson or careless acts such as the disposal of cigarettes, use of equipment or debris burning. Recreation areas that are located in high fire hazard areas also result in increased human activity that can increase the potential for wildfires to occur.

Fires can have a quick speed of onset, especially during periods of drought. Fires can burn for a short period of time, or may have durations lasting for a week or more. Wildfire can affect any area of the Planning Area; however, CAL FIRE has mapped areas in California that are at risk to wildfire. Methodologies for this analysis and maps showing the various Fire Hazard Severity Zones, which range from Urban-Unzoned to Very High, can be found in the Vulnerability Assessment below. Geographic extents of wildfire can be seen on Figure 4-117 and is detailed by jurisdiction in Table 4-91.

Figure 4-117 Tri-City Planning Area – CAL FIRE Fire Hazard Severity Zones

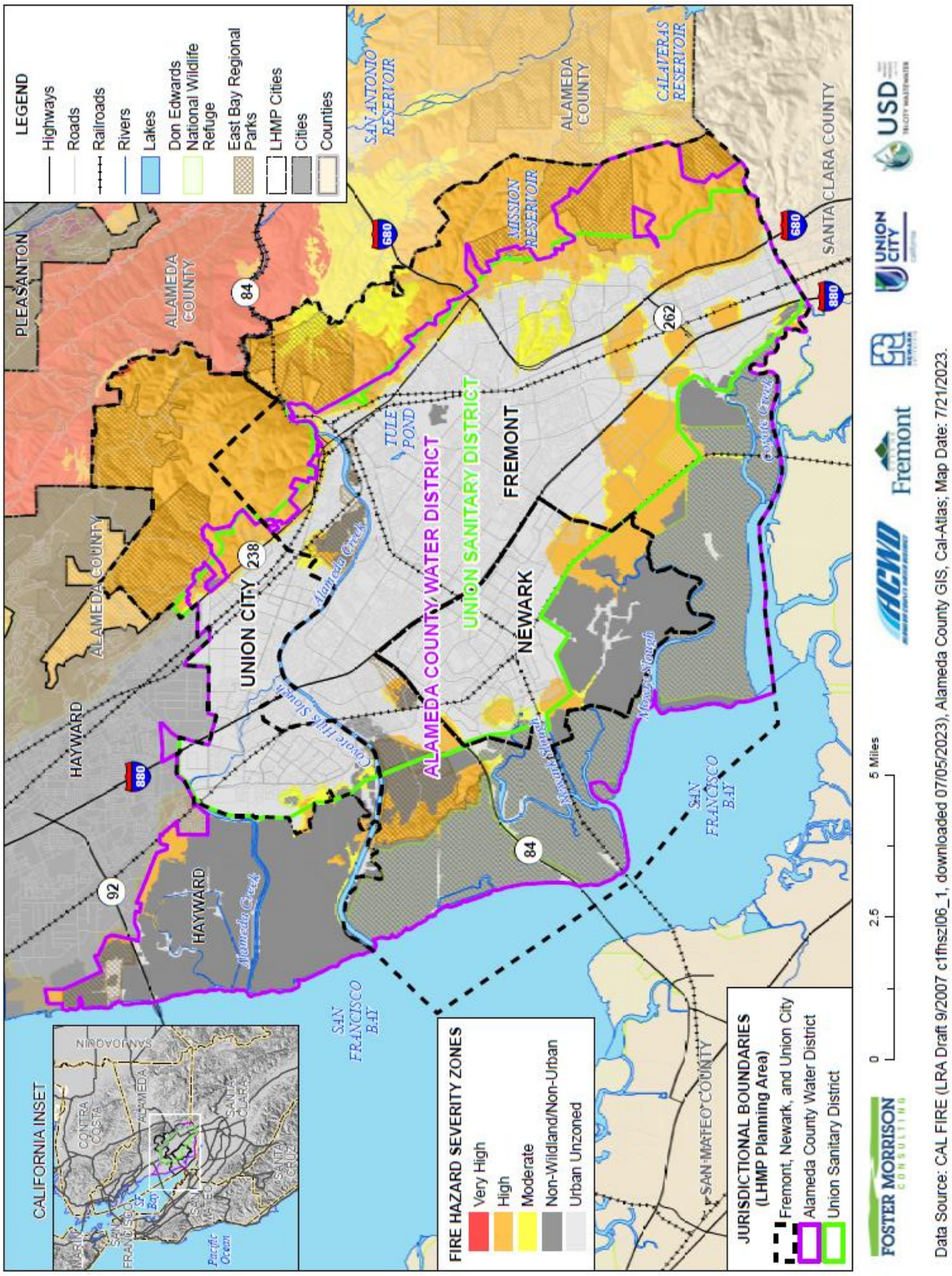


Table 4-91 Tri-City Planning Area – CAL FIRE Fire Hazard Severity Zones Geographical Extents by Jurisdiction

Jurisdiction/ Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Fremont						
Very High	16.07	0.0%	0.99	0.0%	15.08	0.0%
High	15,948.10	18.7%	4,734.21	10.2%	11,213.89	29.0%
Moderate	2,559.08	3.0%	1,107.90	2.4%	1,451.18	3.8%
Non-Wildland/Non-Urban	19,373.45	22.7%	176.31	0.4%	19,197.14	49.7%
Urban Unzoned	47,394.13	55.6%	40,606.59	87.1%	6,787.54	17.6%
Fremont Total	**85,290.82**	**100.0%**	**46,626.00**	**100.0%**	**38,664.82**	**100.0%**
Newark						
Very High	0	0.0%	0	0.0%	0	0.0%
High	2,478.89	16.9%	1,530.64	16.0%	948.25	18.4%
Moderate	935.49	6.4%	844.18	8.9%	91.31	1.8%
Non-Wildland/Non-Urban	3,120.03	21.2%	240.25	2.5%	2,879.78	55.9%
Urban Unzoned	8,153.84	55.5%	6,922.42	72.6%	1,231.42	23.9%
Newark Total	**14,688.25**	**100.0%**	**9,537.48**	**100.0%**	**5,150.76**	**100.0%**
Union City						
Very High	62.74	0.4%	0.00	0.0%	62.74	0.9%
High	6,253.69	37.5%	656.35	7.0%	5,597.34	76.4%
Moderate	498.23	3.0%	301.27	3.2%	196.96	2.7%
Non-Wildland/Non-Urban	173.12	1.0%	26.57	0.3%	146.55	2.0%
Urban Unzoned	9,680.36	58.1%	8,357.09	89.5%	1,323.27	18.1%
Union City Total	**16,668.15**	**100.0%**	**9,341.29**	**100.0%**	**7,326.86**	**100.0%**
Alameda County Water District (Service Territory)						
Very High	4.11	0.0%	0	0.0%	4.11	0.0%
High	13,047.47	12.2%	5,508.25	8.6%	7,539.22	17.6%
Moderate	3,193.37	3.0%	2,058.96	3.2%	1,134.41	2.7%

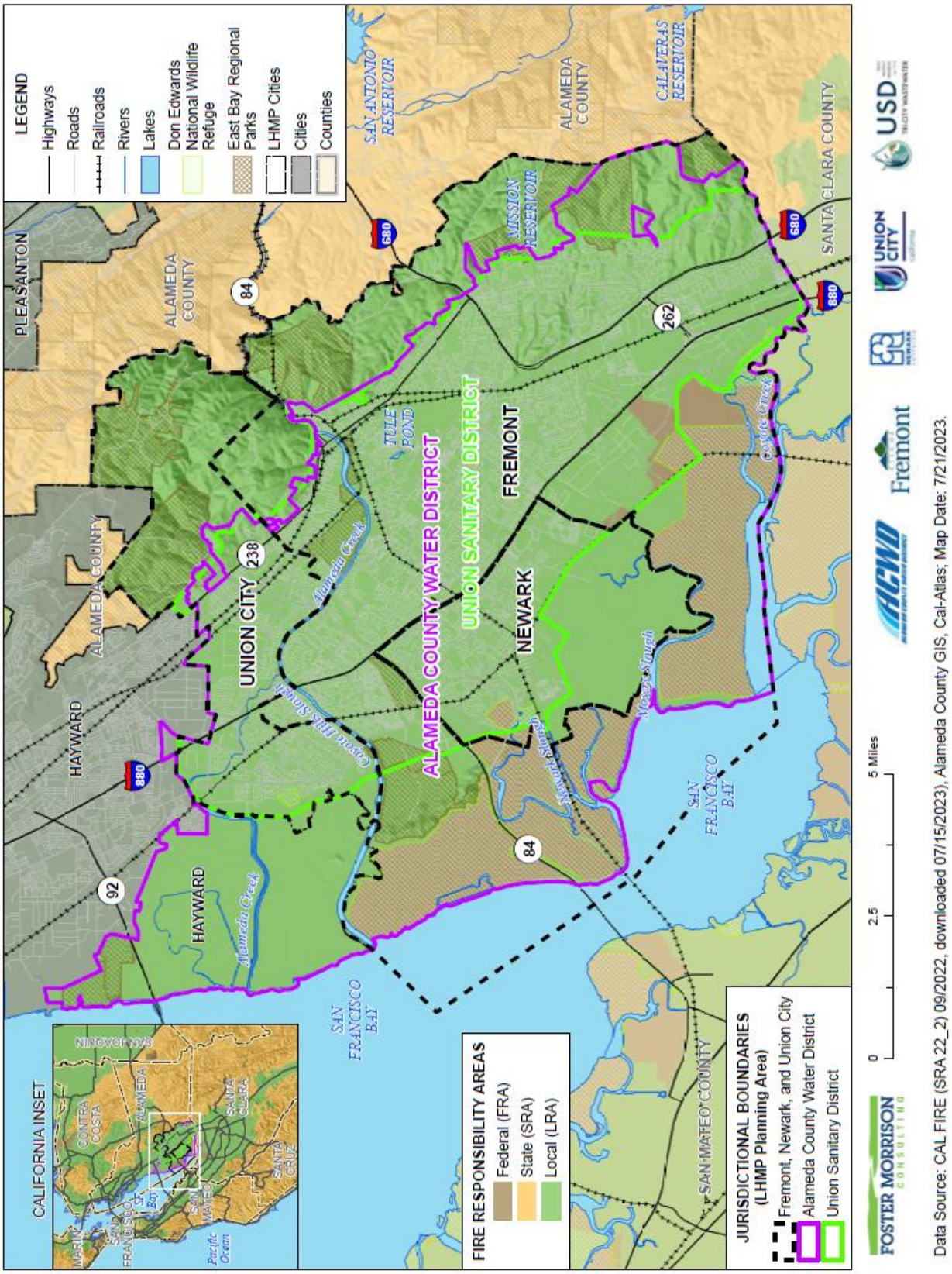
Jurisdiction/ Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Non-Wildland/Non-Urban	24,781.85	23.2%	443.13	0.7%	24,338.72	57.0%
Urban Unzoned	65,657.08	61.5%	55,957.92	87.5%	9,699.16	22.7%
Alameda County Water District Total	**106,683.89**	**100.0%**	**63,968.27**	**100.0%**	**42,715.62**	**100.0%**
Union Sanitary District (Service Territory)						
Very High	0	0.0%	0	0.0%	0	0.0%
High	8,750.39	11.3%	5,248.70	8.3%	3,501.69	24.7%
Moderate	3,007.67	3.9%	2,045.80	3.2%	961.86	6.8%
Non-Wildland/Non-Urban	1,121.91	1.4%	98.49	0.2%	1,023.42	7.2%
Urban Unzoned	64,620.36	83.4%	55,949.15	88.3%	8,671.21	61.2%
Union Sanitary District Total	**77,500.32**	**100.0%**	**63,342.14**	**100.0%**	**14,158.18**	**100.0%**

Source: CAL FIRE

Fire Responsibility Areas

There are numerous state and federal wildland fire protection agencies that have responsibility within California, Alameda County and the Tri-City Planning Area. CAL FIRE has a legal responsibility to provide fire protection on all SRA lands, which are defined based on land ownership, population density and land use. There are also numerous local fire departments and fire protection districts that serve local areas, many of whom have mutual aid agreements with each other as well as state and federal agencies for fire suppression and protection. Fire Responsibility Areas are generally categorized by Federal Responsibility Areas (FRA), State Responsibility Areas (SRA) and Local Responsibility Areas (LRA). Locations of each responsibility area are shown in Figure 4-118. As shown, almost the entire Tri-City Planning Area falls in the LRA. The Don Edwards National Wildlife Refuge is the only area in the FRA. As such, no tabular analysis was performed.

Figure 4-118 Tri-City Planning Area – Fire Responsibility Areas by FRA, SRA, LRA



Past Occurrences

Disaster Declaration History

There have been 1 federal and 2 state disaster declarations due to wildfire in Alameda County. This can be seen in Table 4-92. These were from the 1991 Tunnel Fire and the 1970 Fish Canyon Fire.

Table 4-92 Alameda County Disaster Declarations 1950-2022 from Wildfire

Disaster Type	Federal Declarations		State Declarations	
	Count	Years	Count	Years
Wildfire	1	1970	2	1970, 1991

Source: Cal OES, FEMA

NCDC Events

The NCDC has tracked wildfire events in each County dating back to 1993. The events in Alameda County are shown in Table 4-93.

*Table 4-93 Alameda County NCDC Storm Events 1/1/1950-12/31/2022**

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Wildfire	18	0	0	6	1	$10,000	$0

Source: NCDC

*Note: Losses reflect totals for all impacted areas, some of which fell outside of the Planning Area and outside of Alameda County.

CAL FIRE Events

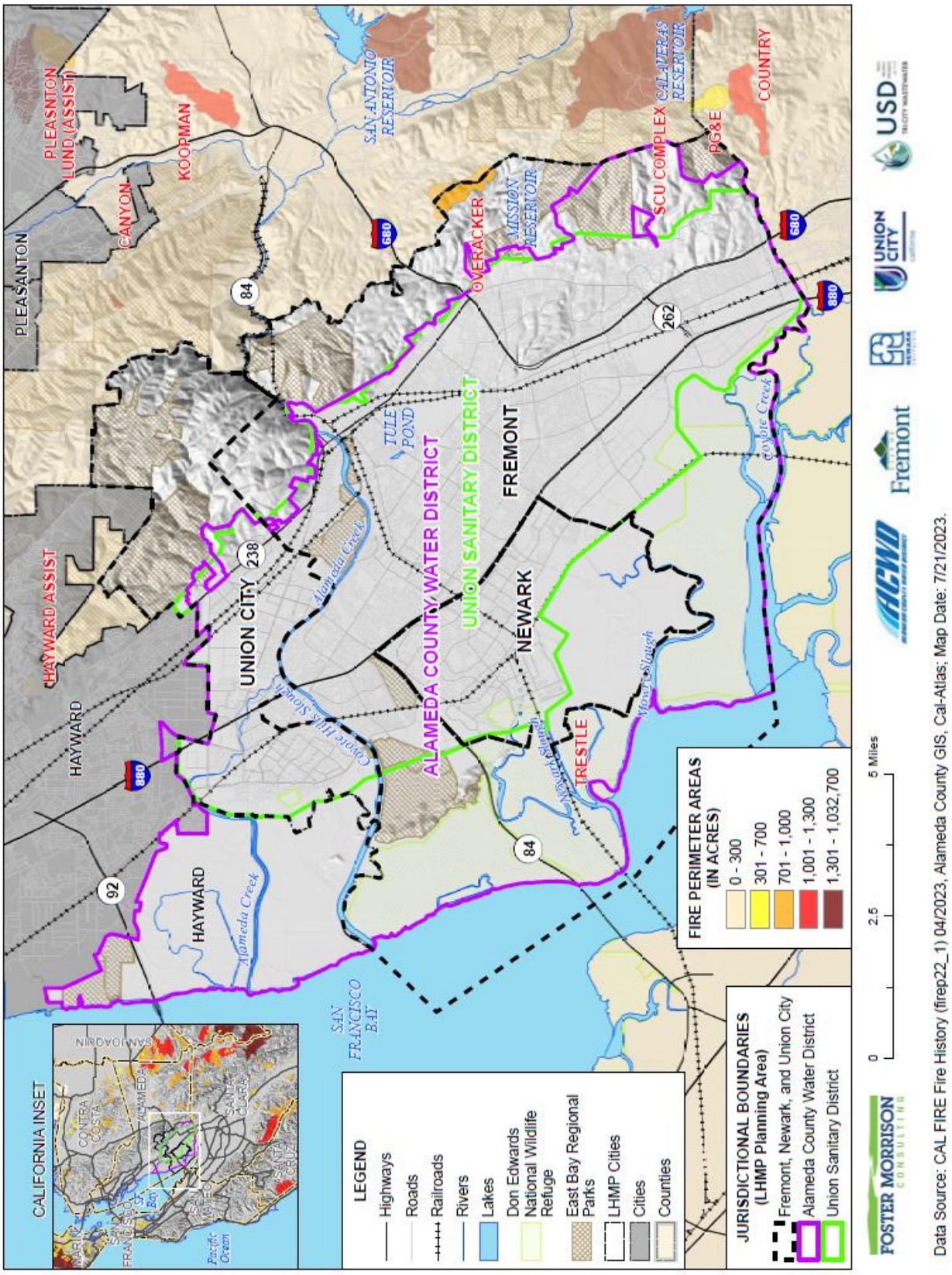
CAL FIRE, USDA Forest Service Region 5, Bureau of Land Management (BLM), the National Park Service (NPS), Contract Counties and other agencies jointly maintain a comprehensive fire perimeter GIS layer for public and private lands throughout the state. The data covers fires going back to 1878. For the National Park Service, Bureau of Land Management, and US Forest Service, fires of 10 acres and greater are reported. For CAL FIRE, timber fires greater than 10 acres, brush fires greater than 50 acres, grass fires greater than 300 acres, and fires that destroy three or more residential dwellings or commercial structures are reported. CAL FIRE recognizes the various federal, state, and local agencies that have contributed to this dataset, including USDA Forest Service Region 5, BLM, National Park Service, and numerous local agencies.

Fires may be missing altogether or have missing or incorrect attribute data. Some fires may be missing because historical records were lost or damaged, fires were too small for the minimum cutoffs, documentation was inadequate, or fire perimeters have not yet been incorporated into the database. Also, agencies are at different stages of participation. For these reasons, the data should not be used for statistical or analytical purposes.

The data provides a reasonable view of the spatial distribution of past large fires in California Figure 4-119 shows fire history for the area surrounding the Tri-City Planning Area, colored by the size of the acreage

burned. This map contains fires from 1950 to 2022. Each of them was tracked by CAL FIRE. Many more small fires have occurred but were not included in the analysis.

Figure 4-119 Tri-City Planning Area – Wildfire History 1950 to 2022



Planning Committee Events

Discussions of Planning Committee events for each jurisdiction can be found in their respective annexes to this LHMP Update.

Likelihood of Future Occurrences

Highly Likely — Conventional thought states that from May to October of each year, the Tri-City Planning Area faces a serious wildland fire threat. Recently, it is as though the fire threat is almost year around. Fires will continue to occur on an annual basis in and near the Planning Area. The threat of wildfire and potential losses are constantly increasing as human development and population increase and the wildland urban interface areas expand. Due to its adjacent high fuel load and long, dry summers, the Planning Area continues to be at risk from wildfire. The likelihood that fires will occur in a given year is almost 100%. Most of the fires are extinguished quickly and burn less than an acre or only a few acres. Larger fires burning tens of acres, hundreds of acres or more occur much less frequently.

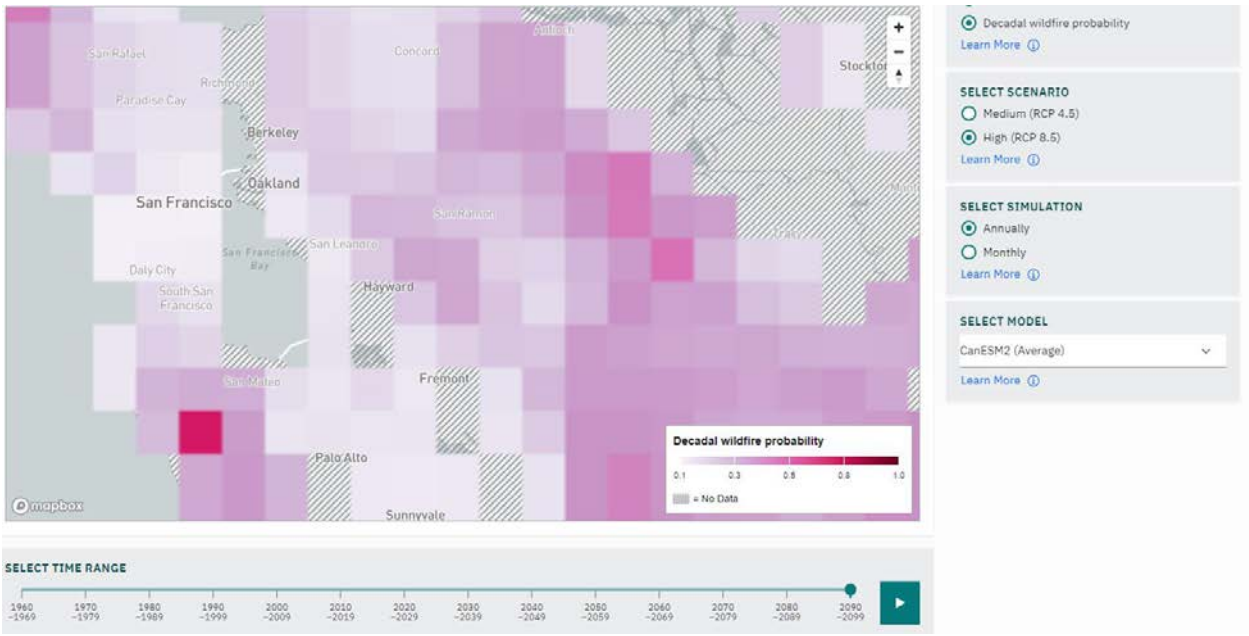
Climate Change and Wildfire

Climate change and its effect on wildfire near the Planning Area has been discussed by Cal-Adapt.

Cal-Adapt Predictions

Warmer temperatures can exacerbate drought conditions. Drought often kills plants and trees, which serve as fuel for wildfires. Warmer temperatures could increase the number of wildfires and pest outbreaks, such as the western pine beetle. Cal-Adapt's wildfire tool predicts the potential increase in the amount of burned areas for the year 2090-2099, as compared to recent (2010) conditions. This is shown in Figure 4-120. Based on this model, Cal-Adapt predicts that wildfire risk in Alameda County will increase moderately at the end of the century. However, wildfire models can vary depending on the parameters used. Cal-Adapt does not take landscape and fuel sources into account in their model. In all likelihood, in the Tri-City Planning Area, precipitation patterns, high levels of heat, topography, and fuel load will determine the frequency and intensity of future wildfire.

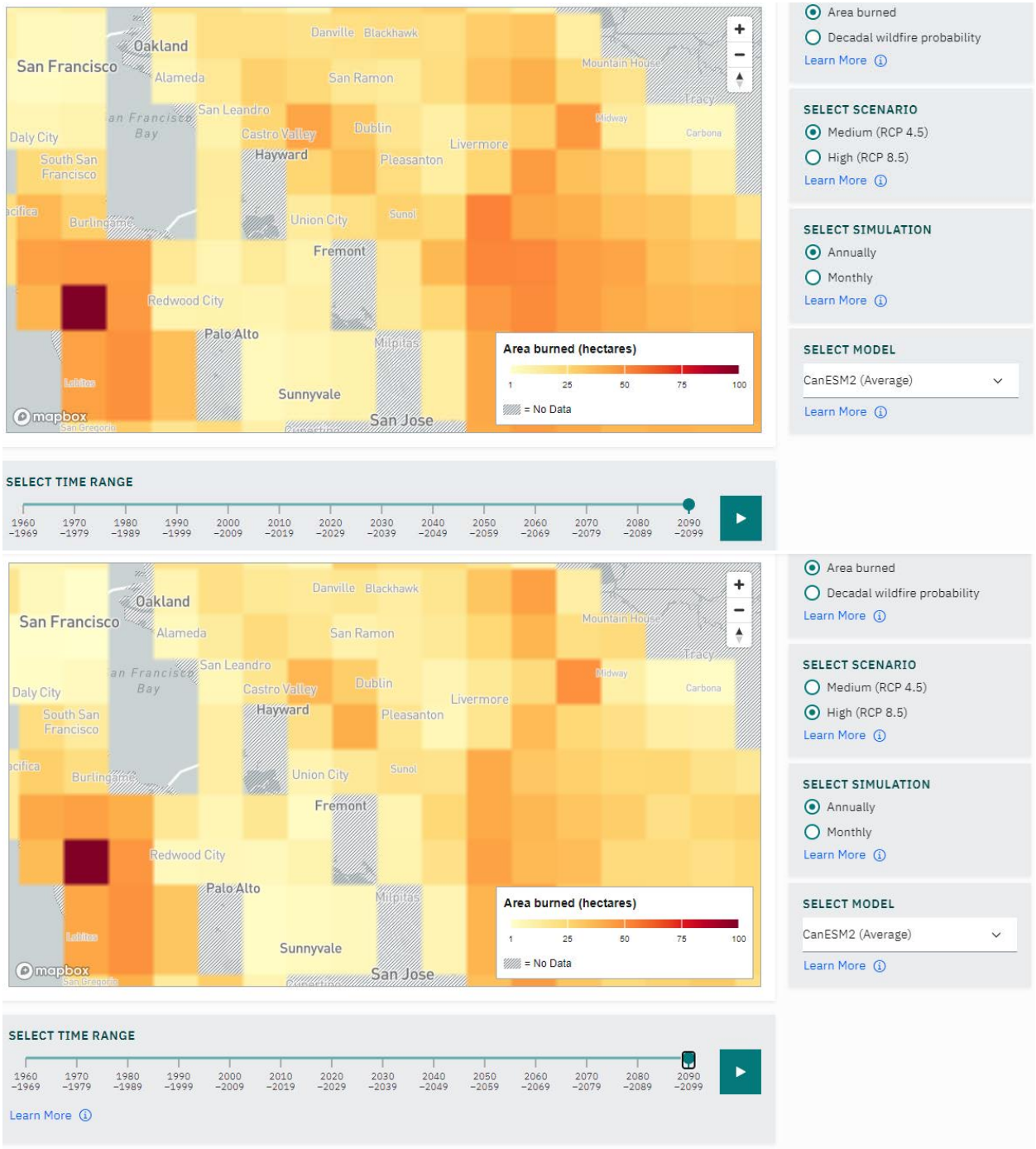
Figure 4-120 Tri-City Planning Area – Projected Increase in Wildfire Burn Areas



Source: Cal-Adapt

Wildfire scenario projections were done by Cal-Adapt, based on statistical modeling from historical data of climate, vegetation, population density, and fire history. The fire modeling ran simulations on five variables on a monthly time step - Large fire presence/absence, Number of fires given presence, Area burned in a grid cell given a fire, High severity burned area given a fire and emissions. These are shown on Figure 4-121. The upper chart shows modeled annual averages of area burned for the Planning Area under the RCP 4.5 scenario, while the lower chart shows modeled annual averages of area burned for the Planning Area under the RCP 8.5 scenario.

Figure 4-121 Tri-City Planning area – Future Annual Averages of Acres Burned under RCP 4.5 and 8.5 Scenarios



Source: Cal-Adapt

Vulnerability Assessment

Vulnerability—High

Risk and vulnerability to the Tri-City Planning Area from wildfire is of significant concern. Wildfire is not the only hazard that the Planning Area faces, but it is one of the most significant hazards, based on the number, severity, and proximity of wildfires to the Planning Area over the last several years and the increasing potential for a large catastrophic wildfire. Wildfires that occur in the Tri-City Planning Area occur from a variety of both natural and manmade causes. The Planning Area can be affected both by fires that start on or near Planning Area lands as well as those that start elsewhere and move in to the Planning Area. In addition to burning large areas of land, air quality can be affected in the Planning Area by fires occurring inside the Planning Area as well as those from many miles away. As growth continues and populations increase in the Planning Area, the potential for wildfires will also increase.

The whole of the Tri-City Planning Area is at some measure of vulnerability to wildfire. An assessment of a community's vulnerability to wildfire begins with an understanding of local exposure to wildfire. This is included in the assets at risk discussion that follows the smoke and air quality discussion below.

Assets at Risk

Assets at risk from wildfire include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

It should be noted for all sections below that more specific information may be found in each participating jurisdiction's annex to this Base Plan.

Methodology

As part of the Fire and Resource Assessment Program (FRAP), CAL FIRE was mandated to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as FHSZs, then define the application of various mitigation strategies to reduce risk associated with wildland fires.

Fire hazard is a way to measure the physical fire behavior so that people can predict the damage a fire is likely to cause. Fire hazard measurement includes the speed at which a wildfire moves, the amount of heat the fire produces, and most importantly, the burning fire brands that the fire sends ahead of the flaming front.

The fire hazard model developed by CAL FIRE considers the wildland fuels. Fuel is that part of the natural vegetation that burns during wildfire. The model also considers topography, especially the steepness of the slopes. Fires burn faster as they burn up-slope. Weather (temperature, humidity, and wind) has a significant influence on fire behavior. The model recognizes that some areas of California have more frequent and severe wildfires than other areas. Finally, the model considers the production of burning fire brands (embers) how far they move, and how receptive the landing site is to new fires.

In 2007, CAL FIRE updated its Fire Hazard Severity Zone (FHSZ) maps for the State of California to provide updated map zones, based on new data, science, and technology that will create more accurate zone designations such that mitigation strategies are implemented in areas where hazards warrant these investments. The zones will provide specific designation for application of defensible space and building standards consistent with known mechanisms of fire risk to people, property, and natural resources. The program is still ongoing with fire hazard severity zone maps being updated based on designated responsibility areas: FRA, SRA, and LRA.

CAL FIRE mapped the SRA Fire Hazard Severity Zones (FHSZs), or areas of significant fire hazard, based on fuels, terrain, weather, and other relevant factors. Within the Planning Area, the Alameda Draft (c1fhszl06_1) and Adopted (fhszs06_3_1) datasets were utilized for the analysis and contained all FHSZ hazard classes from Very High to Urban Unzoned. Since it is possible for any given parcel to intersect with multiple categories for purposes of this analysis, the parcel centroid was used to determine which FHSZ to assign to each parcel. Once completed, the parcel boundary layer was joined to the centroid layer and values were transferred based on the identification number in the Assessor's database and the parcel layer. Based on this approach, the FHSZs for the Planning Area were determined and further broken out by land use and included information on both land and improved values.

This methodology is used below for the FHSZ analysis of people and populations, structures, and critical facilities at risk as well as with respect to future development areas.

People and Populations

All populations are at some vulnerability to wildfire. Certain vulnerable populations are at greater risk to the effects of wildfire as well as smoke and air quality issues that wildfires bring. Vulnerable populations include:

- Unhoused
- Infants and children under age five and their caregivers
- Elderly (65 and older)
- Individuals with disabilities
- Individuals' dependent on medical equipment
- Individuals who exercise or recreate outdoors
- Individuals who work outdoors
- Individuals with impaired mobility

Planning Area residents that live in CAL FIRE FHSZs are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to the residential population within the Planning Area, CAL FIRE's wildfire hazard layers were overlayed on the parcel layer and linked to the Assessor data. Those residential parcel centroids that intersect the mapped layers were counted and multiplied by the 2020 Census Bureau average household factors for each jurisdiction. These are shown by jurisdiction in Table 4-94.

Table 4-94 Tri-City Planning Area – Improved Residential Parcels and Population by CAL FIRE Fire Hazard Severity Zone by Jurisdiction

Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Fremont	0	0	4,966	14,848	2,717	8,124
City of Newark	0	0	1,782	5,916	472	1,567
City of Union City	0	0	592	1,995	580	1,955

Source: CAL FIRE, 2020 US Census Bureau – City of Fremont (2.99); City of Newark (3.32); City of Union City 3.37.

These numbers reflect low end estimates as the property use categories based on the Assessor data utilized for this LHMP Update assumes all residential properties are single family residences. However, many of the residential parcels actually include multi-family units, including apartments, condominiums and well as duplexes and triplexes. These variations in residential property use were not accounted for in the analysis, which skews populations results to be lower.

Structures

All structures in the Tri-City Planning Area have some risk to wildfire. GIS was used to determine the possible impacts of wildfire within the Planning Area. Summary analysis results for each jurisdiction in the Planning Area are shown in Table 4-95, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone.

Table 4-95 Tri-City Planning Area – Count and Value of Parcels (and Structures) by CAL FIRE Fire Hazard Severity Zone by Jurisdiction

Jurisdiction / Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Fremont						
Very High	6	0	$0	$0	$0	$0
High	6,528	5,297	$3,363,204,423	$6,276,880,497	$4,457,670,541	$14,097,755,461
Moderate	3,311	2,812	$1,215,755,103	$2,464,416,083	$1,390,706,082	$5,070,877,268
Non-Wildland/Non-Urban	680	447	$274,730,875	$590,653,554	$330,695,278	$1,196,079,707
Urban Unzoned	73,741	69,575	$17,858,811,741	$36,124,692,489	$22,016,492,751	$75,999,996,981
Fremont Total	**84,266**	**78,131**	**$22,712,502,142**	**$45,456,642,623**	**$28,195,564,652**	**$96,364,709,417**
Newark						
Very High	0	0	$0	$0	$0	$0
High	2,441	1,819	$780,191,541	$1,507,491,007	$917,426,257	$3,205,108,805

Jurisdiction / Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Moderate	574	477	$141,642,095	$224,772,940	$149,092,441	$515,507,476
Non-Wildland/Non-Urban	33	1	$8,044,636	$3,339,480	$3,339,480	$14,723,596
Urban Unzoned	14,110	13,089	$3,260,025,941	$6,488,659,703	$4,422,870,921	$14,171,556,565
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**
Union City						
Very High	0	0	$0	$0	$0	$0
High	754	606	$162,252,835	$443,224,895	$320,312,114	$925,789,844
Moderate	636	583	$119,237,193	$270,650,194	$135,588,384	$525,475,771
Non-Wildland/Non-Urban	40	31	$19,220,609	$27,543,990	$13,771,994	$60,536,593
Urban Unzoned	17,172	16,269	$3,696,081,952	$7,920,335,377	$4,961,734,699	$16,578,152,028
Union City Total	**18,602**	**17,489**	**$3,996,792,589**	**$8,661,754,456**	**$5,431,407,191**	**$18,089,954,236**
Alameda County Water District (Service Territory)						
Very High	0	0	$0	$0	$0	$0
High	9,505	7,688	$4,291,952,275	$8,227,226,132	$5,709,072,011	$18,228,250,418
Moderate	4,489	3,859	$1,452,964,881	$2,943,837,767	$1,667,189,572	$6,063,992,220
Non-Wildland/Non-Urban	785	479	$294,108,664	$621,537,024	$347,806,752	$1,263,452,440
Urban Unzoned	105,098	98,983	$24,862,147,444	$50,625,721,307	$31,520,074,702	$107,007,943,453
Alameda County Water District (Service Territory) Total	**119,877**	**111,009**	**$30,901,173,264**	**$62,418,322,230**	**$39,244,143,037**	**$132,563,638,531**
Union Sanitary District (Service Territory)						
Very High	0	0	$0	$0	$0	$0
High	9,252	7,620	$4,161,501,446	$8,162,380,849	$5,649,570,138	$17,973,452,433
Moderate	4,458	3,859	$1,446,208,627	$2,943,837,767	$1,667,189,572	$6,057,235,966
Non-Wildland/Non-Urban	553	477	$289,854,398	$617,960,142	$344,229,870	$1,252,044,410

Jurisdiction / Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Urban Unzoned	105,097	99,003	$24,847,636,121	$50,578,745,538	$31,441,846,516	$106,868,228,175
Union Sanitary (Service Territory) District Total	**119,360**	**110,959**	**$30,745,200,592**	**$62,302,924,296**	**$39,102,836,096**	**$132,150,960,984**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), CAL FIRE

Critical Facilities and Infrastructure, and Community Lifelines

Wildfire presents a threat to critical facilities and infrastructure, and community lifelines. The following analysis identifies critical facilities and infrastructure at risk to wildfire, followed by a discussion of vulnerability of community lifelines.

Critical Facilities and Infrastructure

Analysis of critical facilities in each jurisdiction in the Tri-City Planning Area can be found in their respective annexes to this LHMP Update.

Community Lifelines

Wildfire presents a threat to life and property, including to community lifelines in the Tri-City Planning Area. Community lifelines that would be vulnerable to wildfire include:

- **Safety and Security** –Police, Fire, and EMS personnel are often called on to respond during fire emergencies. This would be especially true if a wildfire occurred in or near the Planning Area. Emergency resources may be stretched during a large event.
- **Food, Hydration, Shelter** – Shelters may need to be opened to handle those displaced by a wildfire. Food and water would need to be provided.
- **Health and Medical** – There may be injuries and deaths from wildfire. Patient movement from accident scenes by EMS may have to be rerouted due to fire or smoke issues. Hospitals could see an influx of injured. Public health can be at risk from air quality issues from smoke.
- **Energy** – Wildfires could impact large areas of above ground electric infrastructure, causing widespread power outages. Even the threat of wildfire can cause power outages when fire weather conditions lead to PSPS events. Fire may cause fuel transportation to be delayed, causing local shortages.
- **Communications** – Communication systems can be damaged during a wildfire. An influx of service calls to dispatch centers for reporting of wildfire, power outages, or other issues can occur. Calls to and from family and friends during a wildfire can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts. Messaging systems need to be deployed during these times to let the public know about road closures or evacuation routes.
- **Transportation** – Highways and local roads may see closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Evacuation routes may be affected and overwhelmed during a large event.

- **Hazardous Material** – hazardous material facilities can be affected by wildfire. A release during these times can cause additional risk to responders, as well as additional exposure to the environment.
- **Water Systems** – Water systems may be taxed during wildfires. Access to water for firefighting can also be a challenge if power outages occur in affected areas. Wastewater systems can also be affected by an increase in silt, debris ash, and other materials entering the systems.

A large wildfire event could temporarily overwhelm many facilities and community lifelines in the Tri-City Planning Area.

Natural, Historic, and Cultural Resources

Natural, historic, and cultural resources located within areas at risk to wildfire would be vulnerable. Should a wildfire occur in the Planning Area, the impacts to natural, historic, and cultural resources could be extensive and include air pollution, contamination from water runoff containing toxic products, and other environmental discharges or releases from burned materials affecting soils, habitat areas, wildlife, and aquatic resources. Historic and cultural resources can be affected and are often more vulnerable due to their older age, construction type, and lack of fire prevention infrastructure such as sprinklers.

Economic Assets and Community Activities of Value

Wildfires in the Planning Area can cause direct damage to economic assets such as businesses and commercial centers located in affected areas. During extreme events, the economy may slow while recovery efforts are prioritized. Business revenue may be reduced during extended events. Community activities and events in areas affected by wildfire (and smoke and air quality issues) may be cancelled or rescheduled.

Impacts from Wildfire

Potential impacts from wildfire include loss of life and injuries; damage to structures (commercial, industrial, and residential) and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the Tri-City Planning Area. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the Planning Area by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water storage capacity, and degrading water quality. Fires can also affect air quality in the Planning Area; smoke and air pollution from wildfires can be a severe health hazard. Smoke impacts may come from wildfires outside the Planning Area, as well as from within.

Although the physical damages and casualties arising from wildland-urban interface fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic

wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

The impacts of a fire are felt long after the fire is extinguished. In addition to the loss of property in fires, the loss in vegetation and changes in surface soils alters the environment. When supporting vegetation is burned, hillsides become destabilized and prone to erosion. The burnt surface soils are harder and absorb less water. When winter rains come, this leads to increased runoff, erosion, and landslides in hilly areas.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

Wildfire smoke can have negative effects to those who live in or near a fire burn area. Smoke and air pollution from wildfires can be a severe health hazard. Significant wildfires occurring in nearby northern California communities since the 2016/2017 (though not 2022) LHMP Updates have created significant air pollution affecting area residents. Planning Area residents have been affected by wildfire smoke and poor air quality, from fires both within the East Bay area and from those much further away. During 2018 during the Camp Fire in Butte County, the Planning Area experienced 13 days of the worst air quality previously experienced in the region. It was reported that during this period, residents could not see to drive or bike or hike as one could not see the trails, or trees, or cars, or other people. This occurred during the Lightning Complex Fire in 2020.

All of these impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

Future Development

Wildfire is taken into account in future development in each of the jurisdictions of the Tri-City Planning area. Information on future development by jurisdiction can be found in each jurisdiction's annex to this Base Plan.

4.3.18. Natural Hazards Summary

Table 4-96 summarizes the results of the hazard identification and hazard profile for the Tri-City Planning Area based on the hazard identification data and input from the various sources utilized in the Risk Assessment, including the Planning Committee. For each hazard profiled in Section 4.3, this table includes the likelihood of future occurrence and whether the hazard is considered a priority hazard for the Tri-City Planning Area based on the hazard profiles and vulnerability assessment.

Priority Hazards

As detailed in the hazard identification section, those hazards identified as a high or medium significance in Table 4-96 are considered priority hazards for mitigation planning. Those hazards that occur infrequently or have little or no impact on each jurisdiction in the Tri-City Planning Area were determined to be of low significance and not considered a priority hazard. Significance was determined based on the hazard profile, focusing on key criteria such as frequency, extent, and resulting damage, including deaths/injuries and property, natural and cultural resources, and economic damage. The ability of a jurisdiction to reduce losses through implementation of existing and new mitigation measures was also considered as to the significance of a hazard. This assessment was used by the Planning Committee to prioritize those hazards of greatest significance to each jurisdiction in the Tri-City Planning Area, enabling the jurisdictions to focus resources where they are most needed.

Table 4-96 Hazard Identification and Initial Determination of Priority Hazards

Hazard	Likelihood of Future Occurrence	Fremont Priority Hazard	Newark Priority Hazard	Union City Priority Hazard	ACWD Priority Hazard	USD Priority Hazard
Climate Change	Highly Likely	Y	Y	Y	N	Y
Coastal Flooding and Sea Level Rise	Highly Likely	Y	Y	Y	N	Y
Dam Failure	Unlikely	Y	Y	Y	Y	N
Drought & Water Shortage	Likely	N	Y	Y	Y	Y
Earthquake	Occasional/ Highly Likely	Y	Y	Y	Y	Y
Flood: 1%/0.2% annual chance	Occasional	Y	Y	Y	N	N
Flood: Localized/Stormwater Flooding	Highly Likely	Y	Y	Y	N	Y
Landslide	Likely	Y	N	Y	N	N
Levee Failure	Unlikely	Y	N	N	N	N
Severe Weather: Extreme Cold and Freeze	Highly Likely	Y	N	N	N	N
Severe Weather: Extreme Heat	Highly Likely	Y	Y	Y	N	Y
Severe Weather: Heavy Rain and Storms	Highly Likely	Y	Y	Y	Y	Y
Severe Weather: High Winds	Highly Likely	Y	N	N	N	N
Subsidence	Likely	N	N	N	N	Y
Tsunami	Unlikely	Y	Y	N	N	N
Wildfire	Highly Likely	Y	N	Y	N	N

4.4 Capability Assessment

A capability assessment for each participating jurisdiction is included in their respective annexes to this Base Plan.

Chapter 5 Mitigation Strategy

44 CFR §201.6(c)(3) and §201.7(c)(3): [The plan shall include] a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

This section describes the mitigation strategy process and mitigation action plan for this Tri-City 2024 LHMP Update. It describes how the all participating jurisdictions met the following requirements from the 10-step planning process:

- Planning Step 6: Set Goals
- Planning Step 7: Review Possible Activities
- Planning Step 8: Draft an Action Plan

5.1 Mitigation Strategy: Overview

The results of the planning process, the risk assessment, the goal setting, the identification of mitigation actions, and the hard work of the Planning Committee led to the mitigation strategy and mitigation action plan for this LHMP Update. As part of the LHMP Update process, a comprehensive review and update of the mitigation strategy portion of the 2016/2017/2022 LHMPs was conducted. Some of the initial goals and objectives from the previous LHMPs were refined and reaffirmed, some goals were deleted, and others were added. The end result was a new set of goals, to reflect the completion of or progress towards the 2016/2017/2022 actions, the updated risk assessment, and the new priorities of participating jurisdictions and this 2024 LHMP Update.

To support the updated mitigation strategy including updated goals, the mitigation actions from 2016/2017/2022 LHMPs were reviewed and assessed for their value in reducing risk and vulnerability to the Tri-City Planning Area from identified hazards and further evaluated for their inclusion in this LHMP Update (See Chapter 2 What's New). Section 5.2 below identifies the new goals and objectives of this 2024 LHMP Update and Section 5.4 details the new mitigation action plan.

Taking all of the above into consideration, the participating jurisdictions and Planning Committee developed the following umbrella mitigation strategy for this LHMP Update:

- Communicate the hazard information collected and analyzed through this planning process as well as mitigation success stories so that the community better understands what can happen where and what they themselves can do to be better prepared.
- Implement the mitigation action plan recommendations of this Plan.
- Use existing rules, regulations, policies, and procedures already in place.
- Monitor multi-objective management opportunities so that funding opportunities may be shared and packaged, and broader constituent support may be garnered.

5.1.1. Continued Compliance with NFIP

Given the nature and extent of the flood hazard in the Tri-City Planning Area, an emphasis will be placed on continued compliance with the National Flood Insurance Program (NFIP) by all communities. The jurisdictional annexes for the three cities, as the three eligible NFIP communities, provide an overview of their flood management programs and continued compliance with the NFIP. For the City of Fremont, the only participating CRS community, their annex also includes a description of their CRS program. While ACWD and USD, as districts, are not eligible NFIP communities many of their mitigation actions and projects contain measures to promote effective floodplain management throughout the Tri-City Planning Area.

5.1.2. Integration of Mitigation with Post Disaster Recovery and Mitigation Strategy Funding Opportunities

Hazard mitigation actions are essential to weaving long-term resiliency into all community recovery efforts so that at-risk infrastructure, development, and other community assets are stronger and more resilient for the next severe storm event. Mitigation measures to reduce the risk and vulnerability of a community to future disaster losses can be implemented in advance of a disaster event and also as part of post-disaster recovery efforts.

Mitigation applied to recovery helps communities become more resilient and sustainable. It is often most efficient to fund eligible infrastructure mitigation through FEMA's Public Assistance mitigation program if the asset was damaged in a storm event. Mitigation work can be added to project worksheets if they can be proven to be cost-beneficial.

Integration of mitigation into post disaster recovery efforts should be considered by all communities as part of their post disaster redevelopment and mitigation policies and procedures. Ppost-disaster redevelopment and mitigation policies and procedures are evaluated and updated as part of the Emergency Operations Plan (EOP) updates and other emergency management plans for each community.

These EOP's and other emergency management documents, through its policies and procedures, seek to mitigate the effects of hazards, prepare for measures to be taken which will preserve life and minimize damage, enhance response during emergencies and provide necessary assistance, and establish a recovery system in order to return the community to their normal state of affairs. Mitigation is emphasized as a major component of recovery efforts.

Mitigation Strategy Funding Opportunities

An understanding of the various funding streams and opportunities enable the communities to match identified mitigation projects with the grant programs that are most likely to fund them. Additionally, some of the funding opportunities can be utilized together. Mitigation grant funding opportunities available pre- and post- disaster include the following.

FEMA HMA Grants

Cal OES administers four main types of HMA grants: (1) Hazard Mitigation Grant Program, (2) Pre-Disaster Mitigation Program, (3) Flood Mitigation Assistance Program, and (4) Building Resilient Infrastructure and Communities. Eligible applicants for the HMA include state and local governments, certain private non-profits, and federally recognized Indian tribal governments. While private citizens cannot apply directly for the grant programs, they can benefit from the programs if they are included in an application sponsored by an eligible applicant.

FEMA Public Assistance Section 406 Mitigation

The Robert T. Stafford Disaster Relief and Emergency Assistance Act provides FEMA the authority to fund the restoration of eligible facilities that have sustained damage due to a presidentially declared disaster. The regulations contain a provision for the consideration of funding additional measures that will enhance a facility's ability to resist similar damage in future events.

Community Development Block Grants

The California Department of Housing and Community Development administers the State's Community Development Block Grant (CDBG) program with funding provided by the U.S. Department of Housing and Urban Development. The program is available to all non-entitlement communities that meet applicable threshold requirements. All projects must meet one of the national objectives of the program – projects must benefit 51 percent low- and moderate-income people, aid in the prevention or clearance of slum and blight, or meet an urgent need. Grant funds can generally be used in federally declared disaster areas for CDBG eligible activities including the replacement or repair of infrastructure and housing damaged during, or as a result of, the declared disaster.

Small Business Loans

SBA offers low-interest, fixed-rate loans to disaster victims, enabling them to repair or replace property damaged or destroyed in declared disasters. It also offers such loans to affected small businesses to help them recover from economic injury caused by such disasters. Loans may also be increased up to 20 percent of the total amount of disaster damage to real estate and/or leasehold improvements to make improvements that lessen the risk of property damage by possible future disasters of the same kind.

Increased Cost of Compliance

Increased Cost of Compliance (ICC) coverage is one of several resources for flood insurance policyholders who need additional help rebuilding after a flood. It provides up to $30,000 to help cover the cost of mitigation measures that will reduce flood risk. ICC coverage is a part of most standard flood insurance policies available under NFIP.

5.2 Goals and Objectives

Requirement 44 CFR §201.6(c)(3)(i) and §201.7(c)(3)(i): [The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Up to this point in the planning process, the participating jurisdictions, along with the Planning Committee, have organized resources, assessed hazards and risks, and documented mitigation capabilities. The resulting goals, objectives, and mitigation actions were developed based on these tasks. The Planning Committee held a series of meetings and exercises designed to achieve a collaborative mitigation strategy as described further throughout this section. Appendix C documents the information covered in these mitigation strategy meetings, including information on the goals development and the identification and prioritization of mitigation alternatives by the Planning Committee.

During the initial goal-setting meeting, the Planning Committee reviewed the results of the hazard identification, vulnerability assessment, and capability assessment. This analysis of the risk assessment identified areas where improvements could be made and provided the framework for the Planning Committee to formulate planning goals and objectives and to develop the mitigation strategy for the Tri-City Planning Area.

Goals were defined for the purpose of this mitigation plan as broad-based public policy statements that:

- Represent basic desires of the community;
- Encompass all aspects of community, public and private;
- Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;
- Are future-oriented, in that they are achievable in the future; and
- Are time-independent, in that they are not scheduled events.

Goals are stated without regard to implementation. Implementation cost, schedule, and means are not considered. Goals are defined before considering how to accomplish them so that they are not dependent on the means of achievement. Goal statements form the basis for objectives and actions that will be used as means to achieve the goals. Objectives define strategies to attain the goals and are more specific and measurable.

Planning Committee members were provided with the list of goals from the 2016/2017/2022 LHMPs as well as a list of other sample goals to consider. The team was told that they could use, combine, or revise the statements provided or develop new ones, keeping the risk assessment in mind. Each member was asked to provide three goal statements. Goal statements were collected and grouped into similar themes and provided to the Planning Committee. Some of the statements were determined to be better suited as objectives or actual mitigation actions and were set aside for later use. Next, the Planning Committee developed objectives that summarized strategies to achieve each goal. Edits and refinements to these new goals and resulting objectives were provided by the Planning Committee until the team came to consensus on the final goals and objectives for this 2024 LHMP Update.

Based on the risk assessment review and goal setting process, the Planning Committee identified the following goals, which provide the direction for reducing future hazard-related losses within the Tri-City Planning Area.

GOAL 1: Reduce risk and vulnerability of the Tri-City Planning Area to natural hazards (including climate change considerations) and prevent injuries, loss of life, and damage to property, economy, and the environment.

Objectives

- Minimize damage to homes, businesses, and public facilities.
- Promote public health and safety.
- Make every effort to reduce the impacts of hazards and disasters to potable and rechargeable water systems, as well as to wastewater systems.
- Promote a disaster resilient and healthy community that adapts to changing climate conditions and mitigates the effects of hazard impacts.
- Plan for and implement whole community risk reduction and resiliency strategies.
- Identify and integrate mitigation strategies into capital improvement programs.
- Reduce risk and vulnerability through the equitable and accessible planning and implementation of hazard mitigation actions and priorities.

GOAL 2: Provide protection and minimize impacts to critical facilities, infrastructure, and community lifelines. Create redundancy and reliability to significantly reduce risk of interruption or failure, minimize loss and the impacts of a disaster, and facilitate recovery.

Objectives:

- Identify and implement infrastructure improvements and risk reduction measures to ensure reliability and readiness before, during, and after a disaster.
- Identify and secure emergency equipment and resources vital to effective disaster mitigation, response, and recovery efforts.
- Develop contingency plans to reduce critical facility and infrastructure failures.

GOAL 3: Promote public education, awareness, and understanding of natural hazards and the risk and vulnerability they present to quality of life, property, environment, and the economy.

Objectives:

- Utilize a wide range of outreach and educational tools to engage and educate the whole community, including actions to take before, during, and after a hazard event to build a disaster resistant community.
- Foster a culture of resilience by energizing and educating the community.
- Encourage individual responsibility and self-sufficiency to minimize impacts to natural hazards.
- Establish and outreach evacuation routes and options for sheltering in place for all hazards including potentially large-scale disasters associated with earthquake and dam failure.

Goal 4: Build capacity and capabilities to increase disaster resilience for all hazards with a focus on the whole community.

Objectives:

- Develop and enhance public alert and warning capabilities and effectively communicate to the public.
- Build and support local capacity and reduce barriers to enable the community to prepare for, respond to, and recover from natural disasters.
- Establish and enhance interagency and public-private collaboration and relationships, data sharing, use of shared resources, and mitigation partnerships to reduce hazard related losses, and accelerate recovery, while being respectful of limited tax resources.
- Establish a financial plan specific to hazard mitigation, preparedness, response, and recovery efforts.
- Increase use of new technologies and high-quality data.
- Identify and enhance resources necessary to support implementation of capital projects and improvements that effectively mitigate hazards and impacts to the community.
- Develop and provide temporary response and recovery capabilities as needed to support communications, food and shelter, and other resources.
- Promote sharing of emergency plans and procedures with all regional partners, including critical partners such as the Red Cross.

Goal 5: Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards.

Objectives:

- Preserve and protect natural resources.
- Integrate and maximize the integration of natural and beneficial functions of environmental resources into mitigation actions and projects where feasible.
- Mitigate undesirable disaster outcomes for the environment, watersheds, and quality of life.

Goal 6: Integrate mitigation principles and strategies into laws, regulations, policies, and guidance to promote cross -functional planning and regulatory initiatives and to support equitable outcomes to benefit the whole community.

Objectives:

- Increase disaster resilience among historically underserved populations, individuals with a disability or access and functional needs, and communities disproportionately impacted by disasters and climate change.

Goal 7: Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake outcomes.

Objectives:

- Make life safety a priority.
- Make every effort to reduce impacts of earthquake to potable and rechargeable water systems and to wastewater systems.

- Conduct comprehensive, interagency earthquake planning to include mitigation strategies, education and outreach, and detailed procedures for response and recovery.
- Mitigate secondary hazards associated with earthquake events including fire ignition and spread and prioritize measures for minimizing impacts to critical facilities, infrastructure, and community lifelines.

5.3 Identification and Analysis of Mitigation Actions

Requirement: 44 CFR §201.6(c)(3)(ii) and §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In order to identify and select mitigation actions to support the mitigation goals, each hazard identified in Section 4.1 was evaluated at the completion of the risk assessment as part of the second prioritization process to determine which hazards were priorities for mitigation strategy planning. Only those hazards that were determined to be a priority hazard for each participating jurisdiction were considered further in the development of hazard-specific mitigation actions. Those hazards not considered a priority for mitigation strategy development were eliminated from further consideration because the risk of a hazard event to the participating jurisdiction is unlikely, the vulnerability of the participating jurisdiction is low, or capabilities are already in place to mitigate negative impacts. Further, the resulting mitigation strategy presented in this Chapter focuses on those mitigation actions that each jurisdiction has the authority, resources, and capacity to consider for implementation over the next 5-years covered by this LHMP Update. Table 5-1 provides a listing of priority hazards by jurisdiction to be addressed in the mitigation strategy portion of this Plan.

Table 5-1 Tri-City Planning Area: Mitigation Action Priority Hazards by Jurisdiction

Hazard	Fremont Priority Hazard	Newark Priority Hazard	Union City Priority Hazard	ACWD Priority Hazard	USD Priority Hazard
Climate Change	Y	Y	Y	N	Y
Coastal Flooding and Sea Level Rise	Y	Y	Y	N	Y
Dam Failure	Y	Y	Y	Y	N
Drought & Water Shortage	N	Y	Y	Y	Y
Earthquake	Y	Y	Y	Y	Y
Flood: 1%/0.2% annual chance	Y	Y	Y	N	N
Flood: Localized/Stormwater Flooding	Y	Y	Y	N	Y
Landslide	Y	N	Y	N	N
Levee Failure	Y	N	N	N	N
Severe Weather: Extreme Cold and Freeze	Y	N	N	N	N
Severe Weather: Extreme Heat	Y	Y	Y	N	N
Severe Weather: Heavy Rain and Storms	Y	Y	Y	Y	Y

Hazard	Fremont Priority Hazard	Newark Priority Hazard	Union City Priority Hazard	ACWD Priority Hazard	USD Priority Hazard
Severe Weather: High Winds and Tornadoes	Y	N	N	N	N
Subsidence	N	N	N	N	Y
Tsunami	Y	Y	N	N	N
Wildfire	Y	N	Y	N	N

It is important to note, however, that all the Hazards addressed in this LHMP are included in the multi-hazard public awareness mitigation actions as well as in other multi-hazard, emergency management actions, and other hazard-specific actions, providing benefits to all participating jurisdictions to this 2024 LHMP Update.

Once it was determined which hazards warranted the development of specific mitigation actions, the participating jurisdictions and Planning Committee analyzed viable mitigation options that supported the identified goals and objectives. The Planning Committee was provided with the following list of categories of mitigation actions, which originate from the Community Rating System:

- Prevention
- Property protection
- Structural projects
- Natural resource protection
- Emergency services
- Public information

The Planning Committee was provided with examples of potential mitigation actions for each of the above categories. The Planning Committee was also instructed to consider both future and existing buildings in considering possible mitigation actions. A facilitated discussion then took place to examine and analyze the options. Appendix C provides a detailed review and discussion of the six mitigation categories to assist in the review and identification of possible mitigation activities or projects. Also utilized in the review of possible mitigation measures is FEMA's publication on Mitigation Ideas, by hazard type. Prevention type mitigation alternatives were discussed for each of the priority hazards. This was followed by a brainstorming session that generated a list of preferred mitigation actions by hazard.

5.3.1. Prioritization Process

Once the mitigation actions were identified, the Planning Committee was provided with several decision-making tools, including FEMA's recommended prioritization criteria, STAPLEE sustainable disaster recovery criteria; Smart Growth principles; and others, to assist in deciding why one recommended action might be more important, more effective, or more likely to be implemented than another. STAPLEE stands for the following:

- Social: Does the measure treat people fairly? (e.g., different groups, different generations)
- Technical: Is the action technically feasible? Does it solve the problem?

- Administrative: Are there adequate staffing, funding, and other capabilities to implement the project?
- Political: Who are the stakeholders? Will there be adequate political and public support for the project?
- Legal: Does the jurisdiction have the legal authority to implement the action? Is it legal?
- Economic: Is the action cost-beneficial? Is there funding available? Will the action contribute to the local economy?
- Environmental: Does the action comply with environmental regulations? Will there be negative environmental consequences from the action?

In accordance with the DMA requirements, an emphasis was placed on the importance of a benefit-cost analysis in determining action priority. Other criteria used to assist in evaluating the benefit-cost of a mitigation action includes:

- Contribution of the action to save life or property
- Availability of funding and perceived cost-effectiveness
- Available resources for implementation
- Ability of the action to address the problem

The initial list of mitigation actions from the 2016/2017/2022 LHMPs and new actions identified during this planning process were reviewed and prioritized using the criteria (alternatives and selection criteria) in Appendix C.

With these criteria in mind, the Planning Committee were each given a set of nine colored dots, three each of red, blue, and green. The dots were assigned red for high priority (worth five points), blue for medium priority (worth three points), and green for low priority (worth one point). The Planning Committee was asked to use the dots to prioritize actions with the above criteria in mind. The point score for each action was totaled. Appendix C contains the total score given to each identified mitigation action.

The process of identification and analysis of mitigation alternatives allowed the Planning Committee to come to consensus and to prioritize recommended mitigation actions. During the voting process, emphasis was placed on the importance of a benefit-cost review in determining project priority; however, this was not a quantitative analysis. The team agreed that prioritizing the actions collectively enabled the actions to be ranked in order of relative importance and helped steer the development of additional actions that meet the more important objectives while eliminating some of the actions which did not garner much support.

Benefit-cost was also considered in greater detail in the development of the Mitigation Action Plan detailed below in Section 5.4 The cost-effectiveness of any mitigation alternative will be further considered in greater detail through performing benefit-cost project analyses when seeking FEMA mitigation grant funding for eligible actions associated with this 2024 LHMP Update.

Recognizing the limitations in prioritizing actions from multiple jurisdictions and departments and the regulatory requirement to prioritize by benefit-cost to ensure cost-effectiveness, the participating jurisdictions and Planning Committee decided to pursue actions that contributed to saving lives and property as first and foremost, with additional consideration given to the benefit-cost aspect of a project. This process drove the development of a determination of a high, medium, or low priority for each mitigation action, and a comprehensive prioritized mitigation action plan for the Tri-City Planning Area.

5.4 Mitigation Action Plan

Requirement 44 CFR §201.6(c)(3)(iii) and §201.7(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

This mitigation action plan was developed to present the recommendations developed by the Planning Committee for how the Tri-City Planning Area can reduce the risk and vulnerability of people, property, critical facilities and infrastructure, and natural and cultural resources to future disaster losses. Emphasis was placed on both future and existing development. This mitigation action plan summarizes who is responsible for implementing each of the prioritized actions as well as when and how the actions will be implemented. Each action summary also includes a discussion of the benefit-cost review conducted to meet the regulatory requirements of the Disaster Mitigation Act.

Table 5-2 identifies all mitigation actions for participating jurisdictions to this LHMP Update. For each mitigation action item included in Table 5-2, a detailed mitigation implementation strategy has been developed. The detailed descriptions for each mitigation action are included in each respective jurisdictional annex to this LHMP.

The mitigation action plan summarized below contains both new action items developed for this 2024 LHMP Update as well as old actions that were yet to be completed from the 2016/2017/2022 LHMPs. Table 5-2 indicates whether the action is new or from the 2016/2017/2022 LHMPs and Chapter 2 contains the details for each 2016/2017/2022 mitigation action item indicating whether a given action item has been completed, deleted, or deferred.

As described throughout this 2024 LHMP Update, the Tri-City Planning Area has many risks and vulnerabilities to identified hazards. Although many possible mitigation actions, as detailed in Appendix C, were brainstormed and prioritized during the mitigation strategy meetings, the resulting mitigation strategy presented in this Chapter 5 of this LHMP focuses only on those mitigation actions that are both reasonable and realistic for the communities to consider for implementation over the next 5-years covered by this 2024 Update. Thus, only a portion of the actions identified in Appendix C have been carried forward into the mitigation strategy presented in Table 5-2. Although many good ideas were developed during the mitigation action brainstorming process, the reality of determining which priority actions to develop and include in this LHMP Update came down to the actual priorities of communities, individuals and departments based in part on department direction, staffing, and available funding. The overall value of the mitigation action table in Appendix C is that it represents a wide-range of mitigation actions that can be consulted and developed for this LHMP Update during annual plan reviews and the formal 5-year update process.

It is also important to note that the participating jurisdictions have numerous existing, detailed action descriptions, which include benefit-cost estimates, in other planning documents, such as stormwater and drainage plans, flood and water management plans, climate plans, and capital improvement budgets and reports. These actions are considered to be part of this LHMP, and the details, to avoid duplication, should

be referenced in their original source document. The Planning Committee also realizes that new needs and priorities may arise as a result of a disaster or other circumstances and reserves the right to support new actions, as necessary, as long as they conform to the overall goals of this LHMP Update.

Further, it should be clarified that the actions included in this mitigation strategy are subject to further review and refinement; alternatives analyses; and reprioritization due to funding availability and/or other criteria. The participating jurisdictions are not obligated by this document to implement any or all of these projects. Rather this mitigation strategy represents the desires of the jurisdictions to mitigate the risks and vulnerabilities from identified hazards. The actual selection, prioritization, and implementation of these actions will also be further evaluated in accordance with the mitigation categories and criteria contained in Appendix C.

It should be noted that many of the projects submitted by each jurisdiction in Table 5-2 benefit all jurisdictions whether or not they are the lead agency. Further, many of these mitigation efforts are collaborative efforts among multiple local, state, and federal agencies. In addition, the public outreach actions, as well as many of the emergency services actions, apply to all hazards regardless of hazard priority. Collectively, this multi-jurisdictional mitigation strategy includes only those actions and projects which reflect the actual priorities and capacity of each jurisdiction to implement over the next 5-years covered by this 2024 LHMP Update.

Table 5-2 Tri-City Planning Area Mitigation Actions

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Fremont Actions					
Multi-Hazard Actions					
Action 1. In the Safety Element of the General Plan, update reference to the Local Hazard Mitigation Plan.	New Action	X	X		Public Information, Prevention, Property Protection
Action 2. Promote multi-hazard home mitigation strategies through public education and outreach.	2016 Action (modified)	X	X	X	Public Information, Prevention, Property Protection
Action 3. In the *Fremont Municipal Code*, continuously adopt, or exceed, California Building Code standards.	2016 Action (modified)	X	X		Prevention, Property Protection
Action 4. Maintain and expand auxiliary power capabilities at identified Critical Facilities.	2016 Action (modified)				Emergency Services, Structural Projects
Action 5. Enhance GIS mapping of natural hazard risks, with Critical Facilities and Lifeline overlays.	2016 Action (modified)				Prevention, Emergency Services
Action 6. Enhance GIS mapping of real-time threat and hazard conditions, with Emergency Services overlays.	2016 Action (modified)				Emergency Services, Public Information
Action 7. Improve failover data and voice communications capabilities in support of emergency response and continuity of operations.	2016 Action (modified)				Emergency Services
Action 8. Study the feasibility of constructing a new emergency operations center facility.	New Action				Emergency Services
Action 9. Enhance Public Alert and Warning capabilities.	New Action				Public Information, Emergency Services
Action 10. Improve the resilience and safety of electrical and natural gas utilities.	New Action	X	X		Prevention, Structural Projects
Climate Change Actions					
Action 11. Implement *Climate Ready Fremont*.	2016 Action	X	X		Prevention, Natural Resource Protection
Action 12. Implement the *Urban Forest Management Plan*.	New Action	X	X		Prevention, Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 13. Prioritize growth in transit-oriented development areas, as identified in the General Plan, and along designated corridors intersecting those areas. Preserve open space in shoreline and hill areas.	New Action	X	X		Property Protection, Natural Resource Protection
Coastal Flooding and Sea Level Rise; Dam Failure; Flood: 1%/0.2%, Localized Flooding; Levee Failure; Severe Weather: Heavy Rain and Storms, Wind Actions					
Action 14. Maintain or improve the City of Fremont's National Flood Insurance Program, Community Rating System classification.	2016 Action	X	X	X	Prevention, Property Protection, Natural Resource Protection, Emergency Services, Public Information
Action 15. CRS Activities 310-370: Maintain and expand Public Information regarding flood risk, conducting regular public outreach.	New Action	X	X	X	Prevention, Public Information, Property Protection
Action 16. CRS Activities 410-450: Maintain and update floodplain Mapping and Regulations	New Action	X	X	X	Prevention, Public Information, Natural Resource Protection
Action 17. Conduct flood damage reduction projects, including but not limited to regular drainange system maintenance and projects to identify, assess, and mitigate flood damage and impacts.	2016 Action (modified)	X	X	X	Prevention, Natural Resource Protection, Structural Projects
Action 18. CRS Activities 610-630: Maintain and improve flood Warning and Response capabilities.	New Action	X	X	X	Public Information, Emergency Services, Structural Projects
Action 19. Prevent and protect against embankment failure and flood-induced debris flows along waterways located within City-owned properties.	New Action	X	X	X	Prevention, Property Protection
Action 20. Become a recognized National Weather Service StormReady® community.	New Action	X	X	X	Public Information, Emergency Services
Action 21. Coordinate with owners of Extremely High Hazard and High Hazard dams which may inundate areas of Fremont by reviewing Emergency Action Plans, providing updated emergency contacts, and participating in periodic exercises.	New Action	X	X	X	Public Information, Emergency Services
Earthquake Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 22. Assess the status of all buildings subject to the "Earthquake Hazard Reduction and Retrofit" provisions of the *Fremont Municipal Code*. Conduct enforcement of any subject buildings which do not comply.	2016 Action (modified)	X			Prevention, Property Protection
Action 23. Develop seismically resilient water supply solutions to support post-earthquake firefighting operations.	2016 Action (modified)	X	X		Property Protection, Structural Projects, Emergency Services
Action 24. Evaluate seismic risk to Lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling.	New Action	X	X		Structural Projects
Action 25. Ensure development complies with the Alquist-Priolo Earthquake Fault Zone Act, and otherwise avoid development of public facilities or intensive residential, commercial, or industrial development in the immediate vicinity of the Hayward Fault.	New Action		X		Property Protection
Action 26. Implement earthquake early warning technologies to protect emergency services and the public.	New Action	X	X		Public Information Emergency Services Property Protection
Landslide Actions					
Action 27. Land protection from landslides through geotechnical monitoring	2016 Action (modified)	X	X		Prevention. Property Protection, Natural Resource Protection
Action 28. Prevent and protect against landslide and mudslides through slope stabilization, retaining walls, and other improvements.	New Action	X	X		Prevention. Property Protection, Natural Resource Protection
Tsunami Actions					
Action 29. Post Tsunami Zone and Tsunami Evacuation Route signage in designated Tsunami Hazard Areas.	New Action	X	X	X	Public Information
Action 30. Become a recognized National Weather Service TsunamiReady® community.	New Action	X	X	X	Public Information, Emergency Services
Wildfire Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 31. Conduct vegetation management on public and private property to reduce wildfire risk.	2016 Action (modified)	X	X		Prevention, Property Protection, Natural Resource Protection
Action 32. Support neighborhood-based applications to become recognized Firewise USA® Communities, in accordance with National Fire Prevention Association standards.	New Action	X	X		Prevention, Property Protection, Natural Resource Protection
Action 33. In areas prone to wildfire, prevent and protect against heat-induced failure of roadways and utilities by using heat-resistant construction materials.	New Action	X	X		Prevention, Structural Projects
Action 34. Improve air filtration systems at select public facilities (i. e., those otherwise fit to function as Air Quality Relief Centers) to effectively mitigate the effects of wildfire smoke.	New Action				Emergency Services
City of Newark Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	New Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	New Action	X	X		Public Information
Action 3. Continuously adopt the most current building standards and include appendices to mitigate hazards such as but not limited to Floods, Wildfires, and Earthquake.	New Action	X	X	X	Prevention
Action 4. Hardening and Retrofit of Existing Facilities	New Action	X	X		Prevention Emergency Services Property Protection
Action 5. Critical Facilities Back-Up Power	2017 Action	X	X		Prevention Emergency Services Property Protection
Action 6. Update and enhance the GIS data systems and mapping for water-related climate hazards / Mapping Water-Related Climate Hazards	New Action	X	X		Prevention
Climate Change Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 7. Sea Level Rise Resiliency Plan	2017 Action	X	X	X	Prevention
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 8. Maintain good standing under NFIP and create public outreach program and awareness	New Action	X	X	X	Prevention Public Information
Action 9. Partner with Alameda County Flood Control and Water Conservation District (ACFCD) to identify mitigation option for various projects	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 10. Alameda County Flood Control and Water Conservation Water District (ACFCD) Line H and Line I Improvements	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 11. Install storm drainage improvements at Lindsay Tract	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 12. Develop a Storm Drain Master Plan	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 13. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners	New action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Earthquake and Tsunami Actions					
Action 14. Complete railroad overcrossing at Central Avenue	2017 Action	X	X		Structural Projects
Action 15. Establish Tsunami zone & evacuation route signage in City's designated areas and education program	New action	X	X		Prevention Property Protection Natural Resource Protection
Wildfire and Severe Weather Extreme Heat Actions					
Action 16. Replace Eucalyptus Groves with non-hazardous tree species	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 17. Urban Forest Master Plan development	2017 Action	X	X		Prevention Property Protection Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Union City Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	2017 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	2017 Action	X	X	X	Public Information
Action 3. Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.	2017 Action	X	X		Emergency Services
Action 4. Incident Commanders Established And ICS Trained	2017 Action	X	X		Emergency Services
Action 5. Acquire Two Emergency Mobile Command Centers	2017 Action	X	X		Emergency Services
Action 6. Acquire four radio charging stations for spare radios	2017 Action	X	X		Emergency Services
Action 7. Consider Participation in Incentive-Based Programs such as the Community Rating System, Tree City and Storm Ready.	2017 Action	X	X	X	Prevention
Action 8. Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated alternate EOC site.	2017 Action	X	X		Emergency Services
Action 9. Acquire Emergency Generators for the City's Critical Facilities, Specifically Fire Station #31, Senior Center, and Corporation Yard	2017 Action	X	X		Property Protection Property Protection
Action 10. Conduct a Feasibility Study to Identify Temporary Morgue Facilities	2017 Action	X	X		Emergency Services
Action 11. Develop a Disaster Debris Management Plan	2017 Action	X	X	X	Prevention Emergency Services
Action 12. Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources.	New Action	X	X		Prevention Property Protection Natural Resource Protection
Action 13. Conduct a Feasibility Study to Review Necessary Improvement Required to Make Critical Facilities for Recovering Families After Crisis	New Action	X	X		Prevention Emergency Services

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 14. Establish a Broadband-WiFi network in the Station District	2017 Action	X	X		Prevention Emergency Services
Action 15. Establish a Broadband-WiFi Network Backbone Infrastructure along Major Throughfares Throughout the City.	2017 Action	X	X		Prevention Emergency Services
Climate Change Actions					
Action 16. Climate Action Plan Update	New Action	X	X	X	Prevention Property Protection Natural Resource Protection
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 17. Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	2017 Action	X	X	X	Prevention
Action 18. Implement Stormwater Master Plans	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 19. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners	New Action	X	X		Prevention Property Protection Natural Resource Protection
Drought Actions					
Action 20. Develop and Maintain a Landscape Design Manual to Provide General Guidance and Education to the Public on Water efficiency in Landscaping and to serve as a Resource for Water Efficient Landscape design and Installation Including lists of Recommended Site Appropriate Native and Drought-Tolerant Plant Species.	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Earthquake and Tsunami Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 21. Work with ACWD to Design and Install Seismically Resilient Backbone Pipeline through Liquefaction Soils in Union City.	2017 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 22. Conduct a Feasibility Study to Review the Highway Overpass Bridge of Alvarado-Niles Rd. over I-880, for any Seismic Upgrades.	2017 Action	X	X		Structural Projects
Action 23. Coordinate with the City of Hayward to Conduct a Feasibility Study to Review any Seismic Upgrades for the I-880 Overpass over Whipple Road	2017 Action	X	X		Structural Projects
Action 24. Construct Grade Separations on the Niles Subdivisions and the Oakland Subdivision in the Decoto Neighborhood and on the Coast Subdivision on Union City Blvd, Smith Street, Dyer Street, and Alvarado Blvd.	2017 Action	X	X		Structural Projects
Wildfire and Severe Weather Extreme Heat Actions					
Action 25. Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous or dead trees.	2017 Action	X	X		Prevention Natural Resource Protection
Action 26. Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources	2017 Action	X	X		Prevention Natural Resource Protection
ACWD Actions					
Multi-Hazard Actions					
Action 1. Develop and maintain an asset management program that tracks natural hazard events.	2022 Action	X	X	X	Prevention
Action 2. Reevaluate standby generator needs and purchase and install as needed	2022 Action	X	X		Prevention Emergency Services Property Protection
Action 3. Retrofit and/or update District tanks and reservoirs to improve seismic resilience.	2022 Action	X	X		Property Protection Structural Projects
Action 4. Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.	2022 Action	X	X		Prevention Emergency Services Property Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 5. Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.	2022 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 6. As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.	2022 Action	X	X		Prevention Property Protection Emergency Services
Action 7. Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.	2022 Action	X	X		Prevention Property Protection Emergency Services
Action 8. Continue to participate in local emergency response trainings and exercises.	2022 Action	X	X		Emergency Services
Action 9. Continue to integrate the capital improvement program with the LHMP.	2022 Action	X	X		Prevention Property Protection Structural Projects Emergency Services Natural Resource Protection
Drought and Water Shortage					
Action 10. Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.	2022 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 11. Install a second Deep Aquifer water well at the Mowry Wellfield.	2022 Action	X	X		Prevention Emergency Services Property Protection Natural Resource Protection
Action 12. Blend Facility for PFAS.	2022 Action	X	X		Prevention Structural Projects
Action 13. Complete a redesign of blending facility to allow low production and neat chemical feed.	2022 Action				Prevention Structural Projects
Action 14. Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.	2022 Action				Structural Projects Property Protection Natural Resource Protection
Earthquake Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 15. Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 16. Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 17. Enhance Booster Pumping to the Upper Zones (for example PR-1 or Seven Hills)	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
USD Actions					
Multi-Hazard Actions					
Action 1. Public Education Outreach	2017 Action	X	X		Property Protection Emergency Services
Action 2. Enhanced Treatment and Site Upgrade (ETSU)- Phase 1A Campus Building and Aeration Basin Modifications; Phase 1B Secondary Clarifiers & Effluent Facilities; Phase 1C Plant Equalization Storage	2017 Action	X	X		Property Protection Structural Projects
Climate Change Actions					
Action 3. Irvington Pump Station Solar & Battery Project	New Action	X	X		Property Protection Emergency Services
Action 4. Battery Storage & 3rd Cogen	New Action	X	X		Public Information
Sea Level Rise, Earthquake Actions					
Action 5. Field Ops Building Seismic Upgrade	2017 Action	X	X		Property Protection Structural Projects
Drought/Water Shortage Actions					
Action 6. Digester #8	New Action	X	X		Property Protection Structural Projects
Earthquake Actions					
Action 7. Seismic Retrofit of Concrete Structures	2017 Action	X	X		Property Protection Structural Projects
Action 8. Newark Pump Station Emergency Outfall	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 9. Seismic upgrade of Primary Clarifier 1-4	2017 Action	X	X		Property Protection Structural Projects

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Sea Level Rise, Subsidence Actions					
Action 10. Forcemain Alameda Creek Crossing Ground Stabilization	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection

Chapter 6 Plan Adoption

44 CFR §201.6(c)(5): [The local hazard mitigation plan shall include] documentation that the plan has been formally approved by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, county commissioner, Tribal Council).

The purpose of formally adopting this 2024 LHMP Update is to secure buy-in from each participating jurisdiction, raise awareness of the Plan, and formalize the Plan's approval and implementation. The adoption of this LHMP Update completes Planning Step 9 of the 10-step planning process: Adopt the Plan, in accordance with the requirements of DMA 2000. For the three incorporated communities this adoption resolution also includes compliance with AB 2140 requiring adoption by reference or incorporation into the Safety Element of the General Plan. Two resolutions were created – one for the three incorporated communities and one for the two Special Districts.

The governing board for each jurisdiction has adopted this 2024 LHMP Update by passing a resolution. A copy of the generic resolutions is included in Appendix D: Adoption Resolution.

Chapter 7 Plan Implementation and Maintenance

44 CFR §201.6(c)(4): [The plan maintenance process shall include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Implementation and maintenance of this 2024 Tri-City LHMP Update is critical to the success of hazard mitigation in the Tri-City Planning Area. Plan implementation and maintenance is Planning Step 10 of the 10-step planning process. Accordingly, this chapter provides an overview of the overall strategy for Plan implementation and maintenance and outlines the method and schedule for monitoring, updating, and evaluating the Plan. The chapter also discusses incorporating the Plan into existing planning mechanisms and how to address continued public involvement in local hazard mitigation planning.

Chapter 3, Planning Process, includes information on the implementation and maintenance process since the adoption of the 2016/2017/2022 LHMP Updates. This chapter includes information on the implementation and maintenance process for the development of this Plan, the 2024 LHMP Update.

7.1 Implementation

Once adopted, this 2024 Tri-City LHMP Update faces the truest test of its worth: implementation. While the Plan contains many worthwhile actions, the participating jurisdictions – the Cities of Fremont, Newark, and Union City; ACWD; and USD – will need to decide which action(s) to undertake first. Two factors should be considered when making that decision: the priority assigned to the Mitigation Actions in the Plan and funding availability. Low or no-cost actions most easily demonstrate progress toward successful Plan implementation.

An important implementation mechanism that is highly effective and low-cost is incorporation of the hazard mitigation plan recommendations and their underlying principles into other plans and mechanisms such as local general plans, stormwater plans, Emergency Operations Plans (EOPs), evacuation plans, and other hazard and emergency management planning efforts by the participating jurisdictions. These jurisdictions already implement policies and programs to reduce losses to life and property from hazards. This 2024 LHMP Update builds upon the momentum developed through prior, related planning and mitigation programs and recommends implementing actions, where possible, through other programs.

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. Implementation can be accomplished by adhering to the schedules identified for each action through sustained collaborative efforts, highlighting the mutual benefits of proposed mitigation actions, and the Tri-City jurisdictions, its stakeholders, and the public. This is achieved through the routine actions of monitoring agendas, attending meetings, and promoting mitigation initiatives to enhance the safety and sustainability of the community. Additional mitigation strategies may include consistent and ongoing enforcement of existing policies and the vigilant review of programs for coordination and multi-objective opportunities to enhance mitigation.

Simultaneously, it is important to continuously monitor potential funding opportunities to finance mitigation actions. This may include identifying funding sources to meet local matching funds requirements under FEMA pre- and post-disaster mitigation grant programs, and other sources. When funding does become available, the participating jurisdictions will be better positioned to capitalize on the opportunity.

Responsibility for Implementation of Goals and Activities

The elected officials, executive leadership teams, responsible staff and departments, and emergency management offices of the participating jurisdictions are charged with implementation of various activities in the 2024 LHMP Update. During the quarterly reviews as described later in this section, each participating jurisdiction should conduct an assessment of progress toward meeting the goals and activities of the LHMP Update. At that time, recommendations may be made to modify timeframes for the completion of identified mitigation actions, identify funding sources, and work with responsible entities to implement the actions. On a quarterly basis, the priority of various mitigation actions may be adjusted. Some activities that are found not to be feasible may be removed from the Plan entirely, while other mitigation actions unforeseen during Plan development process may be added.

7.1.1. Role of the LHMP Update Planning Committee in Implementation and Maintenance

With adoption of this Plan, each participating jurisdiction will be responsible for LHMP implementation and maintenance. The Planning Committee identified in Chapter 3 (or a similar committee) will reconvene quarterly each year to ensure mitigation strategies are being implemented and the Cities continue to maintain compliance with the NFIP. The City of Fremont Fire Department, Office of Emergency Services (Fremont OES) or alternate agency, will continue in its role as project lead for LHMP implementation and maintenance. As such, the City of Fremont, as LHMP project lead or alternate lead, and all participating jurisdictions will continue their relationship, and will plan to convene a similar LHMP Update Planning Committee when preparing the subsequent LHMP update. The Fremont OES project lead or alternate, with support from participating jurisdictions and the LHMP Update Planning Committee will:

- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;
- Ensure hazard mitigation remains a consideration for community decision makers;
- Maintain a vigilant monitoring of multi-objective cost-share opportunities to help the community implement the Plan's recommended actions for which no current funding exists;
- Monitor and assist in the implementation and update of this Plan;
- Report on plan progress and recommended changes to the governing boards for all participating jurisdictions; and
- Inform and solicit input from the public.

The primary duty of the participating jurisdictions and the Planning Committee is to see the LHMP Update successfully carried out and to report to their governing boards and the public on the status of LHMP implementation and mitigation opportunities. Other duties include reviewing and promoting mitigation

proposals, considering stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information about the LHMP on the websites of participating jurisdictions.

7.2 Maintenance

Plan maintenance implies an ongoing effort to monitor and evaluate LHMP implementation and to update the Plan as progress, roadblocks, or changing circumstances are encountered.

7.2.1. Maintenance Schedule

Fremont OES or alternate agency, as project lead, in conjunction with the LHMP leads for all participating jurisdictions, is responsible for initiating Plan reviews. In order to monitor progress and update the mitigation strategies identified in the mitigation action plan, Fremont OES, LHMP leads from other participating jurisdictions, and the Planning Committee will revisit this Plan quarterly each year and following a hazard event. The Planning Committee will meet quarterly to review progress on Plan implementation and the City of Fremont, as the participating CRS community, will provide annual evaluation reports for CRS Activity 510 in accordance with their CRS program requirements. The Planning Committee will also submit a five-year written update to the State and FEMA Region IX, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule. With this 2024 LHMP Update anticipated to be fully approved and adopted in mid-2024, the next required written update of the Plan must be completed by mid-2029. Fremont OES, or another department from the participating jurisdictions, will initiate the Plan update – which may include applying for grant funding to hire professional services to assist in preparing the 2029 LHMP Update. The 2029 LHMP Update development process should be initiated in 2026 to ensure the 2029 LHMP Update can be funded and completed by this 2024 Tri-City LHMP's expiration date.

7.2.2. Maintenance Evaluation Process

Evaluation of progress can be achieved by monitoring changes in vulnerabilities identified in the Plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions;
- Increased vulnerability as a result of new development (and/or annexation); and/or
- Increased vulnerability resulting from unforeseen or new circumstances.

Updates to this Plan will:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to infrastructure inventories; and

- Incorporate new action recommendations or changes in action prioritization.

Changes will be made to this Plan to accommodate for actions that have failed or are not considered feasible after a review of their consistency with established criteria, time frame, community priorities, and/or funding resources. All mitigation actions will be reviewed during the monitoring and update of this Plan to determine feasibility of future implementation. Updating of this LHMP will be by written changes and submissions, as the participating jurisdictions and Planning Committee deems appropriate and necessary, and as approved by the governing boards of each participating jurisdiction. In keeping with the five-year update process, the Planning Committee will convene public meetings to solicit public input on this LHMP Update and its routine maintenance, and the final product will be again adopted by the governing boards of each participating jurisdiction.

Quarterly Plan Review Process

For the LHMP Update review process, the Fremont OES lead or alternate, and the LHMP leads for each of the participating jurisdictions, will be responsible for facilitating, coordinating, and scheduling reviews and maintenance of the LHMP. The LHMP is intended to be a living document. The review of the 2024 LHMP Update will normally occur on a quarterly basis each year and will be conducted by the Planning Committee as follows:

- Fremont OES or alternate lead will place an advertisement in the local newspaper advising the public of the date, time, and place for each quarterly review of the LHMP Update and will be responsible for leading the meeting to review the Plan.
- Notices will be mailed to the members of the Planning Committee, federal, state, and local agencies, non-profit groups, local planning agencies, representatives of business interests, neighboring communities, and others advising them of the date, time, and place for the review.
- County/City/District officials will be noticed by email and telephone or personal visit and urged to participate.
- Members of any participating jurisdiction's planning commissions and other appointed commissions and groups will also be noticed by email and either by telephone or personal visit.
- Prior to the review, department heads and others tasked with implementation of the various activities will be queried concerning progress on each activity in their area of responsibility and asked to present a report at the review meeting.
- The local news media will be contacted, and a copy of the current LHMP will be available for public comment at the City of Fremont as project lead or alternate lead.
- After the review meeting, minutes of the meeting and a quarterly report will be prepared by the Planning Committee and forwarded to the news media (public) and the Verisk/CRS specialist for the CRS program(s). The report will also be presented to the City of Fremont City Council, as the CRS community, for review, and a request will be made that the Council take action to recognize and adopt any changes resulting from the review.
- A copy of the 2024 LHMP Update will be continually posted on the LHMP website for the participating jurisdictions and the City of Fremont LHMP website will also include the annual CRS Activity 510 report.

Criteria for Quarterly Reviews

The criteria recommended in 44 CFR 201 and 206 will be utilized in reviewing and updating the 2024 LHMP Update. More specifically, the reviews should include the following information:

- Community growth or change in the past quarter.
- The number of substantially damaged or substantially improved structures by flood zone.
- The renovations to public infrastructure including water, sewer, drainage, roads, bridges, gas lines, and buildings.
- Natural hazard occurrences that required activation of the Emergency Operations Center(s) (EOC) and whether or not the event resulted in a federal disaster declaration.
- Natural hazard occurrences that were not of a magnitude to warrant activation of the EOC or a federal disaster declaration but were severe enough to cause damage in the community or closure of businesses, schools, or public services.
- The dates of hazard events and descriptions.
- Documented damages due to the events.
- Closures of places of employment or schools and the number of days closed.
- Road or bridge closures due to the hazard and the length of time closed.
- Assessment of the number of private and public buildings damaged and whether the damage was minor, substantial, major, or if buildings were destroyed. The assessment will include residences, mobile homes, commercial structures, industrial structures, and public buildings, such as schools and public safety buildings.
- Review of any changes in federal, state, and local policies to determine the impact of these policies on the community and how and if the policy changes can or should be incorporated into the next LHMP Update. Review of the status of implementation of projects (mitigation strategies) including projects completed will be noted. Projects behind schedule will include a reason for delay of implementation.

7.2.3. Incorporation into Existing Planning Mechanisms

Another important implementation mechanism that is highly effective and low-cost is incorporation of the 2024 LHMP Update recommendations and their underlying principles into other jurisdictional plans and mechanisms. Where possible, Plan participants will use existing plans and/or programs to implement hazard mitigation actions. As previously stated in Section 7.1 of this Plan, mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. The point is re-emphasized here. As described in this LHMP's capability assessment, the participating jurisdiction's already implement policies and programs to reduce losses to life and property from hazards. This Plan builds upon the momentum developed through previous and related planning efforts and mitigation programs and recommends implementing actions, where possible, through these other program mechanisms. These existing mechanisms include:

- General and master plans
- Emergency Operations Plans and other emergency management efforts
- Jurisdictional ordinances
- Flood/stormwater management/master plans
- Climate Plans
- Capital Improvement Plans and budgets

- Other plans and policies outlined in the capability assessment
- Other plans, regulations, and practices with a mitigation focus

Planning Committee members involved in these other planning and program mechanisms will be responsible for integrating the findings and recommendations of this LHMP with these other plans, programs, etc., as appropriate. As described in Section 7.1 Implementation, incorporation into existing planning mechanisms will be done through the routine actions of:

- monitoring other planning/program agendas;
- attending other planning/program meetings;
- participating in other planning processes; and
- monitoring community budget meetings for other community program opportunities.

The successful implementation of this mitigation strategy will require constant and vigilant review of existing plans and programs for coordination and multi-objective opportunities that promote a safe, sustainable community.

Examples of incorporation of the 2024 LHMP Update into existing planning mechanisms include:

1. As recommended by Assembly Bill 2140, the Cities should adopt (by reference or incorporation) this LHMP into the Safety Element of their General Plan. Evidence of such adoption (by formal, certified resolution and text within the body of the Safety Element) shall be provided to CAL OES and FEMA.
2. Integration of flood actions identified in this mitigation strategy with implementation priorities in existing Watershed, Flood, and Stormwater Drainage Plans. Key people responsible for development and implementation of Flood Plans and Stormwater Master Plans participated on the Planning Committee. Key projects were identified and integrated specifically into this LHMP, while others currently of lessor priority should be referenced in their source document. Actual implementation of these projects will likely occur through the flood and stormwater plans' processes through the efforts of each responsible jurisdiction and department.
3. Integration of many of the infrastructure, roads, and facility improvement projects with the jurisdictional Capital Improvement Programs.
4. Use of risk assessment information to inform future updates of the hazard analysis in the Emergency Operations Plans and related emergency management efforts for all participating jurisdictions.

Efforts should continuously be made to monitor the progress of mitigation actions implemented through these other planning mechanisms and, where appropriate, their priority actions should be incorporated into updates of this LHMP.

7.2.4. Continued Public Involvement

Continued public involvement is a crucial element of successful Plan implementation. The update process provides an opportunity to solicit participation from new and existing stakeholders and to publicize success stories from the 2024 LHMP implementation and seek additional public comment. The Plan maintenance and update process will include continued public and stakeholder involvement and input through attendance at designated committee meetings, web postings, press releases to local media, and through public hearings.

Public Involvement Process for Quarterly Reviews

The public will be noticed by placing an advertisement in the newspaper specifying the date and time for the review and inviting public participation. The Planning Committee, local, state, and regional agencies will be notified and invited to attend and participate.

Public Involvement for Five-year Update

When the participating jurisdictions and Planning Committee reconvenes for the next LHMP Update, they will coordinate with all stakeholders participating in the planning process—including those that joined the committee since the planning process began—to update and revise the Plan. In reconvening, the Planning Committee will identify a public outreach subcommittee, which will be responsible for coordinating the activities necessary to involve the greater public. The subcommittee will develop a plan for public involvement and will be responsible for disseminating information through a variety of media channels detailing the LHMP update process. As part of this effort, public meetings will be held, and public comments will be solicited on the LHMP Update draft. The subcommittee will also coordinate this public outreach process with any public information programs established pursuant to the current guidelines from the Community Rating System (CRS) program. In addition, continued public involvement and outreach efforts will place an emphasis on identifying and inviting representatives from underserved and vulnerable populations to be part of the next, 2029 Tri-City LHMP Update. As a starting point the underserved and vulnerable population groups identified for this 2024 LHMP Update will be contacted to invite them to the 2029 LHMP Update process with additional groups identified and added to meet the ongoing goal of mitigation planning for the whole community.

Annex B City of Newark

Table of Contents

Annex B City of Newark B-1
B.1 Introduction B-1
B.2 Planning Process B-2
B.3 Community Profile B-3
B.3.1. Geography and Climate B-5
B.3.2. History B-5
B.3.3. Economy and Tax Base B-6
B.4 Risk Assessment B-8
B.4.1. Assets Inventory and Growth and Development Trends B-8
B.4.2. Hazard Identification B-36
B.4.3. Hazard Profiles and Vulnerability to Specific Hazards B-38
B.5 Capability Assessment B-241
B.5.1. Regulatory Mitigation Capabilities B-241
B.5.2. Administrative/Technical Mitigation Capabilities B-252
B.5.3. Fiscal Mitigation Capabilities B-253
B.5.4. Mitigation Education, Outreach, and Partnerships B-254
B.5.5. Other Mitigation Efforts B-255
B.6 Mitigation Strategy B-255
B.6.1. Mitigation Goals and Objectives B-255
B.6.2. NFIP Mitigation Strategy B-255
B.6.3. Mitigation Actions B-257

B.1 Introduction

This Annex details the hazard mitigation planning elements specific to the City of Newark a previously participating jurisdiction of the 2017 Union City/Newark Multi-Jurisdictional Hazard Mitigation Plan (LHMP or Plan) Update. This Annex is not intended to be a standalone document but appends to and supplements the information contained in the Base Plan document. As such, all sections of the Base Plan, including the planning process and other procedural requirements apply to and were met by the City. This

Annex provides additional information specific to Newark, with a focus on providing additional details on the risk assessment and mitigation strategy for this jurisdiction.

B.2 Planning Process

As described above, Newark followed the planning process detailed in Chapter 3 of the Base Plan. In addition to providing representation on the Tri-City Planning Committee, the City formulated their own internal planning team to support the broader planning process requirements. Internal planning participants, their positions, and how they participated in the planning process are shown in Table B-1. Additional details on Plan participation and City representatives are included in Appendix A.

Table B-1 City of Newark – Planning Team

Name	Position/Title	How Participated
Ricardo Martinez	Emergency Services Coordinator	Participated in the leadership team, planning & public meeting, also the sub-committee and research
Lenka Hovorka	Assistant City Manager	Participated in the planning committee
Soren Fajeau	Director Public Works	Participated in the planning committee and providing information
Matthew Farrell	Chief Building Official	Participated in the planning and sub-committee and providing information.
Tonya Connolly	Public Works Superintendent	Participated in the planning committee and providing information
Jolie Macis	Captain	Participated in the planning committee
Steven Turner	Director Community Development	Participated in the planning committee and providing information
Peter Fong	Information Technology Analyst	Participated in the planning committee and providing information
Peter Beireis	Recreation Supervisor	Participated in the planning committee
Krysten Lee	Director Finance	Participated in the planning committee
Gloria Del Rosario	Accounting Manager	Participated in the planning committee and providing information
Diana Cangco	Principal Civil Engineer	Participated in the planning and sub-committee and providing information.
Art Interiano	Deputy Community Development Director	Provided information for this project.
Carmelisa Lopez	Senior Planner	Participated in the planning committee and providing information
Anne Stedlar	Economic Development Manager	Provided information for this project.
Ben Peralta	Director of Campus Police Services+	Participated in the planning committee and providing information
Jeff Luepke	Division Chief	Participated in the planning committee and providing information

Name	Position/Title	How Participated
Lincoln Casimere	Emergency Manager	Participated in the planning committee and providing information

Coordination with other community planning efforts is paramount to the successful implementation of this LHMP Update. This section provides information on how the City integrated the previously FEMA approved 2017 Plan into existing planning mechanisms and programs. Specifically, the City incorporated into or implemented the 2017 LHMP through other plans and programs shown in Table B-2.

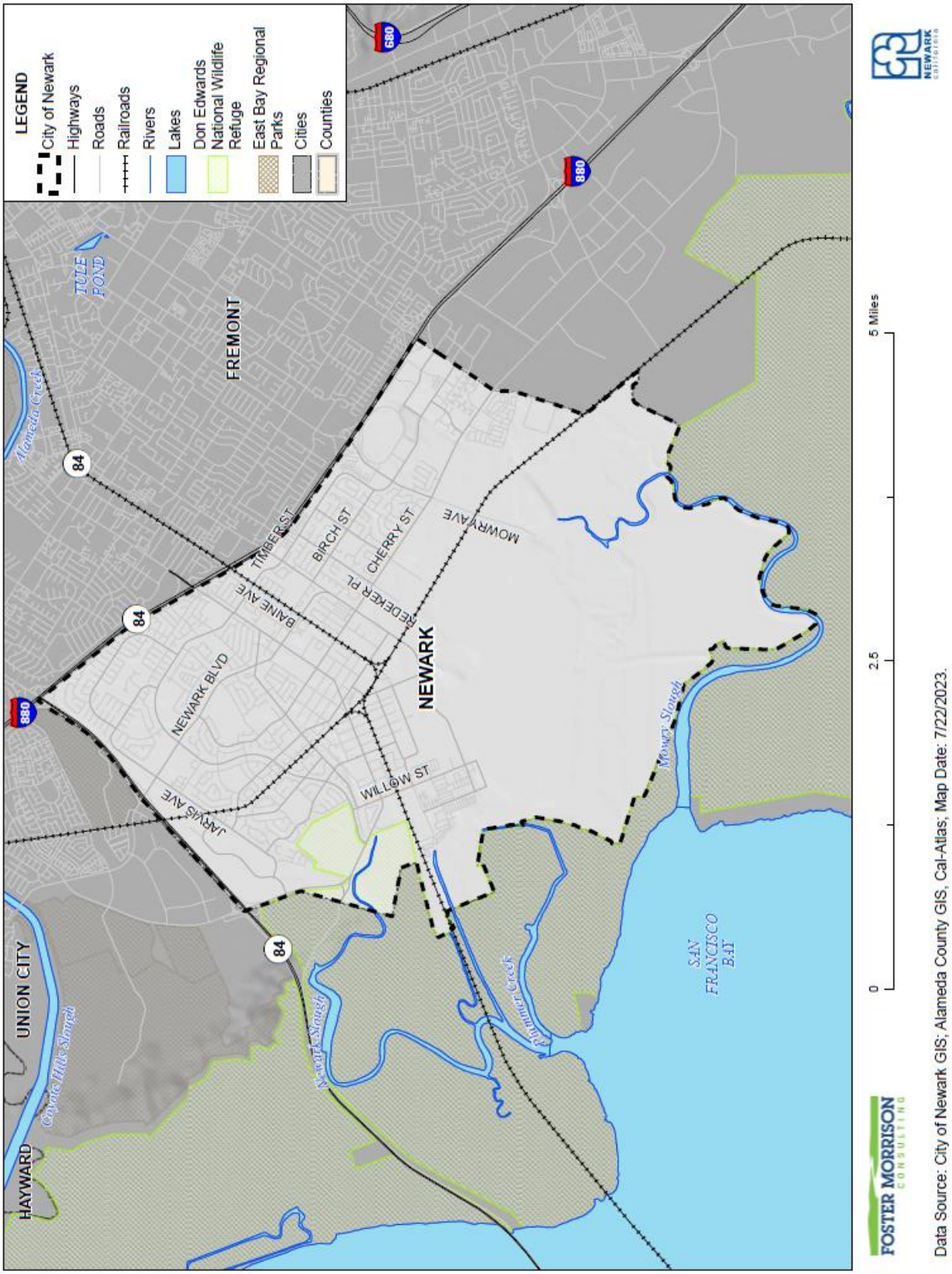
Table B-2 2017 City of Newark LHMP Incorporation

Planning Mechanism 2017 LHMP Was Incorporated/Implemented In.	Details: How was it incorporated?
General Plan	Includes Land use and Environmental Hazards elements with information regarding planning area composition and polices consistent with hazard mitigation as objectives.
Newark Municipal Code	Reviewed for relevant information regarding regulatory consistency with plan goals and objectives.
Capital Improvement Plan	Reviewed to identify cross planning initiatives for inclusion as mitigation projects.

B.3 Community Profile

The community profile for the City of Newark is detailed in the following sections. Figure B-1 displays a City map and the location of Newark within the Tri-City Planning Area.

Figure B-1 City of Newark



B.3.1. Geography and Climate

Newark is a city in Alameda County, California, situated on the southeast edge of the San Francisco Bay. It is located 35 miles south of San Francisco, 30 miles south of Oakland, 20 miles north of San Jose, and 395 miles north of Los Angeles. Newark is an enclave, surrounded by the city of Fremont. The three cities of Newark, Fremont, and Union City make up the Tri-City area. The western edge of Newark lies near the southern end of the San Francisco Bay. State Route 84 runs along the northwest border of the City and continues as the Dumbarton Bridge to cross the San Francisco Bay to reach Menlo Park. Interstate 880 serves as the eastern boundary of the City with Fremont. The U.S. Census Bureau reports the City has a total area of 13.9 square miles, of which, 13.88 square miles is land, and 0.02 square miles is water. The City has a mean elevation of 20 feet above sea level. Newark is bordered by the Don Edwards San Francisco Bay National Wildlife Habitat, hosting the largest wetland restoration project on the west coast of the U.S. Historically the Tri-City Planning Area was overlaid with tidal marshes, sloughs, ponds, willow groves, and creeks. Most of these historical features no longer exist due to development of a creek and storm drain network and present-day watershed boundaries. Development has also resulted in the culverting and channelization of many creeks, and the filling of portions of the bay and tidal marsh lands or diking of tidal marsh lands for salt evaporators or farming.

The climate in Newark is described as Mediterranean, characterized by warm, dry summers and mild winters. U.S. Climate Data reports the average annual high temperature in Newark is 68.7 Fahrenheit (°F), with an average annual low of 50.9°F. The average annual precipitation – rainfall – is 15.11 inches. July has the warmest temperatures of the year with an average high of 79°F. December and January have the coolest temperatures of the year with an average low of 42°F.

B.3.2. History

The San Francisco Bay region was once home to the Muwekma Ohlone Tribe. The first European settlement was Mission San José, founded on June 11, 1797, by the Franciscan order. It was the fourteenth Spanish mission established in California in what is currently the City of Fremont. In the mid-1850's European settlers established landings and warehouses along the east bay, and ranchers purchased property to start businesses. An Englishman bought an interest in a swamp reclamation project and hired Mr. J. Barr Robertson, a Scotsman, to oversee his interests. Mr. Robertson was a director of the California Land Investment Co., Ltd., London, England, and eventually bought out the interest in the land from the Englishman. Mr. Robertson named the land 'Newark' after the castle "Newark" in Port Glasgow, Scotland.

In the late 1870's, Alfred Davis, a San Francisco capitalist, and Jim Fair, a Comstock millionaire completed the South Pacific Coast Railroad from Dumbarton Point south all the way to Santa Cruz. Soon, a railroad station, roundhouse, and railroad shop buildings were being erected in the center of Newark. Eventually, the railroad was extended north from Newark to Alameda, providing direct ferry service to San Francisco. The completion of the railroad precipitated additional development in Newark.

Hotels and stores were soon erected, along with some of the first manufacturing industries, including a railroad car building firm, and a foundry which later manufactured Wedgewood stoves. The production of salt, which had been underway in the Newark area since the 1850s was also a major enterprise. Acquisitions

and mergers of salt production companies throughout the Bay area ultimately resulted in formation of the Arden Salt Company, predecessor to Leslie Salt Company and the current Cargill Salt.

In the early 1950s, subdivisions began sprouting throughout Southern Alameda County and talk of incorporation was in the air. In 1953, a group representing six communities commissioned a study to incorporate six communities into one city. Leaders in Newark decided to go it alone and withdrew from the venture after rejecting an industrial zoning for the entire town. The Newark Chamber of Commerce began its own movement toward incorporation of Newark. In September 1955, this effort paid off with the incorporation of Newark as the first new city in Alameda County in 47 years.

B.3.3. Economy and Tax Base

US Census estimates show economic characteristics for the City of Newark. These are shown in Table B-3 and Table B-4. Mean household income in the City was $168,380. Median household income in the City was $144,011.

Table B-3 City of Newark – Civilian Employed Population 16 years and Over

Industry	Estimated Employment	Percent
Agriculture, forestry, fishing and hunting, and mining	68	0.3%
Construction	1,644	6.2%
Manufacturing	4,545	17.2%
Wholesale trade	848	3.2%
Retail trade	2,606	9.8%
Transportation and warehousing, and utilities	958	3.6%
Information	996	3.8%
Finance and insurance, and real estate and rental and leasing	1,215	4.6%
Professional, scientific, and management, and administrative and waste management services	5,124	19.4%
Educational services, and health care and social assistance	5,259	19.9%
Arts, entertainment, and recreation, and accommodation and food services	1,603	6.15%
Other services, except public administration	887	3.4%
Public administration	715	2.7%

Source: US Census Bureau American Community Survey 2021 Estimates

Table B-4 City of Newark – Income and Benefits

Income Bracket	Percent
<$10,000	2.6%
$10,000 – $14,999	0.6%
$15,000 - $24,9999	2.8%
$25,000 – $34,999	3.0%

Income Bracket	Percent
$35,000 – $49,999	5.2%
$50,000 – $74,999	7.1%
$75,000 – $99,999	11.9%
$100,000 – $149,999	20.5%
$150,000 – $199,999	15.3%
$200,000 or more	30.9%

Source: US Census Bureau American Community Survey 2021 Estimates

Major employers in the City include:

- Lucid;
- Cargill;
- Vitesse System;
- Allogene;
- MITAC;
- TripleRing;
- Unigen;
- Mission Linen;
- Golden State Lumber;
- Home Depot;
- ATUM;
- PEBCO;
- Matheson Tri-Gas;
- Vector Labs;
- META;
- San Francisco Bay Brands;
- Aspire Bakeries;
- Sepheid;
- Kateeva;
- Prologis;
- WorldPac;
- NEFAB;
- FedEx;
- Sanmina; and
- Nordstrom.

In addition to these major employers, the City noted that there are over 1,600 hotel rooms in the City which significantly contribute to the City's tax base. A list of major hotels in the City and the number of rooms are included below:

- Aloft (172);
- Chase Suites (140);
- Courtyard (181);
- DoubleTree by Hilton (315);
- Homewood Suites (192);
- Hyatt Place (110);
- Residence Inn (168);

- SpringHill Suites (119);
- StayBridge Suites (104);
- Wyndham Garden (101).

The City of Newark has a varied tax base. It can be seen in Table B-5.

Table B-5 City of Newark Tax Base

Property Use	Precent of Tax Base
Agricultural	0.05%
Commercial	14.96%
Government/ Institutional	0.25%
Industrial	14.13%
Recreational	0.02%
Residential	69.05%
Unknown	0.13%
Utilities	0.00%
Vacant	1.41%
Newark Total	**100.0%**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

B.4 Risk Assessment

As defined by FEMA, risk is a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

The City of Newark risk assessment identifies and profiles relevant hazards and assesses the exposure of lives, property, infrastructure, and the environment to these hazards. The process allows for a better understanding of the City's potential risk to hazards and provides a framework for developing and prioritizing mitigation actions to reduce risk from future hazard events.

Building on the Community Profile above, a risk assessment was performed for the City. This includes the following sections:

- B.4.1 Assets Inventory and Growth and Development Trends
- B.4.2 Hazard Identification
- B.4.3 Hazard Profiles and Vulnerability to Specific Hazards

B.4.1. Assets Inventory and Growth and Development Trends

This section provides an inventory of the City of Newark's total assets potentially at risk to hazards and an overview of growth and development trends. This section is discussed into two parts:

- **Asset Inventory** – The assets inventory identifies Newark's total assets, including the people and populations: structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. This data is not hazard specific, but is representative of total assets within the City, potentially at risk to identified hazards as discussed in Section B.4.3 Hazard Profiles and Vulnerability to Specific Hazards.
- **Growth and Development Trends** – A discussion of growth and development trends in the City, both current and future, is presented.

Assets Inventory

The City's asset inventory is detailed in the following sections:

- People and Populations
- Structures
- Critical Facilities and Infrastructure, and Community Lifelines
- Natural, Historic, and Cultural Resources
- Economic Assets and Community Activities of Value

A discussion of each of these assets follows and serves as the template for the asset discussion for each hazard in Section B.4.3.

People and Populations

The most important asset within any community are the people and populations that reside in the community. This section includes an inventory of past and current populations of the City and also discusses socially vulnerable populations and underserved communities as a subsection of people and populations located within the City and potentially at risk to hazards. Information from the City, US Census Bureau, California Department of Finance, and other sources as detailed below form the basis of this discussion.

Historic Population Trends and Current Population

Population growth can increase the number of people living in hazard prone areas. Newark has 47,459 residents, as of January 1, 2023. In recent decades, Newark's population has seen rapid growth, with an increase of 15.3 percent from 2000 to 2020; this rate is above that of the region as a whole, at 14.8 percent. In 2020, the population of Newark was estimated to be 48,966 (CA Department of Finance). From 1990 to 2000, the population increased by 12.2 percent, while it increased by just 0.2 percent during the first decade of the 2000s. In the most recent decade, the population increased by 15 percent. The population of Newark makes up three percent of the population in Alameda County. Newark has seen growth rates as shown in Table B-6.

Table B-6 City of Newark – Population Changes Since 1950

Year	Population	Change	% Change
1950	1,532	–	–
1960	9,884	8,352	545.2%
1970	27,153	17,269	174.7%

Year	Population	Change	% Change
1980	32,126	4,973	18.3%
1990	37,861	5,735	17.9%
2000	42,471	4,610	12.2%
2010	42,573	102	0.2%
2020	47,529	4,956	11.6%
2023	47,459	-70	-0.1%

Source: US Census Bureau, California Department of Finance

Newark's population has experienced many changes in demographics over time. In recent years the population of youth has declined slightly with continued growth in those 55 and over. In 2019, Newark's youth population under the age of 18 was 10,015 and the senior population 65 and older was 6,038. These age groups represent 21.2 percent and 12.8 percent of Newark's population.

As discussed, the population is getting older, with a large increase in the population aged 60 and over. This can be seen in Table B-7.

Table B-7 City of Newark – Populations under 19 and over 60 Years of Age

Age Group	2000	2010	2020
0-19	30%	28%	16.3%
60 and over	12%	15%	18.2%

Source: US Census Bureau, City of Newark Housing Element

Since 2000, the percentage of residents in Newark identifying as White has decreased – and at the same time, the percentage of residents of all other races and ethnicities has increased – by 18.6 percentage points, with the 2019 population standing at 11,168. In absolute terms, the Asian / API, Non-Hispanic population increased the most while the White, Non-Hispanic population decreased the most. In 2020, 23.7 percent of Newark's population was White while 4 percent was African American, 33.9 percent was Asian, and 34.8 percent was Latinx.

Special Populations and Disadvantaged Communities

The City is a very socially and economically diverse community, and many residents that are socially or economically disadvantaged or vulnerable due to varying reasons reside within the City. The City and surrounding County are no strangers to large natural disasters which have had a direct impact on the populations of the area. Thus, it is important to consider the potential effects of hazard events and disasters on these more vulnerable populations. Socially vulnerable and disadvantaged communities in the City are discussed by the following sources:

- CDC Social Vulnerability Index
- CA DWR Disadvantaged Community Mapping
- FEMA Community Disaster Resilience Zones
- City Planning Team Input

CDC Social Vulnerability Index

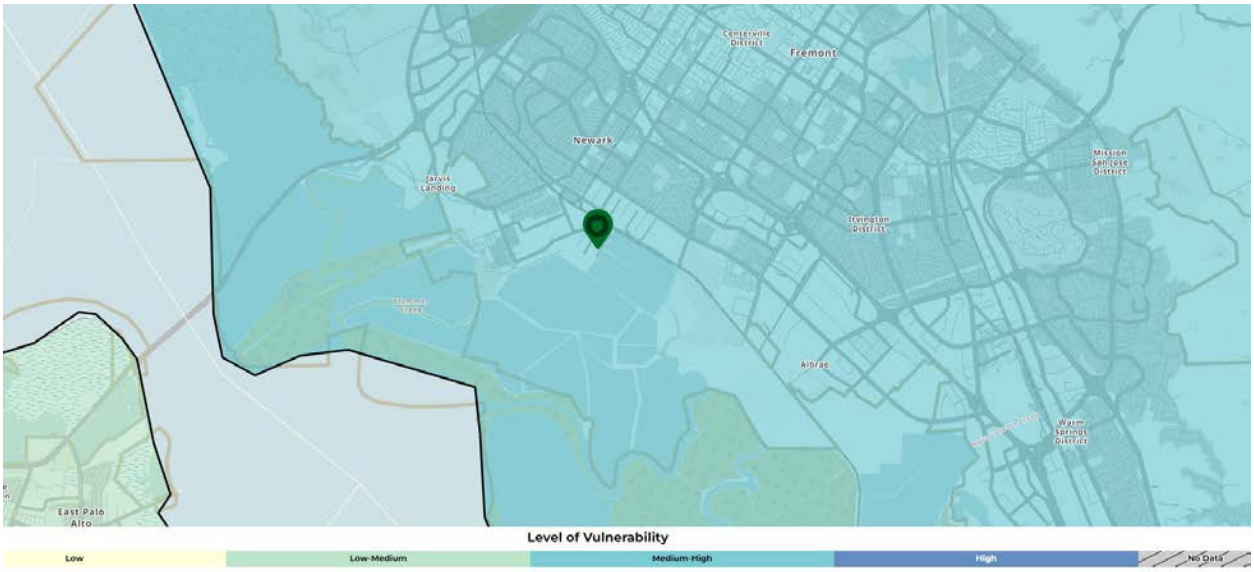
Every community must prepare for and respond to a hazard event, including the range of natural hazards addressed in this Plan, from severe weather extremes to large potentially catastrophic events such as wildfires or earthquakes. A number of factors, including poverty, lack of access to transportation, and crowded housing may weaken a community's ability to prevent human suffering and financial loss in a disaster. These factors are known as social vulnerability.

Social vulnerability refers to the potential negative effects on communities caused by external stresses on human health. Such stresses include natural or human-caused disasters, or disease outbreaks. Reducing social vulnerability can decrease both human suffering and economic loss. The Agency for Toxic Substances and Disease Registry (ATSDR) Geospatial Research, Analysis & Services Program (GRASP) created databases to help emergency response planners and public health officials identify and map communities that will most likely need support before, during, and after a hazardous event. The U.S. Center for Disease Control (CDC) used these databases to create the CDC Social Vulnerability Index (CDC SVI), which uses 15 U.S. census variables to help local officials identify communities that may need additional support before, during, or after disasters.

CDC SVI uses U.S. Census data to determine the social vulnerability of every census tract. Census tracts are subdivisions of counties for which the Census collects statistical data. The CDC SVI ranks each tract on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes. Each tract receives a separate ranking for each of the four themes, as well as an overall ranking. Maps of the four themes for the City are shown in the figures below.

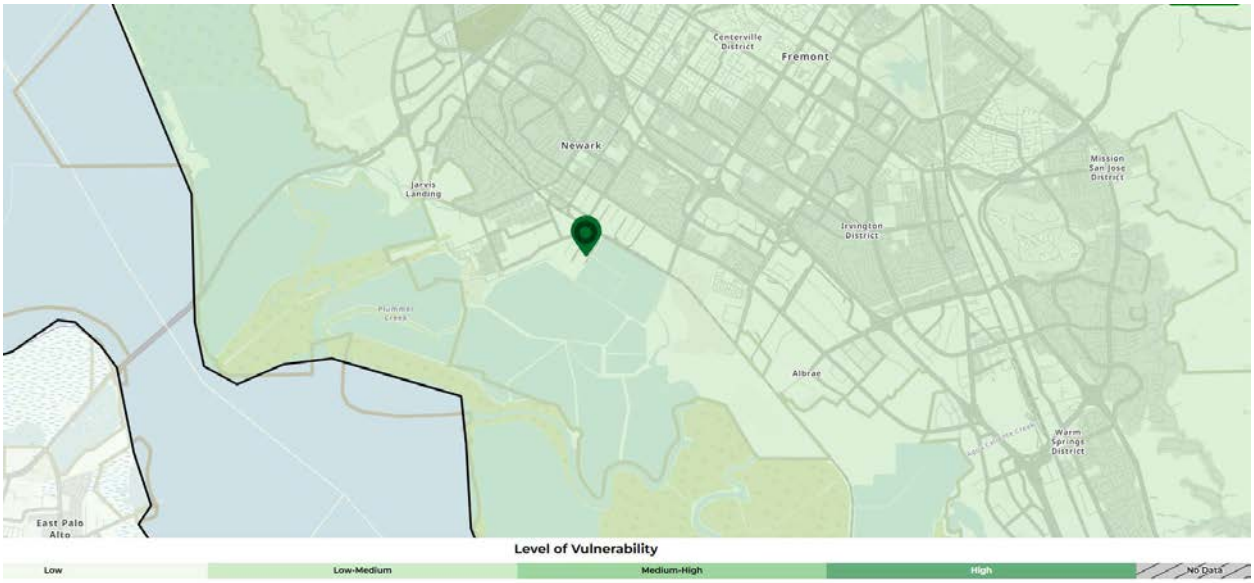
The overall SVI map is shown in Figure B-2; the socioeconomic SVI for the census tracts in and around the City are shown in Figure B-3; the household composition SVI is shown in Figure B-4; the minority and language SVI is shown in Figure B-5; and the housing and transportation SVI is shown in Figure B-6. Overall, the maps indicate that, in general, the City sees little change in social vulnerability regardless of location.

Figure B-2 City of Newark – Overall Social Vulnerability



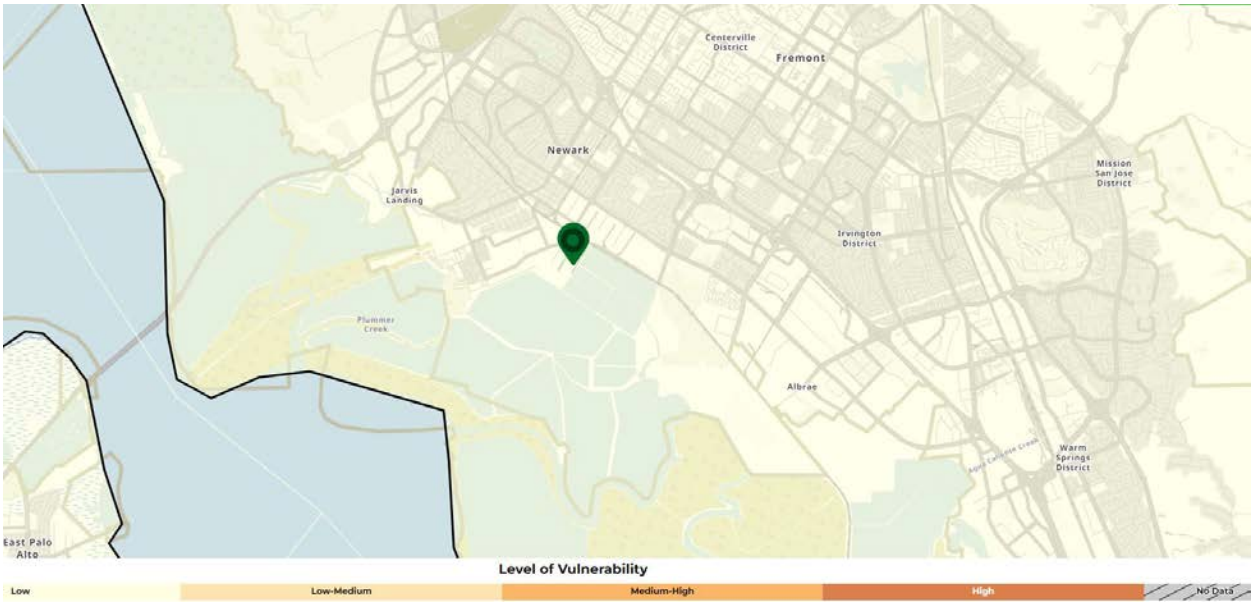
Source: CDC Social Vulnerability Index – map retrieved 10/03/2023
Level of Vulnerability Rating: **Yellow** – Low; **Green** – Low/Medium; **Aqua** – Medium/High; **Blue** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-3 City of Newark – Socioeconomic Status Vulnerability



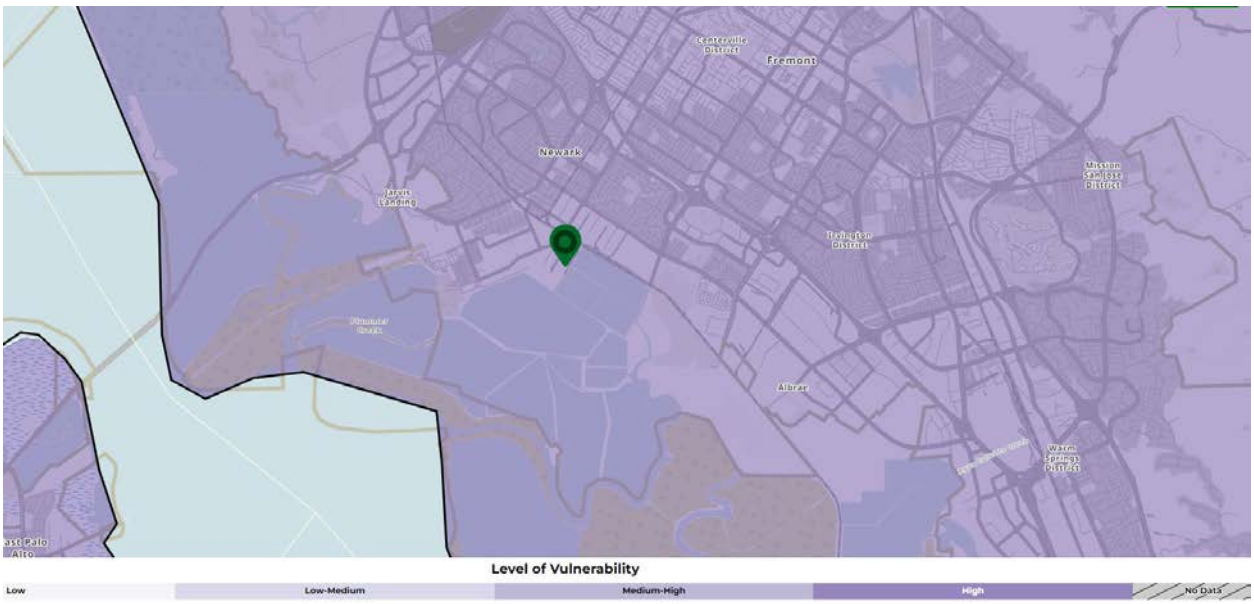
Source: CDC Social Vulnerability Index – map retrieved 10/03/2023
Level of Vulnerability Rating: **Yellow** – Low; **Light Green** – Low/Medium; **Green** – Medium/High; **Dark Green** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-4 City of Newark – Household Characteristics



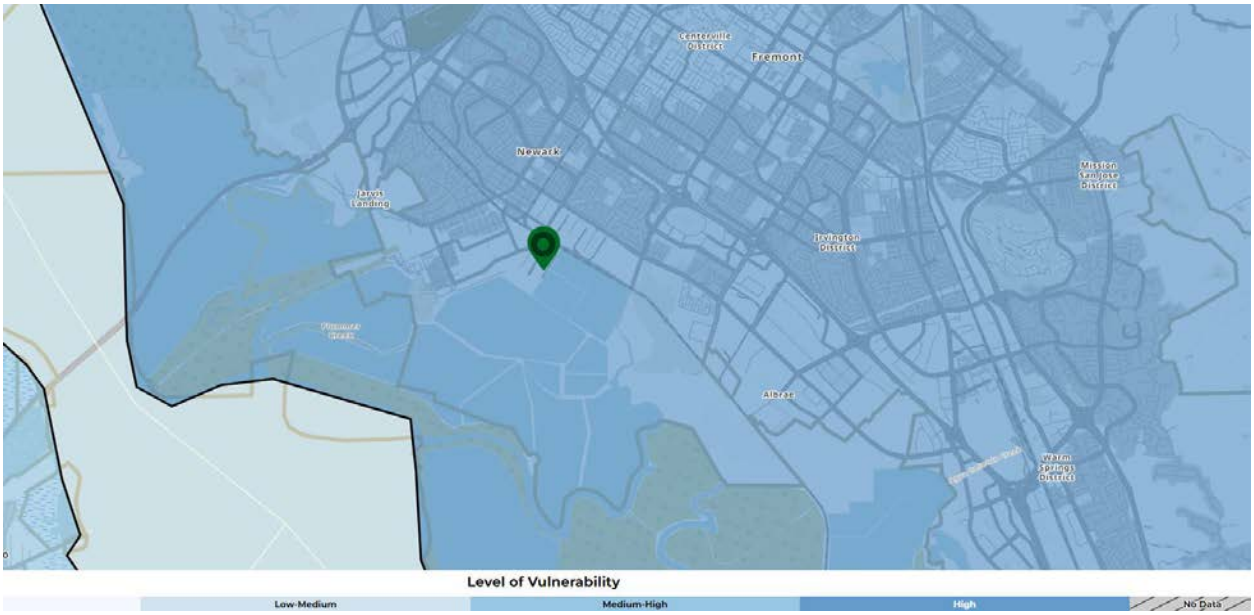
Source: CDC Social Vulnerability Index – map retrieved 10/03/2023
Level of Vulnerability Rating: **Yellow** – Low; **Light Orange**– Low/Medium; **Orange** – Medium/High; **Dark Orange** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-5 City of Newark – Racial and Ethnic Minority Status



Source: CDC Social Vulnerability Index – map retrieved 10/3/2023
Level of Vulnerability Rating: **Yellow** – Low; **Light Purple** – Low/Medium; **Purple** – Medium/High; **Dark Purple** – High; **Grey Hatched** – No Data; **Grey** – Not Available

Figure B-6 City of Newark – Housing Type and Transportation



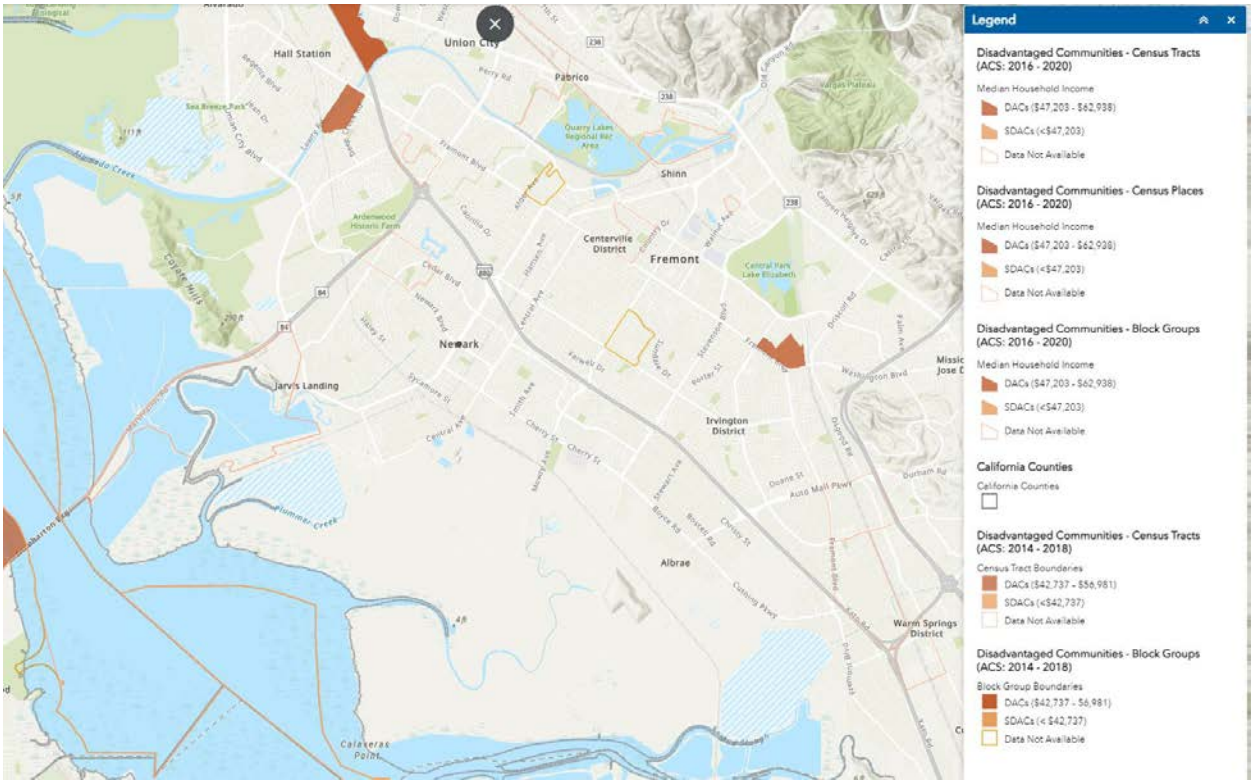
Source: CDC Social Vulnerability Index – map retrieved 10/03/2023
Level of Vulnerability Rating: **Faint Purple** – Low; **Light Purple** – Low/Medium; **Blue** – Medium/High; **Dark Blue** – High; **Grey Hatched** – No Data; **Grey** – Not Available

CA DWR Disadvantaged Community Mapping

The California Department of Water Resources (CA DWR) has developed a web-based application to assist local agencies and other interested parties in evaluating disadvantaged community (DAC) status throughout the State, using the definition provided by Proposition 84 Integrated Regional Water Management (IRWM) Guidelines (2016). A statewide Census Tract Geographic Information Services (GIS) Tiger file is used to determine if a census tract is DAC or not by adding American Community Survey Median Household Income data at the census tract level. Only those census geographies that meet the DAC definition are shown on the map (i.e., only those with an annual median household income (MHI) that is less than 80 percent of the Statewide annual MHI (PRC Section 75005(g)). In addition, those census geographies having an annual MHI that is less than 60 percent of the Statewide annual MHI are shown as "Severely Disadvantaged Communities" (SDAC).

The DAC Mapping Tool is an interactive map application that allows users to overlay the following three US Census geographies as separate data layers: Census Place, Census Tract, and Census Block Group. The DAC map for the City is shown in Figure B-7. In general, the map shows limited to no areas of disadvantaged communities.

Figure B-7 City of Newark – Disadvantaged Communities

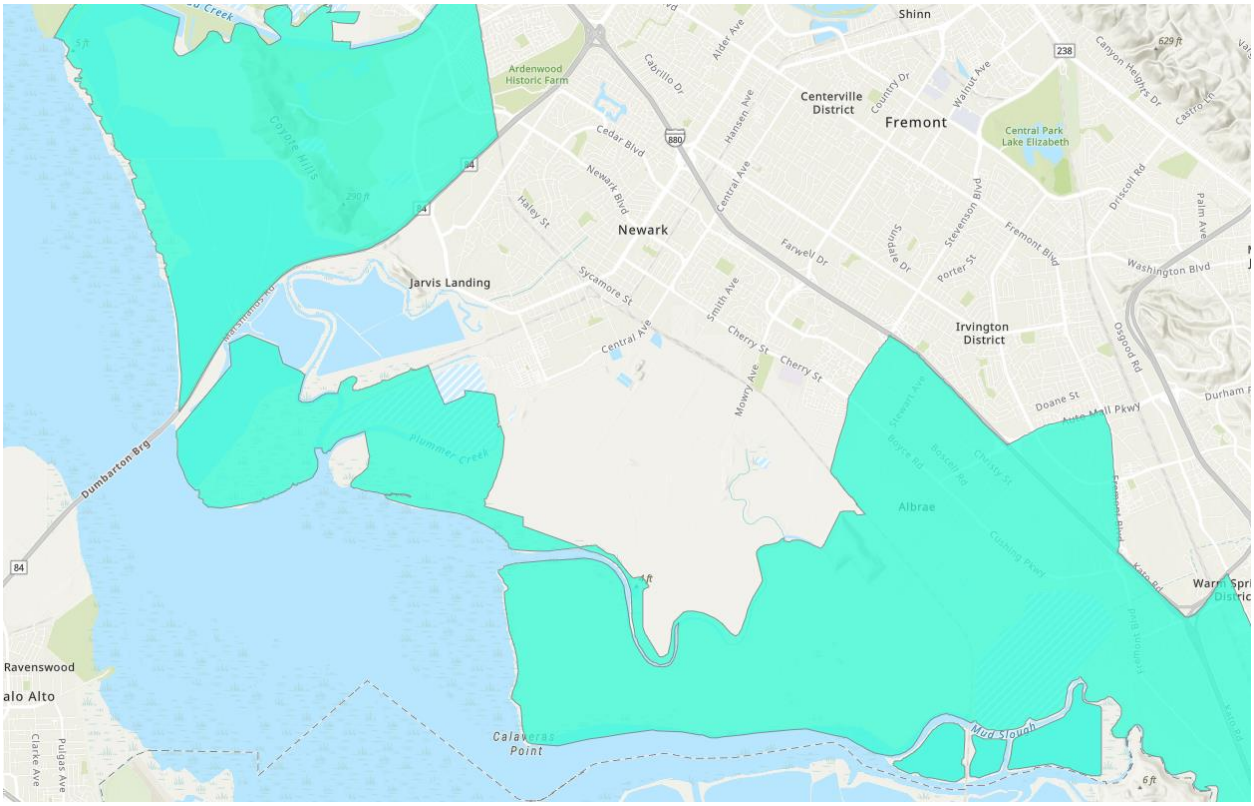


Source: CA DWR – map retrieved 10/03/2023

FEMA Community Disaster Resilience Zones

Community Disaster Resilience Zones aim to build and strengthen community resilience across the nation by driving federal, public, and private resources to the most at-risk and in-need communities. The Community Disaster Resilience Zones Act uses FEMA's National Risk Index to identify the most at-risk and in-need communities to identify resilience zones. Designated zones will be prioritized for targeted federal support, such as increased cost-share for resilience and mitigation projects, lessening the financial burden on communities to perform resilience-related activities. On September 6, 2023, FEMA announced the initial 483 designations in all 50 states and the District of Columbia. Figure B-8 shows these zones in teal green. None of these zones intersect the City of Newark.

Figure B-8 City of Newark – FEMA Community Disaster Resilience Zones



Source: FEMA. Map retrieved 10/4/2023.

City Planning Team Input

The City Planning Team noted that the City of Newark 2023-2031 Housing Element discusses special populations in the City. Discussions for seniors, those with disabilities, people experiencing homelessness, large households, female headed households, extremely low income households, and farmworkers were included. These are discussed below.

Seniors

Seniors in Newark are a growing population, as long-time residents continue to age and the City adds more affordable senior rental housing. As of the 2020 US Census, there are 6,005 Seniors in Newark. Seniors in Newark overwhelmingly are homeowners at every income level, with low-income seniors having the highest percentage of renters at 37 percent. Low-income seniors experience higher rates of cost burden than moderate and above moderate-income counterparts. 37 percent of very low-income seniors are cost burdened with 22 percent extremely cost burdened.

Available affordable housing for seniors in Newark includes: Newark Gardens, Newark Gardens, Newark Station, and Timber Senior Housing is under construction with an anticipated completion later this year. As the senior population continues to grow, there will be increased need for housing that is accessible, affordable to those on fixed incomes, and allows residents to age in place. In addition to increased types of

housing options, seniors need support with the maintenance of their existing homes and their age and spaces that are accessible.

Disabled Citizens

People with disabilities often face additional housing challenges. Encompassing a broad group of individuals living with a variety of physical, cognitive and sensory impairments, many people with disabilities live on fixed incomes and often need accessible designed housing to live more independent lives. In Newark, eight percent of the population has a disability of any kind, with the majority being ambulatory. Due to housing challenges of affordability, accessibility and discrimination, 87 percent of people with disabilities live with family members in Newark.

People Experiencing Homelessness

People experiencing homelessness have steadily increased in Alameda County since 2017, with 9,747 sheltered and unsheltered people at the most recent point in time count on February 22, 2022. The City of Newark has a documented reduction of people experiencing homelessness, from 89 in 2019, to 58 sheltered and unsheltered people in 2022. The point in time count found a total of 32 unsheltered individuals, with 34 percent, or 11 people, living in a tent, with 8 living outside and 7 in an RV. Fewer people were found living in their car, at 6 people or 19 percent. It is no surprise that the largest number of people outside of shelters are living in tents, as the locations with the highest concentrations of people experiencing homelessness are in the undeveloped areas along highway 84, in the Eucalyptus grove, and along the 880. These sites are all concentrated in the Mirabeau and Mayhews Landing areas, in the northern portion of the City due to the proximity of open space for tents along the freeway.

Large Households

Large Families are considered to have 5 or more people, bringing about the need for larger housing units with three bedrooms or more. Newark has a larger percentage of families with 3 or more people than Alameda County and the Bay Area, with 38 percent of households with 3 or more, and 19 percent of households with five or more people. While Newark has a large inventory of single-family homes, the cost of rent and ownership place many of these homes beyond reach for families. Families also face costs such as childcare, increased transportation and medical care that further reduce their housing budget allowance. The pace of construction of multifamily and affordable units has not kept pace with that of market rate single family homes in Newark.

Female Headed Households

Government Code Section 65583(a)(7) identifies families with female heads of households as a group that may have special housing needs and requires the City to analyze the housing needs of these households. Female-headed households are households led by a single female with one or more children under the age of 18 at home. In Newark, 11 percent of households are female-headed families, which are often at greater risk of housing insecurity. A greater number of single parent headed households are renters, with 67 percent of married households owning homes, compared to 16 percent of female headed households.

Extremely Low-Income Households

Residents with extremely low incomes, less than 30% of the Area Median Income, face extreme housing challenges due to fixed or low incomes, credit, disability, family structure and access to affordable housing. In Newark, 58% of households make more than 100% of the Area Median Income (AMI), compared to 10% making less than 30% of AMI, which is considered extremely low-income.

Farmworkers

The number of farmworkers living in Newark has declined over the years, with the student population at 57 students for the 2019-2020 school year. The previous years saw 79 students for 2017-2018 and 72 for the 2018 to 2019 school year. Generally, the number of farmworkers living in Alameda County has been declining since 2012, with fewer than 400 residents working in the industry in a permanent position. It is important to recognize that farmworkers could be under-counted by the census due to their migrant nature. Farming and farmworkers are a significant element of the state's economy, but play less of a role in the Bay Area. Due to lower wages, language barriers, and inconsistent work, farmworkers can have difficulty securing housing, and for these reasons could experience overcrowding and substandard housing conditions.

Structures

This section looks at the parcels (and associated structures) that make up the built environment of the City. The following data from the Alameda County Assessor's Office is based on the 2023 Assessor's data provided by the City of Fremont GIS and includes the associated parcel layer. The methodology used to derive the number of total and improved parcels (i.e., those with an improved structure value) and land and improved property values (as well as content replacement values) is the same as in Section 4.2.1 of the Base Plan. This data should only be used as a guideline to overall values in the City, as the information has some limitations. The most significant limitations are created by Proposition 13 as detailed in the Base Plan. With respect to Proposition 13, instead of adjusting property values annually, the values are not adjusted or assessed at fair market value until a property transfer occurs. As a result, overall value information is most likely low and does not reflect current market value of properties within the City. It is also important to note, in the event of a disaster, it is generally the value of the infrastructure or improvements to the land that is of concern or at risk. Generally, the land itself is not a loss. However, depending on the type of hazard and impact of any given hazard event, land values may be adversely affected; thus, land values are included as appropriate. Table B-8 shows the Alameda County Parcel/Assessor Data values and content replacement values (e.g., the values at risk) broken down by property use for the City.

Table B-8 City of Newark – Total Parcels (and Structures) by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Newark						
Agricultural	28	1	$2,768,344	$3,339,480	$3,339,480	$9,447,304
Commercial	419	317	$581,449,066	$1,048,313,365	$1,048,313,365	$2,678,075,796

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Government/ Institutional	343	17	$13,310,796	$15,447,837	$15,447,837	$44,206,470
Industrial	109	96	$393,851,894	$854,367,320	$1,281,550,982	$2,529,770,196
Recreational	3	3	$1,480,029	$1,214,920	$1,214,920	$3,909,869
Residential	15,596	14,928	$2,936,444,332	$6,285,725,093	$3,142,862,515	$12,365,031,940
Unknown	21	1	$24,055,983	$42,970	$0	$24,098,953
Utilities	87	0	$0	$0	$0	$0
Vacant	552	23	$236,543,769	$15,812,145	$0	$252,355,914
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure, and Community Lifelines

Beyond just the buildings and structures that comprise the built environment, it is important to identify the critical facilities and infrastructure, and community lifelines that are critical for life safety and property protection. This is done for the City of Newark in the below sections.

Critical Facilities and Infrastructure

The operation of critical facilities and infrastructure during and after a disaster is crucial. Their ability to keep functioning affects both the severity of the impacts and the speed of recovery. Critical facilities and infrastructure are those buildings and infrastructure that are crucial to a community. Should these be damaged, it makes it more difficult for the community to respond to and recover from a disaster. For purposes of this Plan, a critical facility is defined as:

> ***Critical infrastructure includes all public and private facilities and infrastructure that a community considers essential for the delivery of vital services and for the health, welfare, and protection of the community, and are especially important during and after a disaster or hazard event.***

Critical infrastructure is classified by the following categories: (1) Essential Services, (2) High Hazard Occupancy, (3) Hazardous Materials:

- **Essential Services Infrastructure** include, without limitation, public safety, emergency response, emergency medical, designated emergency shelters, communications, public and private utilities, and equipment, community lifelines, and government facilities and operations.
- **High Risk Occupancy Infrastructure** include, without limitation, pre-schools; public and private primary and secondary school; licensed before and after school care centers, daycare centers, group homes, and assisted living residential or congregate care facilities; and other licensed facilities that are likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a hazard event or disaster.

- **Hazardous Materials Infrastructure** include, without limitation, structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water reactive material; and that if adversely impacted, could lead to a release of hazardous material(s) during a hazard event or disaster.

Using this definition, those critical facilities that fall within the City of Newark are shown on Figure B-9. A summary of critical facilities by the three categories is detailed in Table B-10. More information can be found in Appendix F.

Figure B-9 City of Newark – Critical Facilities

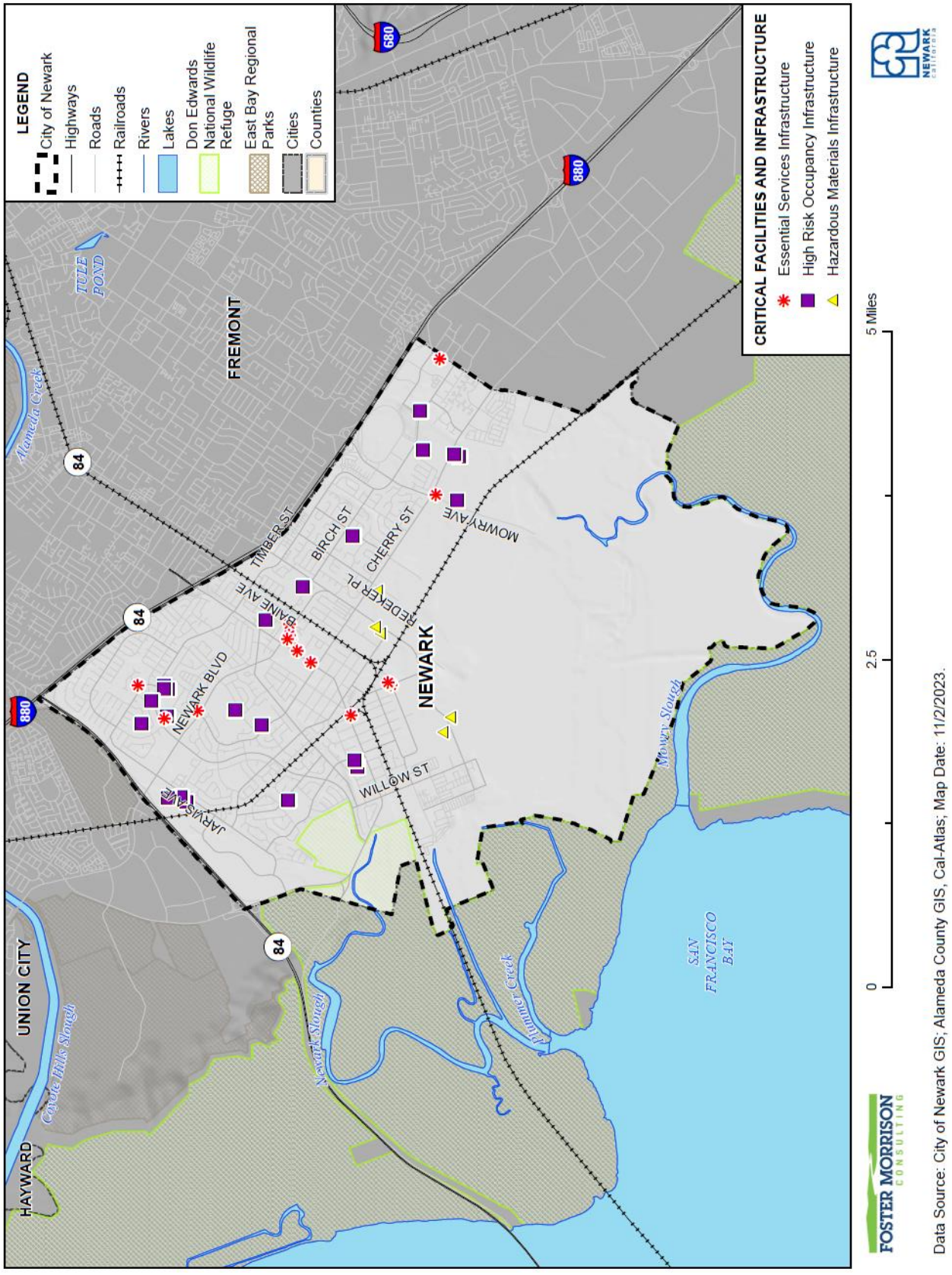


Table B-9 City of Newark – Critical Facilities Summary by Category

Critical Infrastructure Category	Facility Count
Essential Services Infrastructure	15
High Risk Occupancy Infrastructure	23
Hazardous Materials Infrastructure	6
Newark Total	**44**

Source: City of Newark GIS

Table B-10 City of Newark – Critical Facilities by Category and Type

Critical Infrastructure Category	Critical Infrastructure Type	Facility Count
Essential Services Infrastructure	Bridge	1
	City Facility	7
	Fire Station	3
	Hospital	3
	Police Station	1
	Total	**15**
High Risk Occupancy Infrastructure	Day Care	7
	School	16
	Total	**23**
Hazardous Materials Infrastructure	Chemical Facility	3
	Distribution Center	1
	Gas Facility	1
	Paper Facility	1
	Total	**6**
Union City Total		**44**

Source: City of Newark GIS

Community Lifelines

Assessing the vulnerability of the City of Newark to natural hazards and disasters also involves reviewing and inventorying the community lifelines in place that could be affected. It is important to include these items in hazard discussions as the continuous operation of critical government and business functions is essential to human health and safety, property protection, and economic security. The importance of community lifelines is discussed below:

- Lifelines are the most fundamental services in the community that, when stabilized, enable all other aspects of society to function.
- FEMA has developed a construct for objectives-based response that prioritizes the rapid stabilization of Community Lifelines after a disaster.
- The integrated network of assets, services, and capabilities that provide lifeline services are used day-to-day to support the recurring needs of the community and enable all other aspects of society to function.

- When disrupted, decisive intervention (e.g., rapid re-establishment or employment of contingency response solutions) is required to stabilize the incident.

Community lifelines, as defined by FEMA, include the following:

- **Safety and Security** – Law Enforcement/Security, Fire Service, Search and Rescue, Government Service, Community Safety
- **Food, Hydration, Shelter** – Food, Water, Shelter, Agriculture
- **Health and Medical –** Medical Care, Public Health, Patient Movement, Medical Supply Chain, Fatality Management
- **Energy –** Power Grid, Fuel
- **Communications** – Infrastructure, Responder Communications, Alerts Warnings and Messages, Finance, 911 and Dispatch
- **Transportation** – Highway/Roadway/Motor Vehicle, Mass Transit, Railway, Aviation, Maritime
- **Hazardous Material –** Facilities, HAZMAT, Pollutants, Contaminants
- **Water Systems** – Potable Water Infrastructure, Wastewater Management

In the City of Newark, these community lifelines are all in place and functional as part of regular government operations. It should also be noted that these lifelines collectively include many of the critical facilities and infrastructure assets inventoried for this LHMP.

Specific information on these community lifelines in the City and how they may be affected by a hazard event or disaster are discussed in more detail in each hazard section.

Natural, Historic, and Cultural Resources

Assessing the vulnerability of the City to natural hazards and disasters also involves inventorying the natural, historic, and cultural assets of the area. This step is important for the following reasons:

- Environmental and natural resources add to a community's identity and quality of life. They also help the local economy through agriculture, tourism and recreation. They support ecosystem services, such as clean air and water.
- Conserving the environment may help people mitigate risk. It can also protect sensitive habitats, develop parks and trails, and build the economy.
- The community may decide that these types of resources warrant a greater degree of protection due to their unique and irreplaceable nature and contribution to the overall economy.
- If these resources are impacted by a disaster, knowing so ahead of time allows for more prudent care in the immediate aftermath, when the potential for additional impacts are higher.
- The rules for reconstruction, restoration, rehabilitation, and/or replacement are often different for these types of designated resources.
- Natural resources can have beneficial functions that reduce the impacts of natural hazards, such as wetlands and riparian habitat, which help absorb and attenuate floodwaters.

Natural Resources

The City contains a variety of natural resources. Natural resources are unique to each area and are difficult to replace. Should a natural disaster occur, these species and locations are at risk.

Water Resources and Watersheds

Water is a necessity for human life. It is an aesthetic and recreational resource and is essential for urban growth. Water also supports a variety of plant and animal habitats. Water is a limited resource, particularly in California, where demand may exceed supply during times of drought. Each of these characteristics of water must be considered and balanced in planning for its conservation and management. The City coordinates regularly with the Alameda County Water District (ACWD). The City's water supply is managed by the ACWD. The 2013 City of Newark General Plan Conservation and Sustainability Element noted that this supply includes water that originates as precipitation within the Alameda Creek watershed and water that is transported from the Sacramento/San Joaquin River Delta through the South Bay Aqueduct. The South Bay Aqueduct delivers water to a treatment facility in Fremont, where it is disinfected and filtered. Water from both sources is stored in a series of large ponds in Fremont called the Quarry Lakes, where it percolates to the groundwater basin.

Sixteen wells—including six located in Newark—are used to pump water from the groundwater basin to a system of distribution mains serving residents and businesses. These 16 wells are capable of producing up to 47.5 million gallons of water per day (MGD). An additional 20 percent of ACWD's water supply comes from the Hetch Hetchy Reservoir in Yosemite National Park. That water is purchased from the San Francisco Public Utilities Commission. The quality of the Hetch Hetchy water is excellent and only requires simple disinfecting for domestic use.

ACWD also receives about 10 MGD of water from the Newark Desalinization Facility. This is the first brackish water desalinization (Desal) facility in Northern California. It produces drinkable water by removing salts and other minerals from brackish groundwater through reverse osmosis. The treated saltwater is then blended with other supplies for delivery.

The groundwater basin itself consists of gravel, sand, silt, and clay. The gravel and sand are highly permeable, allowing water to seep into the ground where it is stored in what is known as an aquifer. The Hayward Fault divides the Niles Cone into two basins; Newark is located in the portion of the basin below the Fault line. This aquifer is relatively shallow and lies between 40 and 140 feet below the ground in most inland locations. The depth to groundwater is much shallower near the edge of the Bay.

At one time, the Niles Cone was filled with fresh water and had a westerly gradient toward the Bay. However, the pumping of water for agriculture and development in the Niles Cone basin caused water levels to drop below sea level in the 1920s, which caused saltwater from the Bay to migrate into the aquifer. This compromised water quality and eventually required that ACWD purchase water from supplemental sources to restore groundwater quality. Since the 1960s, ACWD has been using water from the State Water Project to recharge the basin and correct water salinity conditions. In the 1970s, ACWD took further steps to reduce saltwater intrusion, including a series of wells to intercept bay water before it reached the aquifer. Although there has been substantial improvement, a considerable amount of salt water still remains. Potable

water quality may also be threatened by urban activities, and from past industrial activities that may result in chemical plumes. The ACWD works continuously to address these issues through groundwater monitoring, pumping operations, and the procurement of supplemental water supplies as needed.

A watershed is an area of land, usually occurring between ridges or highpoints that drains to a body of water such as a creek, stream, lake, or bay. Watershed also refers to the topographic divide between water basins. Newark is located in the Alameda Creek Watershed and the Niles Cone Groundwater Basin. Alameda Creek is one of the main tributaries to San Francisco Bay. It drains a 633-square-mile area that stretches from Mount Diablo on the north to Mount Hamilton on the south and the Altamont Pass on the east. The creek itself enters the Bay in a flood control channel along the border between Fremont and Hayward, about two miles north of Newark. Watersheds are shown in Section 4.2.1 of the Base Plan and are detailed on Table B-11.

Table B-11 City of Newark – Watersheds by Acreage

Watersheds	Acres
Crandall	20
Sanjon del los Alisos	2,536
(unnamed)	6,443
Newark Total	**8,999**

Source: CA DWR

Wetlands and their Natural and Beneficial Functions

Wetlands are habitats in which soils are intermittently or permanently saturated or inundated. Wetland habitats vary from rivers to seasonal ponding of alkaline flats and include swamps, bogs, marshes, vernal pools, and riparian woodlands. Wetlands are considered to be waters of the United States and are subject to the jurisdiction of the U.S. Army Corps of Engineers as well as the California Department of Fish and Wildlife (CDFW). Where the waters provide habitat for federally endangered species, the U.S. Fish and Wildlife Service may also have authority.

Wetlands are a valuable natural resource for communities providing beneficial impact to water quality, wildlife protection, recreation, and education, and play an important role in hazard mitigation. Wetlands provide drought relief in water-scarce areas where the relationship between water storage and streamflow regulation is vital and reduce flood peaks and slowly release floodwaters to downstream areas. When surface runoff is dampened, the erosive powers of the water are greatly diminished. Furthermore, the reduction in the velocity of inflowing water as it passes through a wetland helps remove sediment being transported by the water.

Wetlands are often found in floodplains and depressional areas of a watershed. Many wetlands receive and store floodwaters, thus slowing and reducing downstream flow. Wetlands perform a variety of ecosystem functions including food web support, habitat for insects and other invertebrates, fish and wildlife habitat, filtering of waterborne and dry-deposited anthropogenic pollutants, carbon storage, water flow regulation (e.g., flood abatement), groundwater recharge, and other human and economic benefits.

Wetlands, and other riparian and sensitive areas, provide habitat for insects and other invertebrates that are critical food sources to a variety of wildlife species, particularly birds. There are species that depend on these areas during all parts of their lifecycle for food, overwintering, and reproductive habitat. Other species use wetlands and riparian areas for one or two specific functions or parts of the lifecycle, most commonly for food resources. In addition, these areas produce substantial plant growth that serves as a food source to herbivores (wild and domesticated) and a secondary food source to carnivores.

Wetlands slow the flow of water through the vegetation and soil, and pollutants are often held in the soil. In addition, because the water is slowed, sediments tend to fall out, thus improving water quality and reducing turbidity downstream.

These natural floodplain functions associated with the natural or relatively undisturbed floodplain that moderates flooding, such as wetland areas, are critical for maintaining water quality, recharging groundwater, reducing erosion, redistributing sand and sediment, and providing fish and wildlife habitat. Preserving and protecting these areas and associated functions are a vital component of sound floodplain management practices for the City.

Wetlands in the City are shown in Section 4.2.1 and detailed in Table B-12.

Table B-12 City of Newark – Wetland Types and Acreages

Wetlands Type	Acres
Freshwater Emergent Wetland	83
Freshwater Pond	135
Lake	2,689
Riverine	24
Newark Total	**2,930**

Source: US Fish and Wildlife Service

Historic and Cultural Resources

Historic and cultural resources are difficult to replace. Should a natural disaster occur, these properties and locations can be at risk. The City of Newark has a stock of historically significant homes, public buildings, and landmarks. The California Department of Parks and Recreation Office of Historic Preservation (OHP) was the primary source of information. OHP administers the National Register of Historic Places, the California Register of Historical Resources, California Historical Landmarks, and the California Points of Historical Interest programs. Each program has different eligibility criteria and procedural requirements. These requirements are detailed in Section 4.3.1 of the Base Plan. Table B-13 shows no historic buildings in the City in the OHP Database.

Table B-13 City of Newark – Historic Resources

Resource Name (Plaque Number)	National Register	State Landmark	California Register	Point of Interest	Date Listed
–	–	–	–	–	–

Source: California Department of Parks and Recreation Office of Historic Preservation, http://ohp.parks.ca.gov/

It should be noted that these lists may not be complete, as they may not include those currently in the nomination process and not yet listed. Additionally, as defined by the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), any property over 50 years of age is considered a historic resource and is potentially eligible for the National Register. Thus, in the event that the property is to be altered, or has been altered, as the result of a major federal action, the property must be evaluated under the guidelines set forth by CEQA and NEPA. Structural mitigation projects are considered alterations for the purpose of this regulation.

The 2013 City of Newark General Plan noted that Old Town is the historic center of Newark. Its grid of streets reflects the original Town Plan from 1878. Its land use pattern was already well-established by the time Newark incorporated in 1955. The area includes a diverse mix of uses, including single and multi-family housing, retail stores, restaurants, service businesses, light industry, public buildings, and churches. It includes a commercial district along Thornton Avenue and a residential area with a variety of housing types and densities. Additionally, Newark has Watkins Hall – 1889 (across from Thornton Fire), as well as a Native American burial grounds in the City.

Economic Assets and Community Activities of Value

Assessing the vulnerability of the City of Newark to natural hazards and disasters also involves inventorying the economic assets and community activities of value in the City.

Economic Assets

After a disaster, economic resiliency is one of the major drivers of a speedy recovery. Each community has specific economic drivers. These include:

- Primary Economic Sectors
- Major employers
- Commercial Centers

In the City of Newark it was noted that hotels have a sizable economic benefit to the City. They generate significant revenue through the transient occupancy tax. With all of the tech companies in the area, the hotels generally remain full and provide significant revenue. The City noted that during 2020 to 2022 there was a significant impact to City revenues during the Covid shutdowns due in part to low hotel occupancies. Combined, the IT sector and the Hotel sector are key economic assets that, if impacted during hazard events, could have a significant economic impact on City.

Two other key businesses that need to be operational post disaster include Home Depot and Costco. They both bring in significant sales tax and would be needed to assist in recovery. Other key economic assets that generate sales tax include the NewPark Mall. The Farmer's market is also held at this location on weekends. Others include the Lion Market shopping Center and Rosemont square.

Another area that brings in revenue to the City are their Recreational Facilities. These include the:

- City of Newark State Licensed Child Care
- Clark W. Redeker Newark Senior Center

- George M. Silliman Community Activity Center
- Newark Community Center

Again, during Covid when all of these recreation centers were shut down, there was reduced revenue to the City. Should these recreational facilities be shut down or impacted during future hazard events or disasters, the City will likely experience similar reductions in revenues.

Community Activities of Value

Inventorying economic assets in the City and their vulnerability to natural hazards and disasters also involves inventorying activities that have value to the community. This includes activities that are important to a community, like long-standing traditions such as a festival or fair. Some areas rely on seasonal industries to sustain them throughout the year. Many of these activities also provide economic benefits to the City. A hazard event that cancels or shortens these can affect a community's livelihood and can make disaster recovery more difficult or prolonged. This includes activities such as:

- Festivals and Fairs
- Sporting Events
- Tourism

The City noted the following community activities of value:

- Newark Days,
- Family Day at the Park,
- Grooving at the Park,
- Tree lighting (Christmas) Holy Ghost Parade,
- Outdoor movie night. Silliman Park (Sports park)
- Newark Memorial High School sporting events.

Growth and Development Trends

As part of the planning process, the City looked at changes in growth and development, both current and future, and examined these changes in the context of hazard-prone areas, and how the changes in growth and development affect loss estimates and vulnerability over time.

Land Use

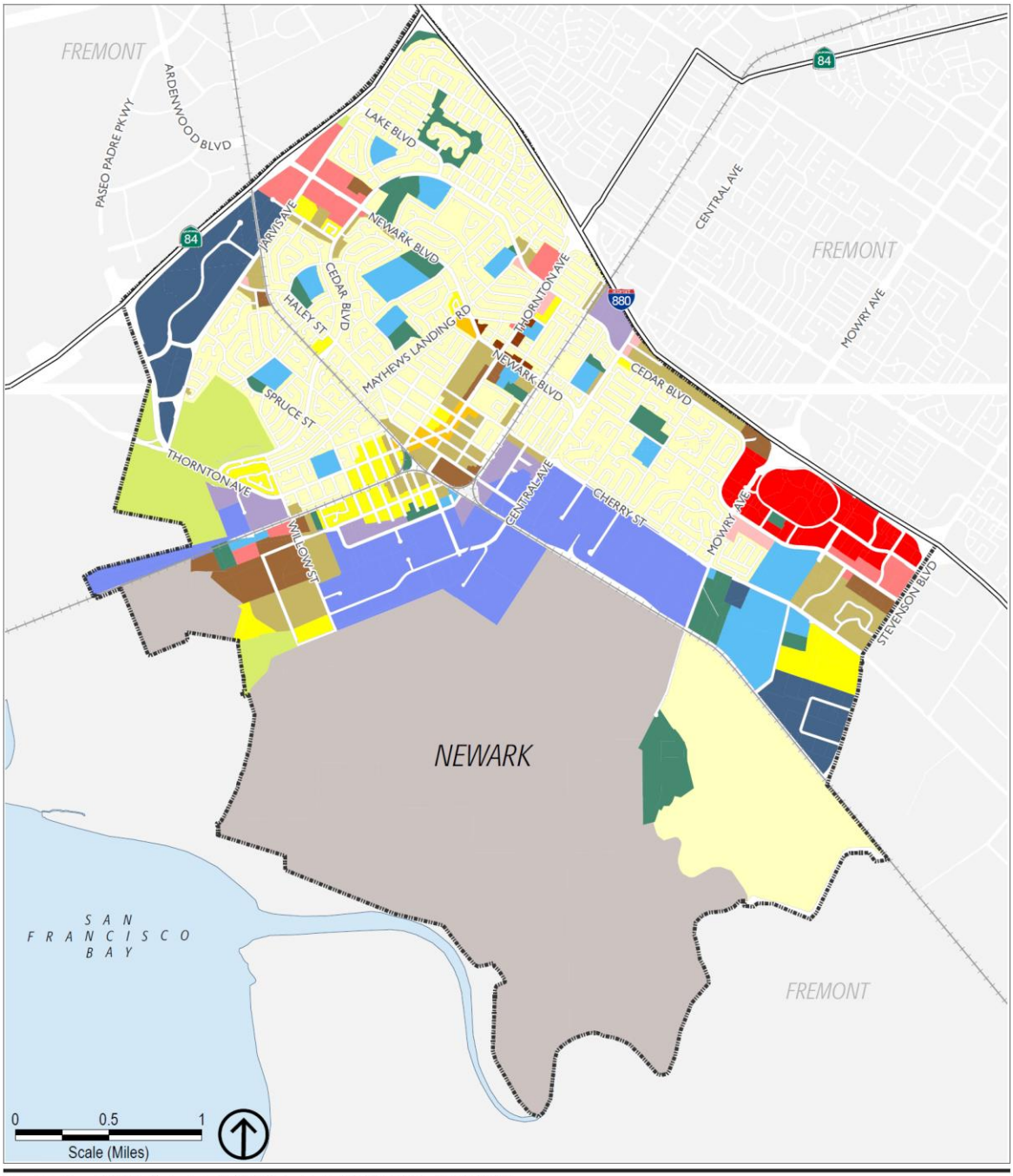
State planning law requires that the land use element of a general plan include a statement of the standard population density, building intensity, and allowed uses for the various land use designations in the plan (Government Code Section 65302(a)). The City's land use designations are generally described below and mapped on the Land Use Diagram (Figure B-10). The Newark Municipal Code provides detailed land use and development standards for development.

The Municipal Code works hand in hand with the City's General Plan Land Use Element. The purpose of the Land Use Element is to provide goals, policies, actions diagrams and standards to guide future land use decisions in Newark. While all elements of the General Plan have equal weight under California law, in some respects this Element is the most far-reaching. It informs all other elements of the Plan, shaping the

future transportation network and the location of future housing sites, and influencing public facility requirements and park and recreation needs. It defines the City's future open space system and responds to natural resource conservation issues and safety hazards. It establishes the basic pattern of development in the City for the next 20-25 years, including land uses and densities, and presents the policies and actions to ensure that future development will enhance the quality of life for all Newark residents.

Existing land use for the City of Newark from the 2013 City of Newark General Plan Land Use Element is shown on Figure B-10.

Figure B-10 City of Newark – Land Use Diagram



Source: City of Newark 2013 General Plan Land Use Element

Population Trends and Projections

The City is expected to continue to increase in population. The 2023-2031 City of Newark Housing Element contained population projections for the City from 2020 to 2040. These are shown on Table B-14. Average annual population growth as shown in this table is 0.65%.

Table B-14 City of Newark – Future Population Projections

Forecast Factor	2020	2030	2045
Population	48,966	52,100	57,600

Source: 2015-2023 City of Newark Housing Element

Development since 2017 Plan

As discussed in Section 4.3.1 of the Base Plan, future development has occurred in the City since the last plan. Some of this has occurred in hazard prone areas. The City Building Inspection Division tracked total building permits issued since 2017 for the City. These are tracked by total development, property use type, and hazard risk area. These are shown in Table B-15 and Table B-16.

Table B-15 City of Newark – Total Development Since 2017

Property Use	2017	2018	2019	2020	2021	2022
Agricultural	0	0	0	0	0	0
Commercial	2	6	11	11	4	3
Industrial	11	11	12	3	4	0
Residential	246	293	298	215	265	163
Unknown	0	0	0	0	0	0
Total	**259**	**310**	**322**	**229**	**273**	**166**

Source: City of Newark Building Inspection Division

Table B-16 City of Newark – Development in Hazard Areas since 2017

Property Use	1% Annual Chance Flood	Levee Protected Area	Wildfire Risk Area[1]	Other
Agricultural	0	0	0	
Commercial	0	0	0	
Industrial	0	0	0	
Residential	0	0	0	
Unknown	0	0	0	
Total	**0**	**0**	**0**	

Source: City of Newark Building Inspection Division

[1]Moderate or higher wildfire risk area

No development in the identified hazard areas, including the 1% annual chance floodplains and high wildfire risk areas, occurred. If it were, it would be completed in accordance with all current and applicable development codes and standards and should be adequately protected. Thus, with the exception of more

people living in the area potentially exposed to natural hazards, this growth should not cause a significant change in vulnerability of the City to identified priority hazards.

Future Development Areas

It is important to review future development plans for the City. Future development should be sited in areas that are away from known hazard risks. If this is not possible, mitigation should be done to ensure that future development is protected against future hazards. The 2023-2031 City of Newark housing Element noted that the most important resource for meeting Newark's future housing needs is a sufficient supply of land zoned for housing and with supportive infrastructure and pro-housing policies and programs. To that end, the City provided the areas it anticipates it will grow and develop the next 5 years.

GIS Analysis

The City has 28 sites it anticipates will be developed in the next 5 years. These were provided by the City and mapped in GIS. These are shown on Figure B-11 and Figure B-12 and detailed in Table B-17. More information on how these areas will be affected by hazards is discussed in each Future Development section in the hazard discussion in Section B.4.3 below.

Figure B-11 City of Newark – Future Development Areas

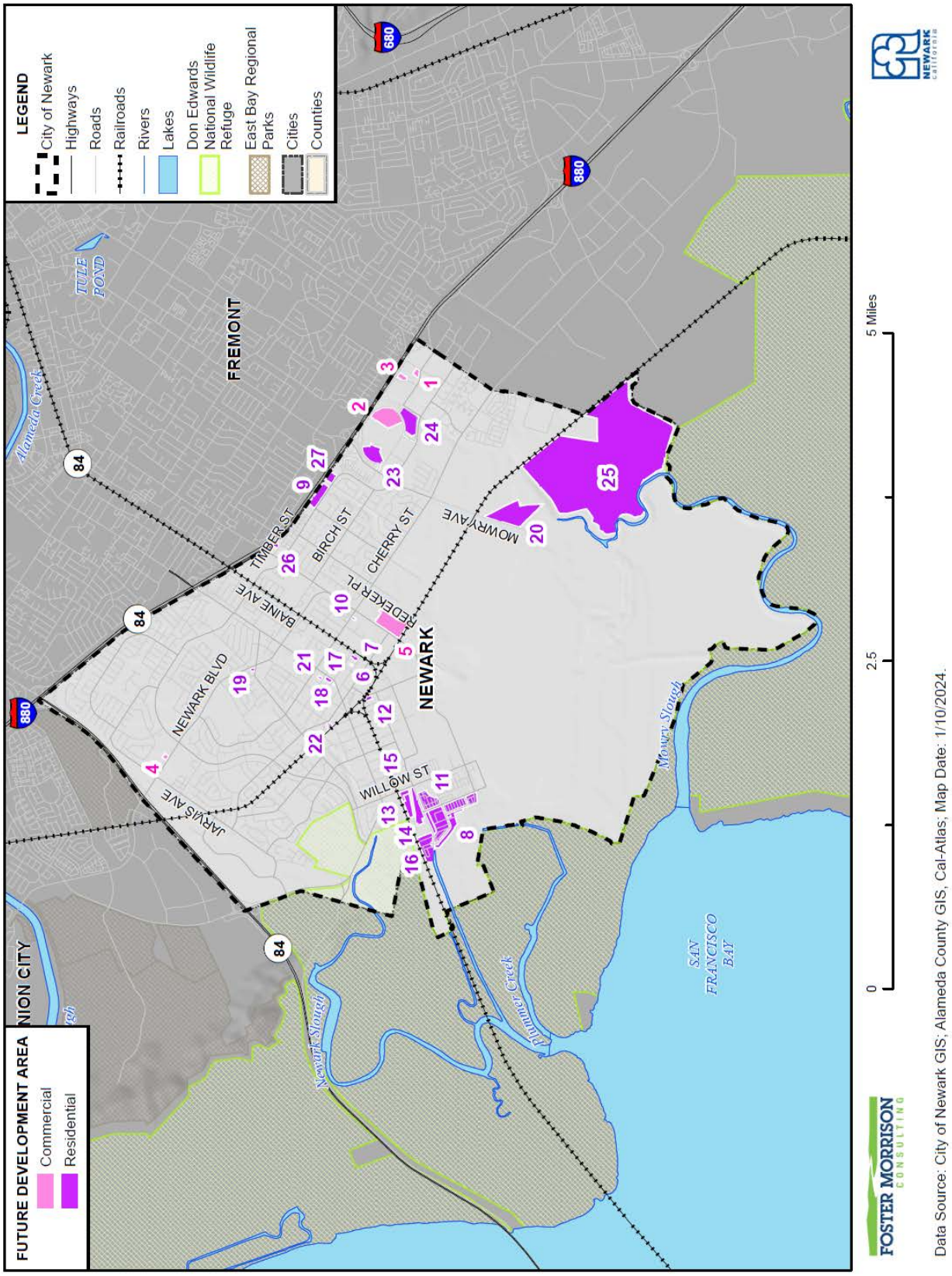


Figure B-12 City of Newark – Future Development Areas Map Legend

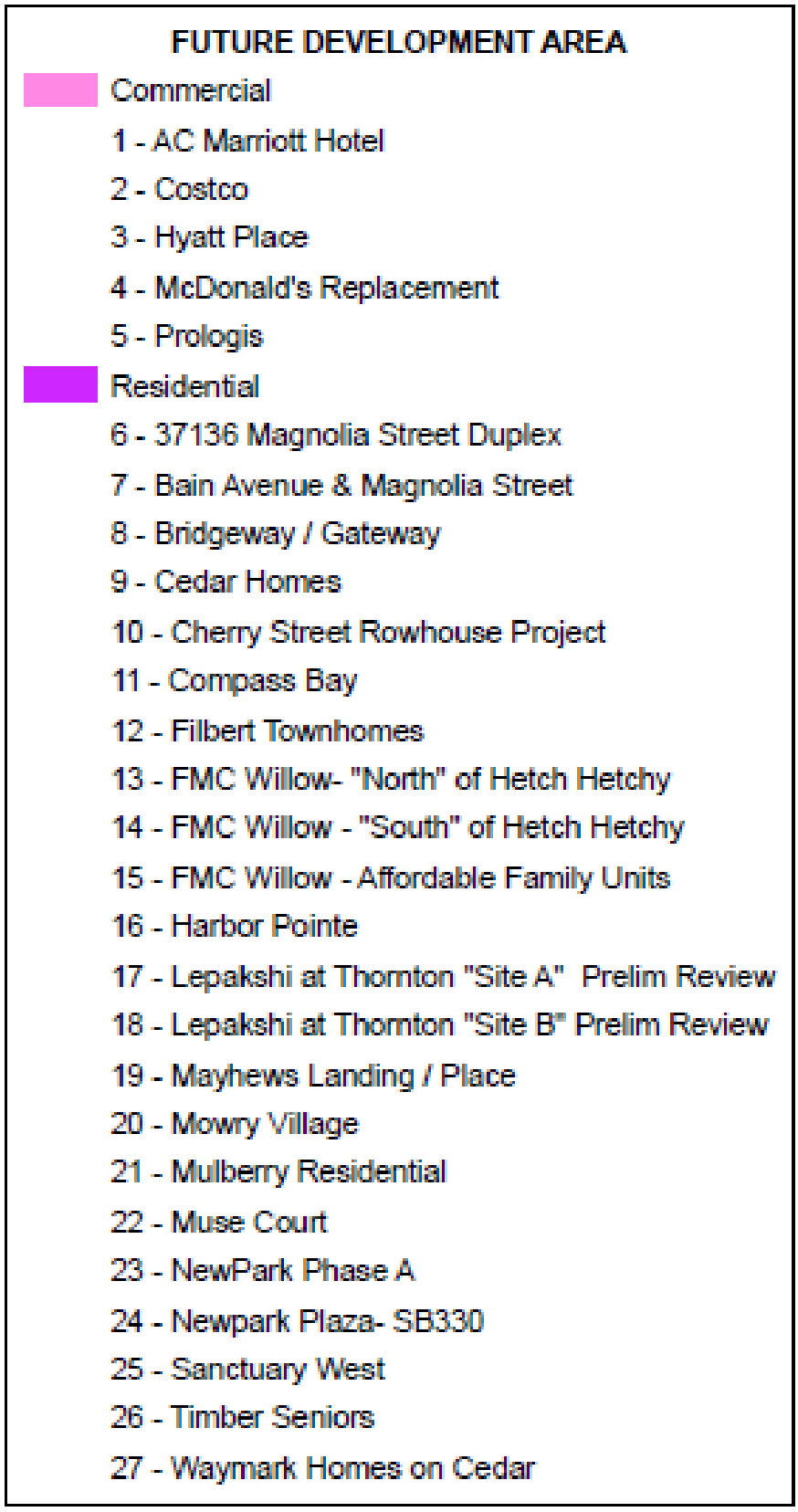


Table B-17 City of Newark – Future Development Areas with Site Numbers

Property Use / Site Number	Future Development Name	Use	Net New Units	Site Count
Commercial				
1	AC Marriott Hotel	Hotel	1	1
2	Costco	Retail	1	1
3	Hyatt Place	Hotel	1	1
4	McDonald's Replacement	Eating & Drinking	1	1
5	Prologis	Light Industrial	1	1
Commercial Total				**5**
Residential				
6	37136 Magnolia Street Duplex	(blank)		1
7	Bain Avenue & Magnolia Street	Medium Density Residential	4	1
8	Bridgeway / Gateway	Various	580	1
9	Cedar Homes	(blank)	118	1
10	Cherry Street Rowhouse Project	Medium Density Residential	7	1
11	Compass Bay	Medium Density Residential	138	1
12	Filbert Townhomes	Medium Density Residential	16	1
13	FMC Willow- "North" of Hetch Hetchy	Various	64	1
14	FMC Willow - "South" of Hetch Hetchy	Various	215	1
15	FMC Willow - Affordable Family Units	(blank)	91	1
16	Harbor Pointe	(blank)	192	1
17	Lepakshi at Thornton "Site A" Prelim Review	Commercial Mixed Use	59	1
18	Lepakshi at Thornton "Site B" Prelim Review	Commercial Mixed Use	23	1
19	Mayhews Landing / Place	Medium Density Residential	6	1
20	Mowry Village	(blank)	203	1

Property Use / Site Number	Future Development Name	Use	Net New Units	Site Count
21	Mulberry Residential	Medium Density Residential	7	1
22	Muse Court	Medium Density Residential	14	1
23	NewPark Phase A	Regional Commercial	319	1
24	Newpark Plaza-SB330	(blank)	1000	1
25	Sanctuary West	Low Density Residential	469	1
26	Timber Seniors	Medium Density Residential	79	1
27	Waymark Homes on Cedar	(blank)	76	1
Commercial Total				22

Source: City of Newark Planning/GIS

B.4.2. Hazard Identification

Newark identified the hazards that affect the City and summarized their location, extent, likelihood of future occurrence, potential magnitude, and significance specific to the City (see Table B-18).

Table B-18 City of Newark—Hazard Identification Assessment

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly Likely	Critical	High	–
Coastal Flooding and Sea Level Rise	Limited	Highly Likely	Limited	Medium	High
Dam Failure	Extensive	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Extensive	Likely	Limited	Medium	High
Earthquake	Extensive	Highly Likely	Catastrophic	High	Low
Flood: 1%/0.2% annual chance	Significant	Occasional	Critical	High	High
Flood: Localized/Stormwater Flooding	Extensive	Highly Likely	Limited	Medium	Medium
Landslide	Significant	Likely	Limited	Low	Medium
Levee Failure	Limited	Unlikely	Limited	Low	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Likely	Negligible	Low	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rain and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Negligible	Low	Medium
Subsidence	Significant	Likely	Limited	Low	Medium
Tsunami	Limited	Unlikely	Limited	Medium	Low
Wildfire	Significant	Highly Likely	Limited	Medium	Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance (*Medium or High Significance=Priority Hazard*)
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

B.4.3. Hazard Profiles and Vulnerability to Specific Hazards

This section includes the hazard profiles and vulnerability assessment for hazards ranked of medium or high significance specific to the City (as identified in the Significance column of Table B-18) and also includes a hazard profile and vulnerability assessment to the four primary hazards to the State of California: dam failure, earthquake, flood, and wildfire, regardless of the significance ranking by the City. Chapter 4 of the Base Plan provides more detailed information about these hazards and their impacts on the Tri-City Planning Area. Methodologies for evaluating vulnerabilities and calculating loss estimates are the same as those described in Section 4.3 of the Base Plan.

Hazard Profiles and Vulnerability Assessment Format

Each hazard specific section below begins with a summary of the Likelihood of Future Occurrence (from Table B-18) and the City's overall Vulnerability ranking. Vulnerability is measured in general, qualitative terms and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential. It is categorized into the following classifications:

- **Extremely Low**—The occurrence and potential cost of damage to life and property is very minimal to nonexistent.
- **Low**—Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**—Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**—Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have occurred in the past.
- **Extremely High**—Very widespread with catastrophic impact.

This is followed by the following sections:

- **Hazard Profile and Problem Description** – A hazard profile is included for each hazard. This includes information on:
  - ✓ A general discussion of the hazard and related issues.
  - ✓ **Location** and **Extent** - Location is the geographic area within the City that is affected by the hazard. Extent is the expected range of intensity for each hazard. These are discussed in specific detail for mapped hazards, and in more general detail for those hazards that do not have discrete mapped hazard areas.
  - ✓ **Past Occurrences** – Past occurrences are discussed for each hazard. A discussion of disaster declarations is included in each hazard section. Data specific to the City follows the disaster declarations for each hazard.
- **Vulnerability Assessment** – A vulnerability assessment for each hazard is presented specific to the City. This includes information on:
  - ✓ A general discussion of hazard vulnerabilities.
  - ✓ **Local Concerns** – The City provided information on how the City is uniquely affected by or vulnerable to each hazard.

- ✓ **Assets at Risk** – A discussion of the assets at risk follows, presented in the same format as in Section B.4.1 above. This includes sections on: People and Populations; Structures; Critical Facilities and Infrastructure, and Community Lifelines; Natural, Historic, and Cultural Resources, and Economic Assets and Community Activities of Value. These are discussed in specific terms for mapped hazards, and in more general terms for those hazards that are unmapped.

- **Impacts** – A discussion on hazard impacts follows. Impacts describe how each hazard can affect the City and their assets. The type and severity of impacts reflect both the potential magnitude of the hazard and the vulnerability of the asset. Impacts are also affected by the community's ability to mitigate, prepare for, respond to, and recover from an event.
- **Future Development** – A discussion of how future development will be affected by the hazard is also included. This is talked about specifically for mapped hazards, and in more general terms for those hazards that are unmapped.

Power Interruption/Power Failure: A Common Vulnerability of all Hazards

An impact of almost all hazards evaluated as part of this LHMP Update relates to power shortage and/or power failures. The US power grid crisscrosses the country, bringing electricity to homes, offices, factories, warehouses, farms, traffic lights and even campgrounds. According to statistics gathered by the U.S. Department of Energy, major blackouts are on the upswing. Incredibly, over the past two decades, blackouts impacting at least 50,000 customers have increased 124 percent. The electric power industry does not have a universal agreement for classifying disruptions. Nevertheless, it is important to recognize that different types of outages are possible so that plans may be made to handle them effectively. In addition to blackouts, brownouts can occur. A brownout is an intentional or unintentional drop in voltage in an electrical power supply system. Intentional brownouts are used for load reduction in an emergency. Electric power disruptions can be generally grouped into two categories: intentional and unintentional. More information on types of power disruptions can be found in Section 4.3 of the Base Plan.

Public Safety Power Shutoff (PSPS)

A new intentional disruption type of power shortage/failure event has recently occurred in California. In recent years, several wildfires have started as a result of downed power lines or electrical equipment. This was the case for the Camp Fire in 2018. As a result, California's three largest energy companies (including PG&E), at the direction of the California Public Utilities Commission (CPUC), are coordinating to prepare all Californians for the threat of wildfires and power outages during times of extreme weather. To help protect customers and communities during extreme weather events, electric power may be shut off for public safety in an effort to prevent a wildfire. This is called a PSPS. More information on PSPS criteria can be found in Section 4.3 of the Base Plan.

It was noted that PG&E is working to enhance its power network with Enhanced Powerline Safety Settings (EPSS) capable lines. EPSS are advanced safety settings. They allow PG&E powerlines to automatically turn off power within one-tenth of a second. This can happen when there's a hazard, like a tree branch falling into a powerline, which can cause a fire. These settings are in high fire-risk and surrounding areas. These have not yet been installed in and near the Tri-City area, as PG&E focuses on other very high fire hazard areas in its service territory first. It is thought these EPSS capable lines will eventually come to the Tri-City Planning Area.

Local Concerns

The City noted that City Hall does not have a universal power system (UPS) backup so the phone and IT system will go down after the 1-hour back-up system is exhausted. This would be similar at all off site centers as well. The City was impacted in 2019 for PSPS. Since then, PG&E has been able to mitigate the impact for Union City and there have been no recorded PSPS outages since. The City did note that there are potential risks from rolling brown or black outs due to lack of energy.

Climate Change

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile and Problem Description

Climate change adaptation is a key priority of the State of California. The 2023 State of California Multi-Hazard Mitigation Plan noted that climate change is already affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the State's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and earlier runoff of both snowmelt and rainwater in the year. In addition to changes in average temperatures, sea level, and precipitation patterns, the intensity of extreme weather events is also changing.

California's Adaptation Planning Guide (APG): Understanding Regional Characteristics (from 2017) has divided California into 11 different regions based on political boundaries, projected climate impacts, existing environmental setting, socioeconomic factors and regional designations. The City falls in the Bay Area Region. Climate projections for this region are shown in Section 4.3.6 of the Base Plan and include an increase in temperatures, moderate changes in rainfall, and increased sea level rise.

Location and Extent

Climate change is a global phenomenon. It is expected to affect the whole of the City of Newark, the Tri-City Planning area, surrounding counties, and State of California. There is no scale to measure the extent of climate change. Climate change exacerbates other hazards, such as drought, extreme heat, flooding, wildfire, and others. The speed of onset of climate change is very slow. The duration of climate change is not yet known but is feared to be tens to hundreds of years.

Past Occurrences

Disaster Declarations

Climate change has never been directly linked to any declared disasters.

City of Newark Events

While the City noted that climate change is of concern, no specific impacts of climate change could be recalled. The City noted that the strength of storms does seem to be increasing and the temperatures are getting hotter. The City also noted that over the last 5 years in Newark, the City has seen increased sustained winds and high winds along with years of drought followed by heavy rains and flooding.

Vulnerability to Climate Change

The whole of the City is at some measure of vulnerability to climate change. The City Planning team has concerns that the vulnerability will grow to be greater in the future. An assessment of a community's vulnerability to climate change begins with an understanding of local exposure to climate change. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The 2010 City of Newark Climate Action Plan noted that the City of Newark recognizes that climate change poses a potential threat to the community and to the environment. Locally, the forecasted changes accompanying climate change could dramatically reduce the availability of hydro-generated electricity, increase the incidence of forest fires, and lead to a rise in the level of San Francisco Bay that could impact lower elevation land in Newark. Rising temperatures year over year could eventually result in the need for additional essential facilities as cooling centers. The City of Newark is undertaking a Climate Action Plan Update in 2024 that will likely identify additional threats to the community and environment.

Assets at Risk

Assets at risk from climate change include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value.

People and Populations

Climate change affects people and populations within a community, especially those climate change issues related to increases in temperature over time. While all populations can be affected by temperature extremes, populations particularly vulnerable include the very old and very young, medically fragile people, people without means of shelter (and air conditioning) or transportation, people who are socially isolated and other socially vulnerable or underserved populations (as shown in Special Populations discussion in Section B.4.1). Acclimatization to heat may help reduce risks from heat waves in the healthy general population but may not be sufficient to protect those with underlying medical conditions.

Structures

Climate change, on its own, does not generally impact structures. However, structures in areas of increased wildfire, sea level rise, or flood areas exacerbated by the effects of climate change would be at increased

risk, as described throughout this LHMP. More information on how structures may be affected by climate change can be found in Section 4.3.6 of the Base Plan.

Critical Facilities and Infrastructure, and Community Lifelines

As with structures, critical facilities and infrastructure in areas of increased wildfire, sea level rise, or flood areas due to the effects of climate change would be at increased risk. Climate change is expected to increase the vulnerability of critical facilities and infrastructure to natural hazards.

Due to the slow onset of climate change, community lifelines in the City are expected to adapt over time to new climate normal. It is thought that community lifelines in the City would not be overwhelmed by climate change.

Natural, Historic, and Cultural Resources

San Francisco Bay and the associated estuarine ecosystem sit at the center of the region and serve as the outlet for the Sacramento and San Joaquin rivers. This estuary supports rich biodiversity, including many special-status species. These are all at risk from the effects of climate change. In addition to coastal areas, if heat changes wildfire patterns, all areas (on land) of the City are at increased risk from fire – including natural, historic, and cultural resources. More information on how natural, historic, and cultural resources may be affected by climate change can be found in Section 4.3.6 of the Base Plan.

Economic Assets and Community Activities of Value

All economic assets and community activities of value in the City are at some measure of risk to hazards exacerbated by climate change. Should storms or other climate-related hazard events occur, certain economic assets and activities could be adversely affected. This includes the hotel and IT sector, as well as recreational facilities in the City.

Impacts from Climate Change

The California APG: Understanding Regional Characteristics identified the following impacts specific to the Bay Area region in which the Tri-City Planning Area is part of:

- Increased temperatures
- Reduced precipitation
- Sea level rise – coastal inundation and erosion
- Public health – heat and air pollution
- Reduced agricultural productivity (e.g., wine grapes)
- Inland flooding
- Reduced tourism

In addition to these sources, the 2023 State of California Hazard Mitigation Plan noted that according to California's Fourth Climate Change Assessment, the state will experience the following climate impacts:

- Annual average daily high temperatures are expected to rise by 2.7° F by 2040, 5.8°F by 2070, and 8.8°F by 2100 compared to observed and modeled historical conditions. These changes are statewide averages.
- Heat waves are projected to become longer, more intense, and more frequent.
- Warming temperatures are expected to increase soil moisture loss and lead to drier conditions. Summer dryness may become prolonged, with soil drying beginning earlier in the spring and lasting longer into the fall and winter.
- Droughts are likely to become more frequent and persistent through 2100.
- The strength of the most intense precipitation and storm events affecting California is expected to increase.
- Snowpack levels are projected to decline significantly by 2100 due to reduced snowfall and faster snowmelt.
- Marine layer clouds are projected to decrease.
- Extreme wildfires (i.e., fires larger than 24,710 acres) would occur 50 percent more frequently. The maximum area burned statewide may increase 178 percent by the end of the century.
- Sea level rise is expected to continue to increase beach, cliff, and bluff erosion.

Climate change will continue to influence natural hazards and play a role in the nature and extent of natural hazards and their impacts on City assets. In general, changes in population patterns and land use and development will also be a factor in the extent by which climate change is an issue over time. Thus, any changes in population patterns and land use and development would likely increase the impacts associated with climate change on City assets.

Future Development

Climate change can influence development in the City over time. The City could see population fluctuations as a result of climate impacts relative to those experienced in other regions, and these fluctuations are expected to impact demand for housing and other development. While there are currently no formal studies of specific migration patterns expected to impact the City and County region, climate-induced migration was recognized within the UNFCCC Conference of Parties Paris Agreement of 2015 and is expected to be the focus of future studies. Current development policies in the Conservation and Sustainability Element of the Newark General Plan include:

- Linking Land Use and Transportation
- Ensuring Pedestrian and Bicycle Friendly Design
- Consideration of Climate in Transportation Planning
- Planning for Sea Level Rise

The Climate Action Plan Update to be undertaken by the City will likely identify future development considerations and new or updated policies to address greenhouse gas reduction goals. Additional findings in the current Active Transportation Plan Update and the Sea Level Rise Resiliency Study may also contribute to future development policies

Coastal Flooding and Sea Level Rise

Likelihood of Future Occurrence–Highly Likely
Vulnerability–High

Hazard Profile and Problem Description

Historically, cities, towns and villages were often settled around ports and waterways along the nation's coastlines. Although the coastal areas of the United States comprise only one-fifth of the land area of the contiguous 48 states, they account for more than half of the nation's population and housing supply. The continued increase in coastal population leads to increased coastal development, which places greater numbers of people and structures at risk from coastal hazards. Coastal flooding can result from a variety of different causes including storm surges created by tidal influences; storms like hurricanes and tropical cyclones, strong rain and wind storm events; rising sea levels due to climate change; and to a much lesser extent by possible tsunamis events.

In the past decade, there have been groundbreaking studies and an increased public awareness on the worldwide effects of climate change associated with global warming. Studies continue to document that global warming is continuing at progressive rates, which has been demonstrated by warmer and colder seasonal temperatures and patterns of more severe seasonal storm events, including coastal flooding. Sea level rise has accelerated in recent decades due, in part, to increasing ice loss in the world's polar regions. Latest data from the World Meteorological Organization shows that global mean sea level reached a new record high in 2021 (the latest year for which reporting data has been analyzed), rising an average of 4.5 millimeters per year over the period 2013 to 2021. It is projected that sea levels will continue to rise as precipitation continues to increase and ice caps continue to melt.

King Tides

Coastal flooding and sea level rise are exacerbated during periods of extreme tides. Tides are long-period waves that roll around the planet as the ocean is "pulled" back and forth by the gravitational pull of the moon and the sun as these bodies interact with the Earth in their monthly and yearly orbits. According to NOAA, during full or new moons—which occur when the Earth, sun, and moon are nearly in alignment—average tidal ranges are slightly larger. This occurs twice each month. The moon appears new (dark) when it is directly between the Earth and the sun. The moon appears full when the Earth is between the moon and the sun. In both cases, the gravitational pull of the sun is "added" to the gravitational pull of the moon on Earth, causing the oceans to bulge a bit more than usual. This means that high tides are a little higher and low tides are a little lower than average. These are called spring tides, a common historical term that has nothing to do with the season of spring. Rather, the term is derived from the concept of the tide "springing forth." Spring tides occur twice each lunar month all year long, without regard to the season. Spring tides are also sometimes called (non-scientifically) king tides.

Location and Extent

The coastal areas of the City at risk for coastal flooding will also be affected by sea level rise (especially during periods of extreme tides). These include areas with low-lying elevations (some at sea level) and areas that are now filled and were once marshland. Coastal flooding areas in FEMA Digital Flood Insurance Rate Map (DFIRM) VE zones are shown on Figure B-76 in the Flood: 1%/0.2% Annual Chance section. Duration of coastal flooding generally lasts as long as the storm that causes it and is relatively short, with a quick speed of onset. There is no scientific scale to measure coastal flooding, as floods are generally measured in depth, extent, and velocity of flooding.

Coastal flooding and potential sea level rise scenarios are shown on Figure B-13, Figure B-14, and Figure B-15. Extents by scenario are detailed in Table B-19. As shown in the table, there are small amounts in the existing conditions scenarios, while the 1-meter and 2-meter scenario show moderate and sizable amounts of the City would be affected, respectively. Duration of sea level rise is thought to be long. The speed of onset is slow. There is no scientific scale for sea level rise, other than the actual physical measurement of sea level.

Figure B-13 City of Newark – Sea Level Rise Existing Conditions Scenarios

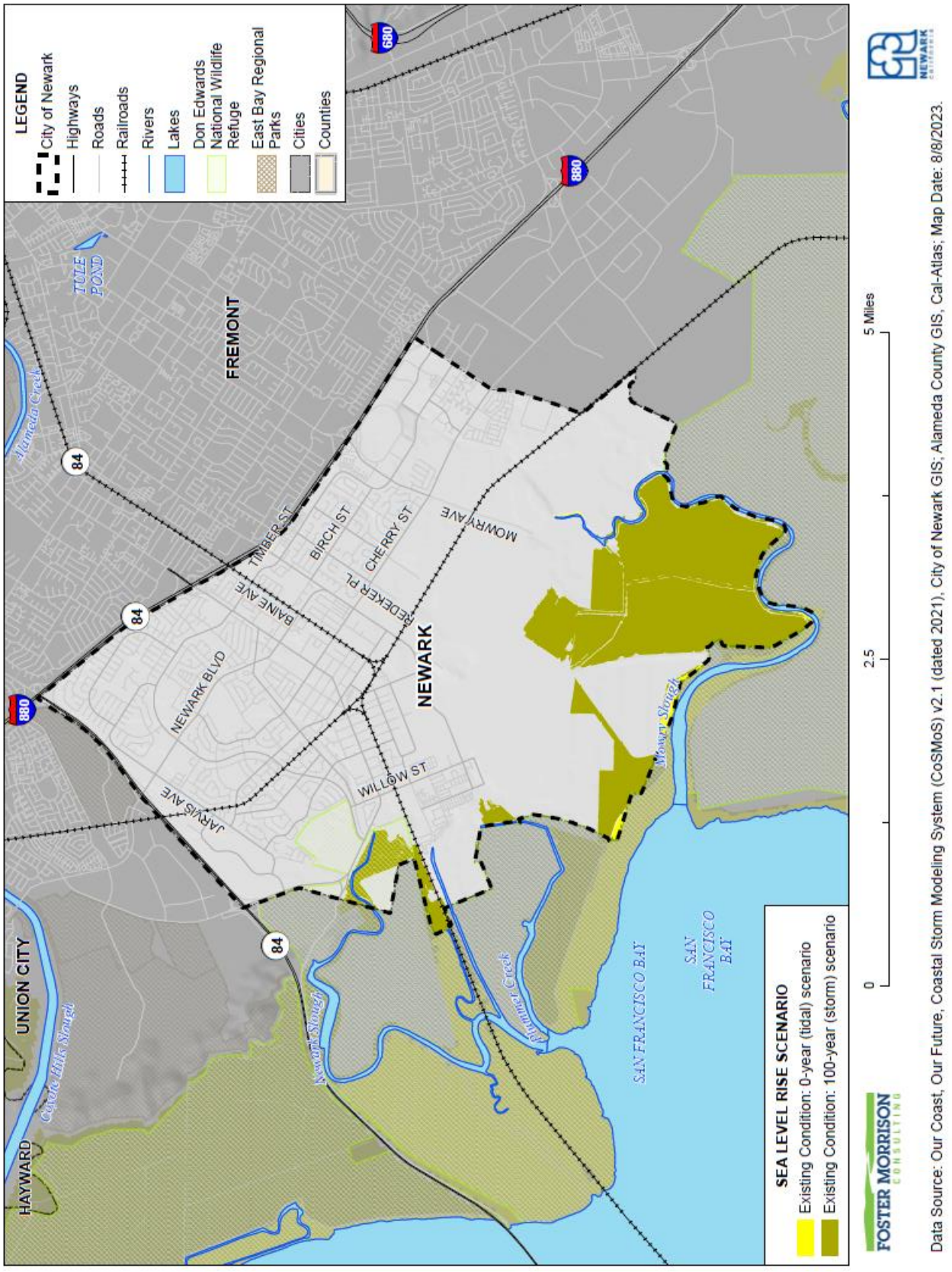


Figure B-14 City of Newark – Sea Level Rise 1 Meter Scenarios

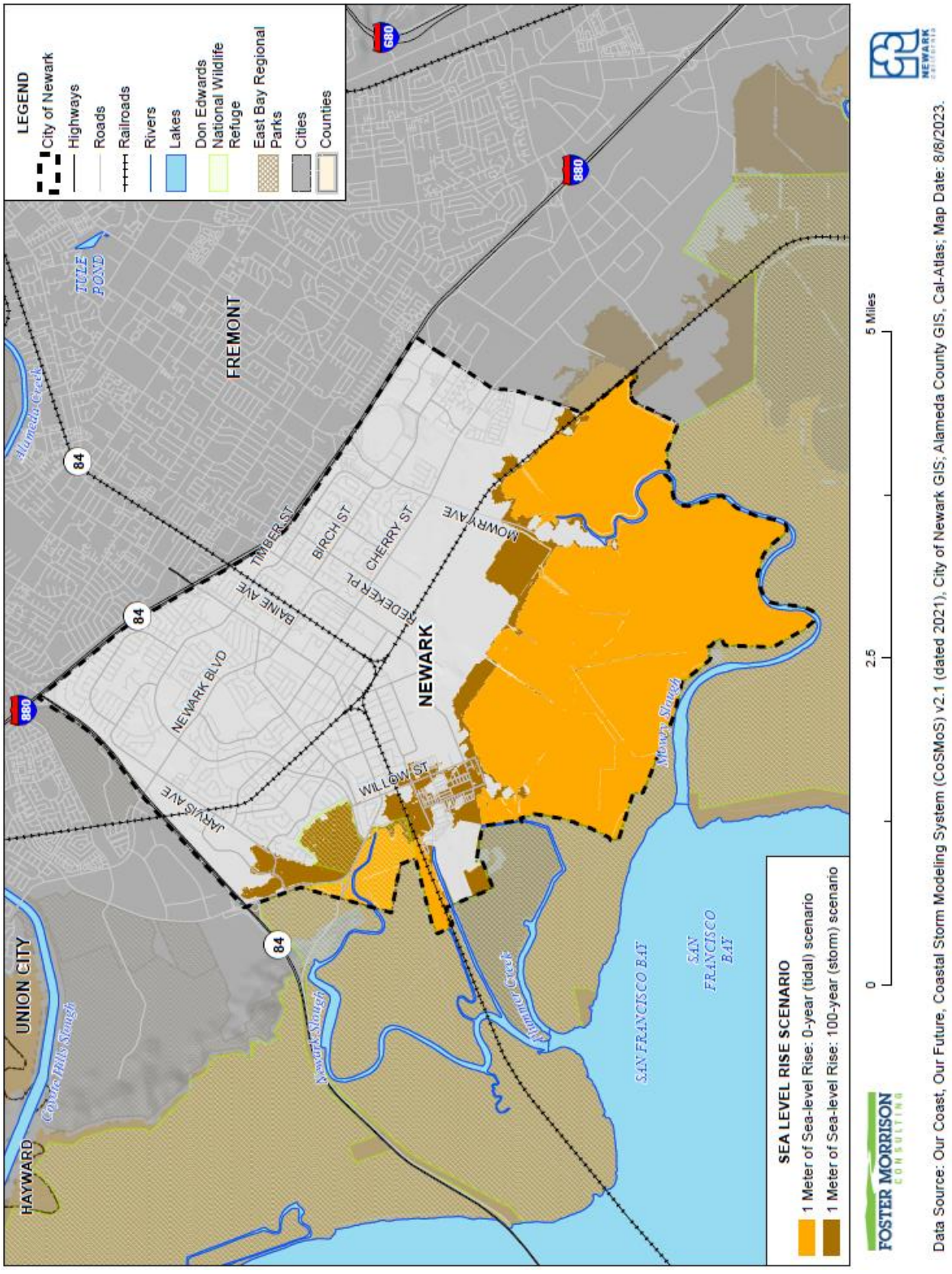


Figure B-15 City of Newark – Sea Level Rise 2 Meter Scenarios

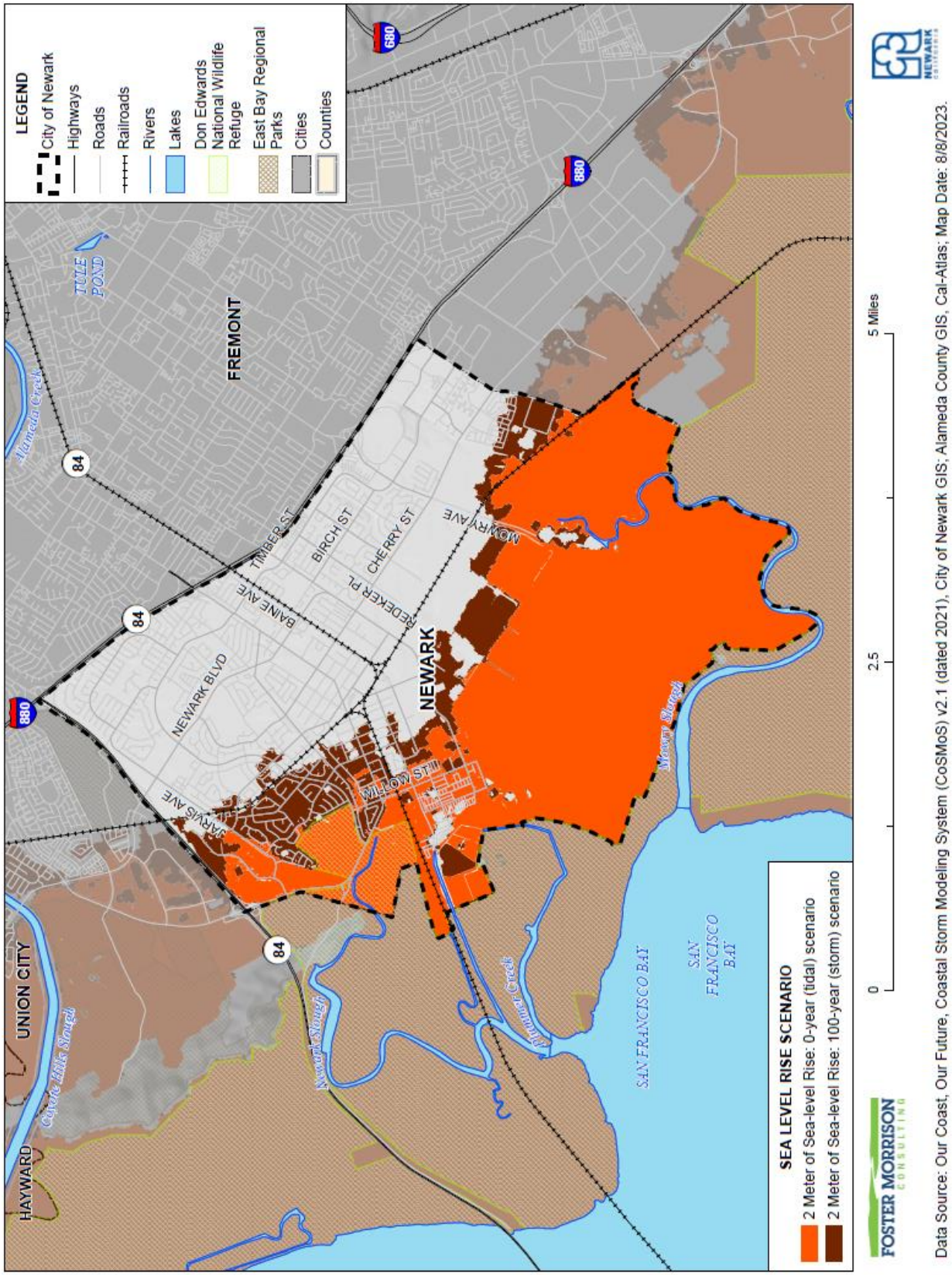


Table B-19 City of Newark – Sea Level Rise Scenario Geographical Extents

Sea Level Rise Scenario	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Existing Condition: 0-year (tidal) scenario	58.99	0.40%	0.62	0.01%	58.38	1.13%
Existing Condition: 100-year (storm) scenario	1,448.71	9.86%	19.9	0.21%	1,428.81	27.74%
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario	3,317.94	22.59%	272.87	2.86%	3,045.08	59.12%
1 Meter (3.1 feet) of Sea Level Rise: 100-year (storm) scenario	4,167.98	28.38%	568.96	5.97%	3,599.02	69.87%
2 Meter (6.2 feet) of Sea Level Rise: 0-year (tidal) scenario	4,612.32	31.40%	847.62	8.89%	3,764.69	73.09%
2 Meter (6.2 feet) of Sea Level Rise: 100-year (storm) scenario	5,845.21	39.80%	1,737.72	18.22%	4,107.49	79.74%

Source: Cosmos 2021

Past Occurrences

Disaster Declarations

There have been 19 state and 19 federal disaster declarations due to flooding and heavy rains and storms in Alameda County as shown in Table B-20. These events are known to have caused some measures of coastal flooding, as compounded by sea level rise, affecting the City. No disaster declarations have occurred specific to sea level rise.

Table B-20 Alameda County Disaster Declarations 1950-2023 from Flood (including Heavy Rains and Storms)

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	19	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (twice)

Source: Cal OES, FEMA

City of Newark Events

The City noted the past events are included in the Flood: 1% and 0.2% Annual Chance section below for coastal flooding. No sea level rise events were noted.

Vulnerability to Coastal Flood and Sea Level Rise

Coastal flooding compounded by sea level rise will flood areas not previously prone to flooding. In addition, as riverine and coastal waters come together at river mouths, coastal lagoons, and estuaries, higher

water levels at the coast may cause water to back up and increase upstream flooding. Drainage systems that discharge close to sea level are expected to have similar problems, and inland areas may become flooded if outfall pipes back up with saltwater. Coastal areas of the City are at risk to coastal flooding and sea level rise (especially during periods of extreme tides).

According to the 2021 *Critical Infrastructure at Risk – Sea Level Rise Planning Guidance for California's Coastal Zone* by the California Coastal Commission, other climate change impacts such as increases in the amount of precipitation falling as rain rather than snow will add to river flooding in some areas, as will predicted increases in the intensities of rainfall events. Wildfire damage in coastal watersheds can also increase flooding risks to our shorelines.

As seas rise, waves and tides will force water further and further inland, particularly during coastal storms, triggering consequences including both episodic and increased shoreline erosion, as well as damage to shoreline development. Erosion rates along coastal bluffs, beaches, and dunes are expected to increase with rising sea levels and are likely to further increase if waves, storms, and coastal flooding increase in size and intensity or become more frequent. Large sections of the California coast consist of coastal bluffs that are often highly susceptible to erosion. Fire damage in coastal locations could also result in significant erosion of exposed slopes that have lost vegetation. As sea level rises, the amount of time that these bluffs are exposed to wave attack and ocean waters will increase, causing further erosion. This, in turn, could trigger landslides and the loss of structural and geologic stability of bluffs. Signs of these effects are already becoming evident along various portions of the shoreline.

In addition to storm flooding and coastal erosion, sea level rise will also impact tidal flooding. As the ocean migrates inland, new lands will become tidally influenced and more areas will become permanently submerged. Bathymetry, built structures, and the natural coastline configuration will influence how rising seas will translate into encroaching tidal footprints.

Research also indicates that sea level rise is likely to raise groundwater levels and push saltwater into fresh groundwater; however, the degree of impact will vary greatly depending on local conditions. When a low-lying coastal area has shallow groundwater with subsurface connections to the ocean, sea level rise can cause groundwater levels to rise and emerge at the surface, contributing to chronic flooding.

Additionally, even if groundwater is relatively deep in a low-lying area, existing lower groundwater can rise to shallow elevations, increasing the need for pumping to protect infrastructure from inundation. Sea level rise may also drive seawater intrusion into freshwater aquifers, increasing the salinity of groundwater and leading to potential impacts to infrastructure and water supplies. Generally, the most vulnerable areas will be where groundwater is shallow, where aquifers are unconfined along low-lying coasts, or where aquifers have already experienced overdraft and saltwater intrusion.

An assessment of a community's vulnerability to climate change begins with an understanding of local exposure to coastal flooding and sea level rise. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

Recent development activity in Newark has been designed to take potential future sea level rise into consideration. The City is currently undertaking a Sea Level Rise Resiliency Study to identify additional specific local concerns, issues and vulnerabilities. This study will also identify opportunities for mitigation to minimize future impacts.

Assets at Risk

Assets at risk from coastal flood and sea level rise include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations located in areas subject to coastal flooding and sea level rise are at some risk to these hazards. This includes those that reside and recreate in coastal areas, including FEMA DFIRM VE Zones and within areas inundated by the CosMoS sea level rise scenarios. Certain vulnerable populations located within areas prone to coastal flooding and sea level rise may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

City residents that live in these coastal flooding and sea level rise areas are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to Newark's residential populations located in these hazard areas, the CoSMoS sea level rise scenarios were overlayed on the parcel layer. Those residential parcel centroids that intersect the scenario areas were counted and multiplied by the 2020 Census Bureau average household factors for Newark – 3.32. Analysis results are shown in Table B-21.

Table B-21 City of Newark – Improved Residential Parcels and Population by Sea Level Rise Scenario

Sea Level Rise Scenario/Jurisdiction	Improved Residential Parcels	Population at Risk
Existing Conditions –0-year (tidal) scenario		
City of Newark	0	0
Existing Conditions – 100-year Scenario		
City of Newark	0	0
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario		
City of Newark	0	0
1 Meter (3.1 feet) of Sea Level Rise: 100-year scenario		
City of Newark	758	2,517

2 Meter (6.2 feet) of Sea Level Rise: 0-year (tidal) scenario		
City of Newark	1,034	3,433
2 Meter (6.2 feet) of Sea Level Rise: 100-year scenario		
City of Newark	3,067	10,182

Source: Cosmos 2021, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau

Structures

Certain structures in the City are at risk to coastal flooding and sea level rise and primarily include those structures located in areas prone to coastal flooding and sea level rise as shown in the CosMoS sea level rise scenarios, (and the FEMA DFIRM VE flood zones which are discussed in more detail in the Flood: 1%/0.2% Annual Chance section below). GIS was used to determine the possible impacts of coastal flooding and sea level rise on parcels and structures within the City of Newark. The methodology described in Section 4.3.7 of the Base Plan was followed in determining parcels and structures at risk to the six sea level rise scenarios. Table B-22 is a summary table for the City of Newark. Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the City are shown for each of the six sea level rise scenarios. Table B-23 breaks down Table B-22 by property use for each scenario.

Table B-22 City of Newark – Count and Value of Parcels (and Structures) in Sea Level Rise Scenarios

Sea Level Rise Scenario/ Jurisdiction	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Existing Conditions –0-year (tidal) scenario						
Newark	2	0	$0	$0	$0	$0
Existing Conditions – 100-year Scenario						
Newark	19	-	$2,430,244	$0	$0	$2,430,244
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario						
Newark	91	4	$72,875,566	$15,650,137	$15,650,137	$104,175,840
1 Meter (3.1 feet) of Sea Level Rise: 100-year scenario						
Newark	1,203	783	$483,575,703	$773,730,050	$512,281,394	$1,769,587,147
2 Meter (6.2 feet) of Sea Level Rise: 0-year (tidal) scenario						
Newark	1,599	1,073	$710,944,847	$1,266,914,275	$1,057,205,839	$3,035,064,961
2 Meter (6.2 feet) of Sea Level Rise: 100-year scenario						
Newark	3,898	3,170	$1,336,138,118	$2,497,079,905	$1,975,028,267	$5,808,246,290

Source: Cosmos 2021, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table B-23 City of Newark – Count and Value of Parcels in Sea Level Rise Scenario by Property Use

Sea Level Rise Scenario/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Existing Condition: 0-year (tidal) scenario						
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	2	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Utilities	0	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
Existing Condition: 0-year (tidal) scenario Total	**2**	**0**	**$0**	**$0**	**$0**	**$0**
Existing Condition: 100-year scenario						
Agricultural	7	0	$2,430,244	$0	$0	$2,430,244
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	10	0	$0	$0	$0	$0
Industrial	1	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Utilities	1	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
Existing Condition: 100-year scenario Total	**19**	**0**	**$2,430,244**	**$0**	**$0**	**$2,430,244**
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario						
Agricultural	17	1	$2,669,491	$3,339,480	$3,339,480	$9,348,451
Commercial	3	3	$15,989,336	$12,310,657	$12,310,657	$40,610,650
Government / Institutional	28	0	$0	$0	$0	$0

Sea Level Rise Scenario/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Industrial	3	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Unknown	3	0	$23,661,573	$0	$0	$23,661,573
Utilities	3	0	$0	$0	$0	$0
Vacant	34	0	$30,555,166	$0	$0	$30,555,166
1 Meter (3.1 feet) of Sea Level Rise: 0-year (tidal) scenario Total	**91**	**4**	**$72,875,566**	**$15,650,137**	**$15,650,137**	**$104,175,840**
1 Meter (3.1 feet) of Sea Level Rise: 100-year scenario						
Agricultural	21	1	$2,688,324	$3,339,480	$3,339,480	$9,367,284
Commercial	9	6	$38,800,827	$51,565,837	$51,565,837	$141,932,501
Government / Institutional	47	0	$61,110	$0	$0	$61,110
Industrial	9	5	$45,298,108	$103,339,986	$155,009,980	$303,648,074
Recreational	0	0	$0	$0	$0	$0
Residential	889	758	$270,129,966	$604,732,182	$302,366,097	$1,177,228,245
Unknown	4	0	$23,661,573	$0	$0	$23,661,573
Utilities	7	0	$0	$0	$0	$0
Vacant	217	13	$102,935,795	$10,752,565	$0	$113,688,360
1 Meter (3.1 feet) of Sea Level Rise: 100-year scenario Total	**1,203**	**783**	**$483,575,703**	**$773,730,050**	**$512,281,394**	**$1,769,587,147**
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario						
Agricultural	22	1	$2,688,324	$3,339,480	$3,339,480	$9,367,284
Commercial	14	9	$52,213,963	$102,507,377	$102,507,377	$257,228,717
Government / Institutional	55	0	$61,110	$0	$0	$61,110
Industrial	21	15	$158,377,309	$376,726,894	$565,090,342	$1,100,194,545
Recreational	0	0	$0	$0	$0	$0
Residential	1,196	1,034	$345,513,296	$772,537,259	$386,268,640	$1,504,319,195
Unknown	4	0	$23,661,573	$0	$0	$23,661,573
Utilities	9	0	$0	$0	$0	$0

Sea Level Rise Scenario/ Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Vacant	278	14	$128,429,272	$11,803,265	$0	$0
2 Meter (6.2 feet) of Sea Level Rise: 0-year (tidal) scenario Total	**1,599**	**1,073**	**$710,944,847**	**$1,266,914,275**	**$1,057,205,839**	**$3,035,064,961**
2 Meter (6.2 feet) of Sea Level Rise: 100-year scenario						
Agricultural	26	1	$2,768,344	$3,339,480	$3,339,480	$9,447,304
Commercial	56	38	$98,811,365	$174,884,426	$174,884,426	$448,580,217
Government / Institutional	87	0	$92,068	$0	$0	$92,068
Industrial	56	48	$282,138,436	$643,431,577	$965,147,367	$1,890,717,380
Recreational	0	0	$0	$0	$0	$0
Residential	3,299	3,067	$763,052,741	$1,663,314,031	$831,656,994	$3,258,023,766
Unknown	4	0	$23,661,573	$0	$0	$23,661,573
Utilities	16	0	$0	$0	$0	$0
Vacant	354	16	$165,613,591	$12,110,391	$0	$177,723,982
2 Meter (6.2 feet) of Sea Level Rise: 100-year scenario Total	**3,898**	**3,170**	**$1,336,138,118**	**$2,497,079,905**	**$1,975,028,267**	**$5,808,246,290**

Source: Cosmos 2021, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure, and Community Lifelines

Coastal flooding and sea level rise presents a threat to both critical facilities and infrastructure, as well as community lifelines. Critical infrastructure plays an immensely important role in our communities. According to the 2021 *Critical Infrastructure at Risk – Sea Level Rise Planning Guidance for California's Coastal Zone* by the California Coastal Commission, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. The following GIS analysis identifies critical facilities and infrastructure at risk to coastal flooding and sea level rise, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Coastal flooding and sea level rise present a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities

in the CoSMos Sea Level Rise Scenarios. Using GIS, the scenarios were overlayed on the critical facility GIS layer. This is shown on Figure B-16 (for existing conditions scenarios), Figure B-17 (for 1 meter rise scenarios), and Figure B-18 (for 2 meter rise scenarios). As shown on the maps, only the 2-meter scenario affects critical facilities in the City. Table B-24 details which critical facilities fall in which scenario. Details of critical facility categories, type, name, and address by sea level rise scenario are listed in Appendix F.

Figure B-16 City of Newark – Critical Facilities in Sea Level Rise Existing Conditions Scenarios

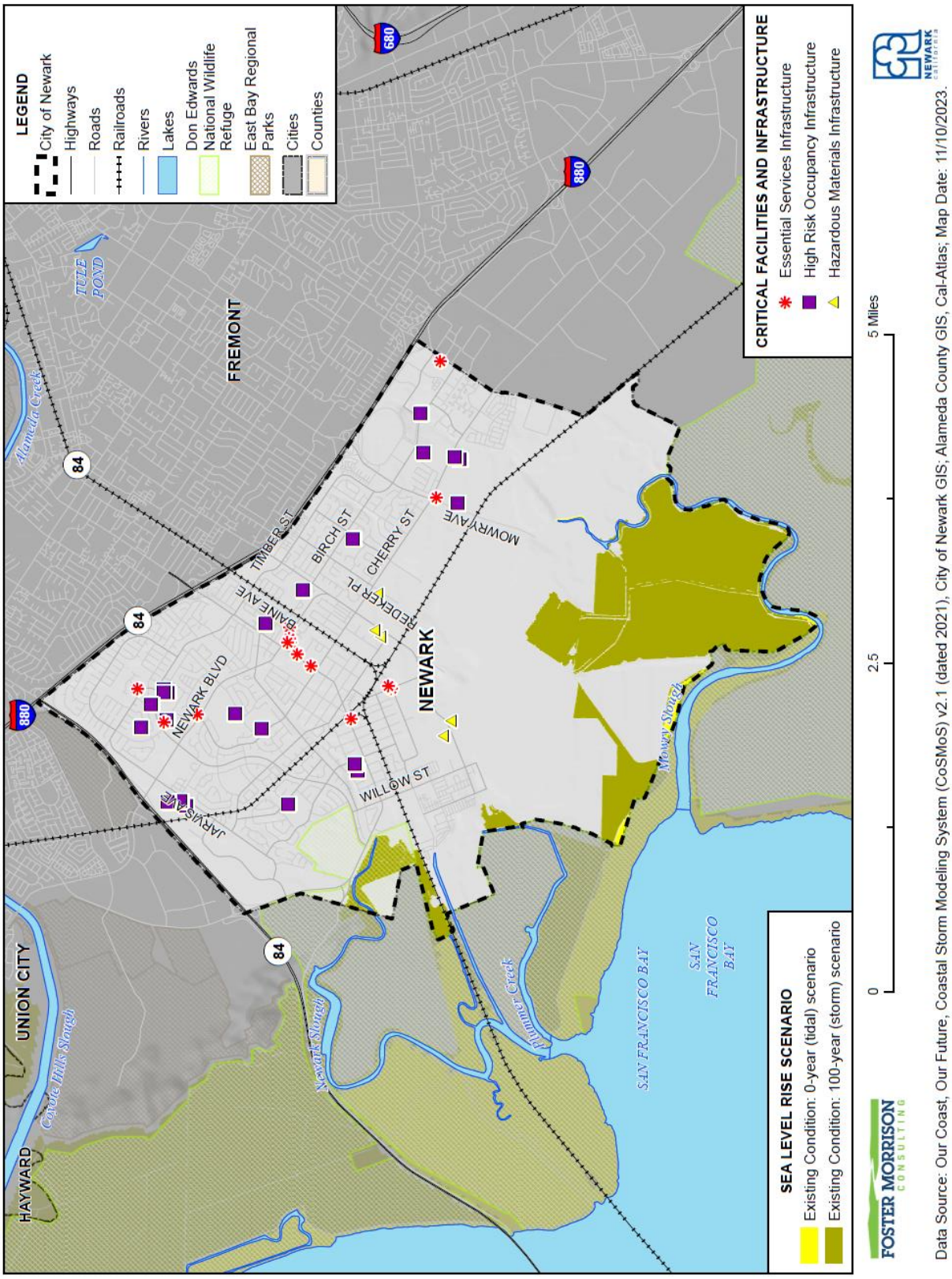


Figure B-17 City of Newark – Critical Facilities in Sea Level Rise 1 Meter Scenarios

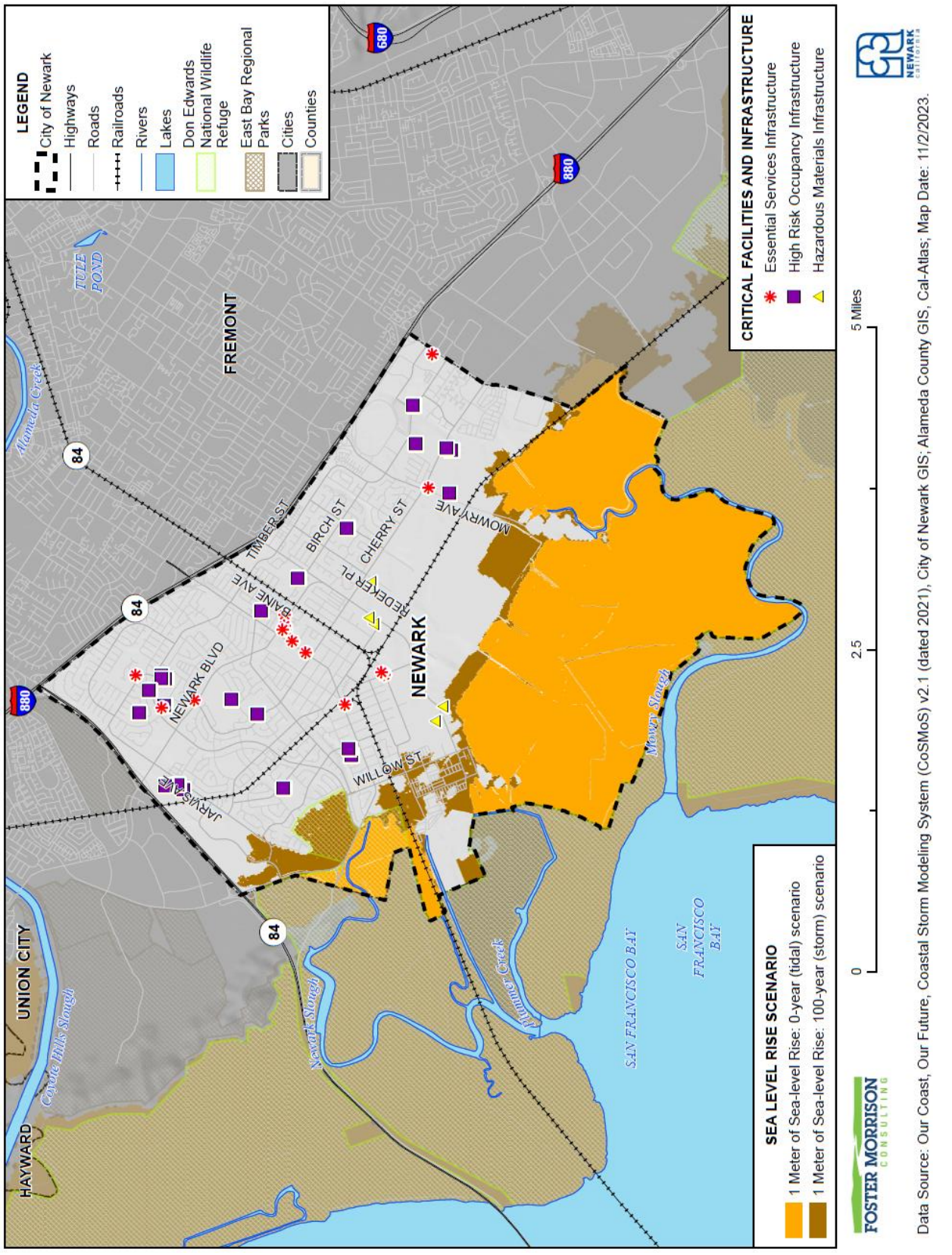


Figure B-18 City of Newark – Critical Facilities in Sea Level Rise 2 Meter Scenarios

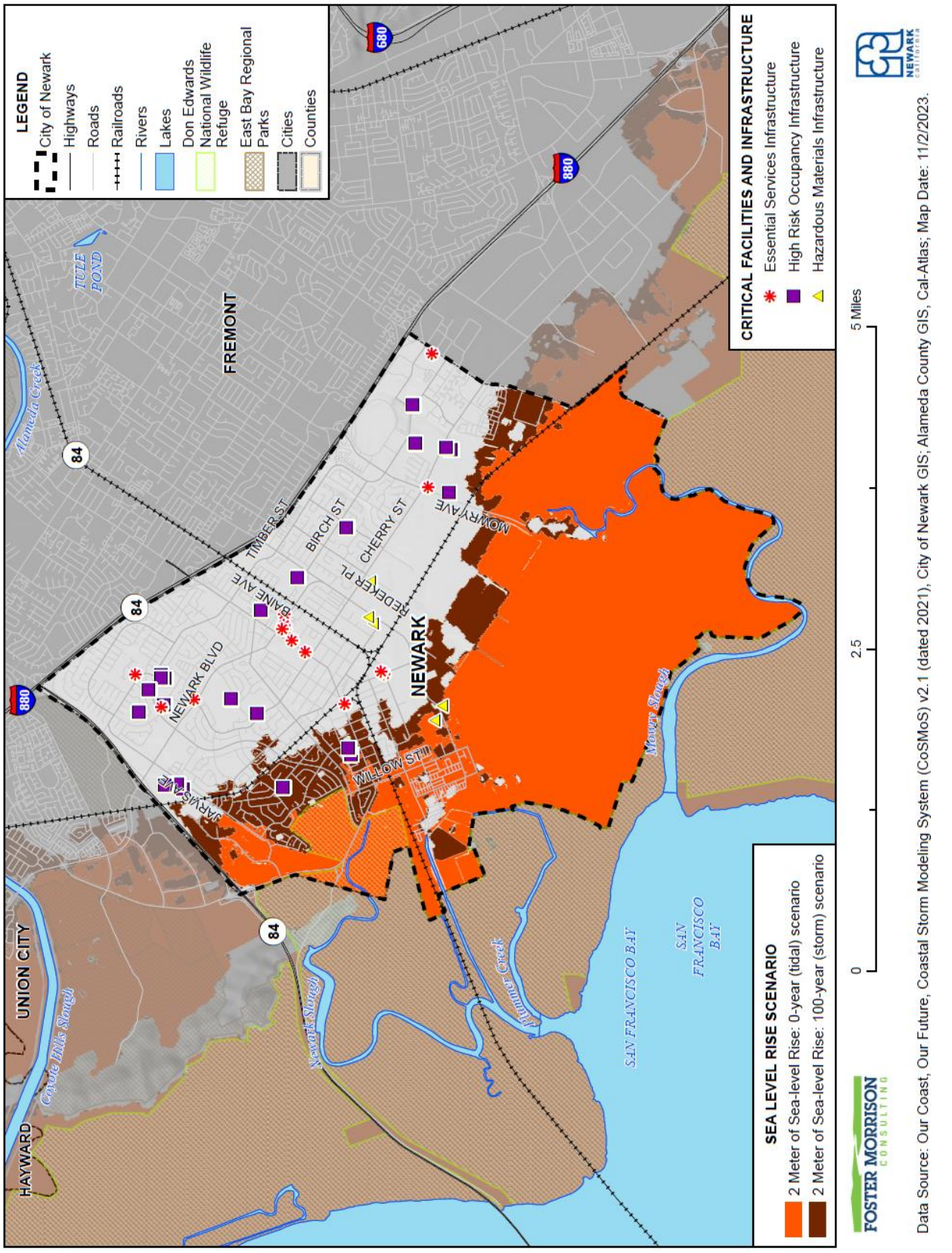


Table B-24 City of Newark – Critical Facilities by Category and Type in Sea Level Rise Scenarios

Sea Level Rise Scenario/ Critical Infrastructure Category	Critical Infrastructure Type / Critical Infrastructure Name	Facility Count
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario		
Hazardous Materials Infrastructure	**Distribution Center**	
	FedEx Ground Facility	1
	Distribution Center Total	**1**
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario Total		**1**
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario		
High Risk Occupancy Infrastructure	**Day Care**	
	Kidango Schilling Center	1
	Day Care Total	**1**
	School	
	Lincoln Elementary School	1
	Schilling Elementary School	1
	School Total	**2**
	Total	**3**
Hazardous Materials Infrastructure	**Distribution Center**	
	FedEx Ground Facility	1
	Distribution Center Total	**1**
	Paper Facility	
		1
	Paper Facility Total	**1**
	Total	**4**
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario Total		**18**

Source: CoSMoS, City of Newark GIS

Community Lifelines

Coastal flooding and sea level rise present a threat to life and property, including community lifelines in the City. Community lifelines that would be vulnerable to coastal flooding and sea level rise include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of coastal flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. This would be true in a coastal flood event.
- **Food, Hydration, Shelter** – Public health can also be at risk from flooding. Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water
- **Health and Medical** – There may be injuries and deaths from a coastal flood. Patient movement from accident scenes by EMS may also have to be rerouted.
- **Energy** – Coastal flooding and sea level rise could impact large areas of electric infrastructure, causing widespread power outages.

- **Communications** – Communication infrastructure can be inundated by a coastal flood event or sea level rise causing damage and an interruption in service. As well, an influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about road and lane closures, washouts, debris on roads, or other issues.
- **Transportation** – Highways and local roads may see extensive flooding. This can cause lane and road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents and impact evacuation routes.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these times can be comingled with flood waters, contaminate drinking water, as well as create additional exposures to the environment.
- **Water Systems** – Any water (and wastewater) system located close to the coast may be affected by coastal flooding and sea level rise. The City's stormwater drainage system (close to the coast) and facilities may also be affected. Saltwater intrusion can cause significant impacts to these systems.

Generally, coastal flooding events are temporary events with flood waters receding back to pre-storm levels at the conclusion of the storm. Given the limited areas within the City prone to coastal flooding and the short duration of these events, community lifelines are not likely to be overwhelmed. However, sea level rise can create a permanent impact (or reduction) to the built environment causing many coastal areas to be uninhabitable as the water levels rise over time. Given the slow nature of sea level rise and limited areas prone to this hazard, the City should be able to address these concerns proactively ensuring that these community lifelines are not overwhelmed and remain operational.

Natural, Historic, and Cultural Resources

According to sealevelrise.org, rising sea levels can disrupt coastal wetlands by drowning plant species, increasing salt levels in the soil and water, and outpacing wetland's migration further inland. This puts important ecosystems in danger, threatens habitats, and leaves communities exposed to dangerous storm surge. Without wetlands and other critical ecosystems, many species could lose their homes or become extinct. A major coastal flood event could have a devastating impact on the City. Large flood events can affect natural, historic, and cultural resources. Any of these that fall in the CoSMos sea level rise scenarios shown on Figure B-13, Figure B-14, and Figure B-15 would be vulnerable.

Economic Assets and Community Activities of Value

Any economic asset located within areas prone to coastal flooding and sea level rise could be affected. While impacts to these assets may be more limited or short term during a coastal flood event, sea level rise can create a permanent impact (or reduction) to the built environment causing many coastal areas to be uninhabitable as the water levels rise over time. This could cause those businesses and economic assets within these areas to close or relocate. Community activities of value located in coastal areas may also have to be canceled or rescheduled As shown on Figure B-13, Figure B-14, and Figure B-15 there are areas that would could affect economic assets in the City. Cargill Salt is in this area. However, the facility doesn't generate a significant amount of sales tax. The Silliman Center and the Sr. Center are also in these areas. Impacts to the City would be more connected to loss of employment.

Impacts from Coastal Flood and Sea Level Rise

Coastal floods, sea level rise, and their impacts vary by timing (i.e., during extreme tide events), location, and severity of any given event. Based on the hazard analysis, it is evident that coastal flooding and sea level rise can significantly impact the low-lying coastal areas of the City. Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure and services;
- Loss of wetlands from erosion and wetland migration due to sea level rise can reduce the natural filtration provided by wetland plants, increasing the likelihood of water quality issues.
- Healthy coastal ecosystems support fisheries, tourism, human health, and public safety. Many of these ecosystems are being transformed, degraded, or lost due in part to climate change, particularly sea level rise and higher numbers of extreme weather events.
- Health hazards associated with mold and mildew, contamination of drinking water, etc.;
- Damage to roads/bridges resulting in loss of mobility, including impacts to evacuation routes;
- Significant economic impact (jobs, sales, tax revenue) to the community;
- Negative impact on commercial and residential property values;
- Impact on the overall mental health of the community.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. Population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years. These anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. If a large coastal flood or long-term sea level rise impacts the City, there is potential that those facilities closer to shore may be impacted more severely than those located outside of these hazard areas. Future development that continues to occur in these areas will increase possible impacts. It should be noted that the slow movement of sea level rise makes increased impacts inside the life cycle of this LHMP Update unlikely. Further, the City has a development review process which includes the consideration of hazard constraints and updated building codes that should further limit the impacts of these hazards on City assets.

Future Development

Future development along coastal areas prone to coastal flooding and sea level rise are subject to the City's land use and development considerations, including development in hazard areas such as the City's floodplain ordinance (especially those in FEMA V and VE Zones). Over time, sea level rise may limit or prevent future development altogether in the coastal areas of the City. The City is currently undertaking a

Sea Level Rise Resiliency Study to identify additional specific local concerns, issues and vulnerabilities associated with existing infrastructure as well as new development. This study will also identify opportunities for mitigation to minimize future impacts.

Future development areas and their vulnerability to coastal flooding and sea level rise are discussed further in the below GIS analysis.

GIS Analysis

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure B-19, Figure B-20, and Figure B-21 show the locations of the future development areas overlayed on the CoSMoS Sea Level Rise Scenarios. Table B-25 shows the counts of each future development area in the City by Sea Level Rise Scenario. It should be noted that no future development areas fall in the existing conditions (tidal and storm) scenarios.

The 2023-2031 City of Newark Housing Element noted certain development constraints from flooding and sea level rise. Housing element housing opportunity sites in Newark may be affected by flooding and sea-level rise. Flooding can have devastating effects on property and residents and impact water quality in Newark. Newark falls within both 1% and 0.2% annual chance flood zones as well as being affected by sea level rise. The area with the most vulnerability to sea level rise will be in the southern portion of the City, adjacent to the San Francisco Bay. Sea level rise not only affects housing, but other infrastructure such as roads, water and sewer infrastructure.

Figure B-19 City of Newark – Future Development Areas in Sea Level Rise Existing Conditions Scenarios

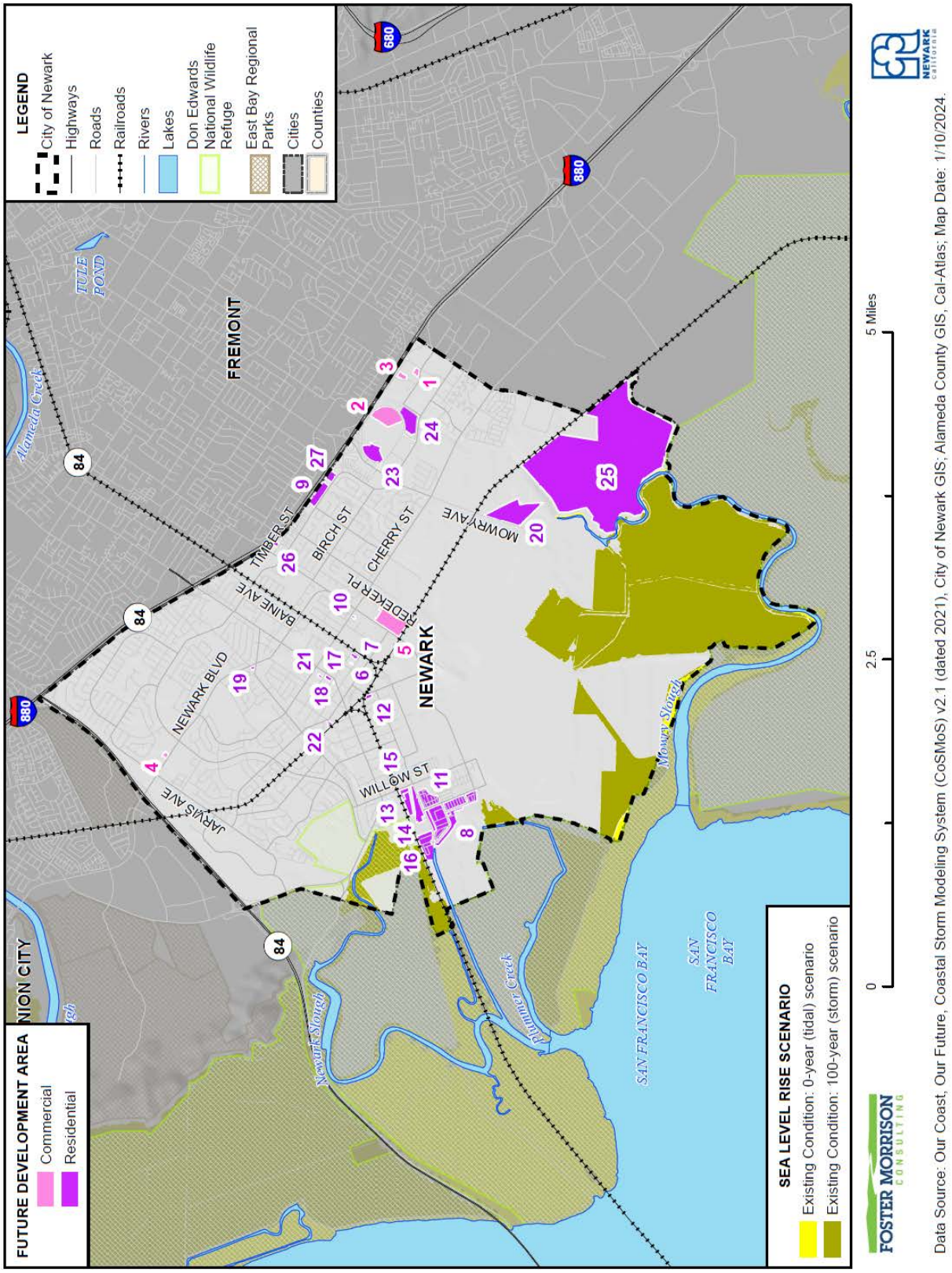


Figure B-20 City of Newark – Future Development Areas in Sea Level Rise 1-Meter Scenarios

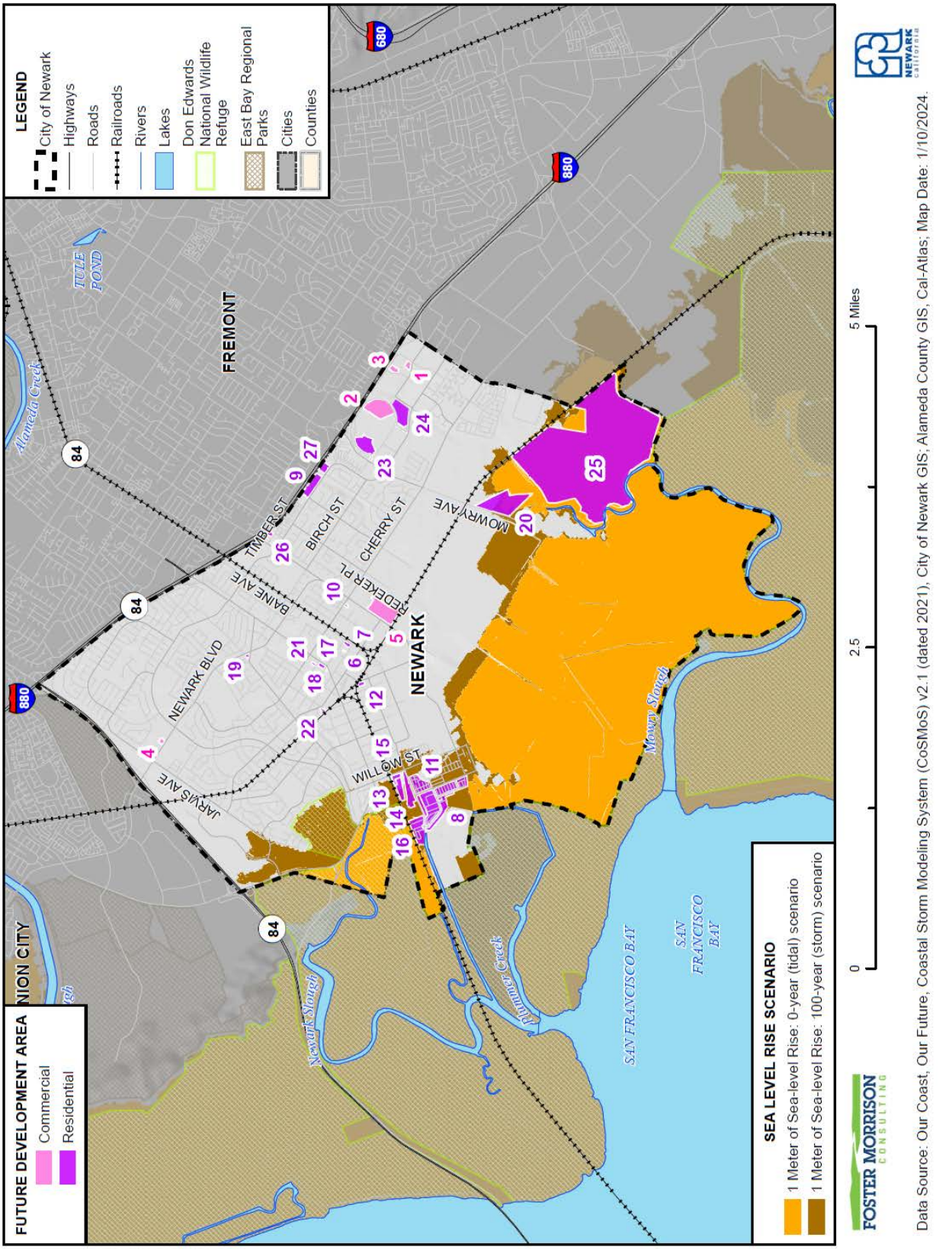


Figure B-21 City of Newark – Future Development Areas in Sea Level Rise 2-Meter Scenarios

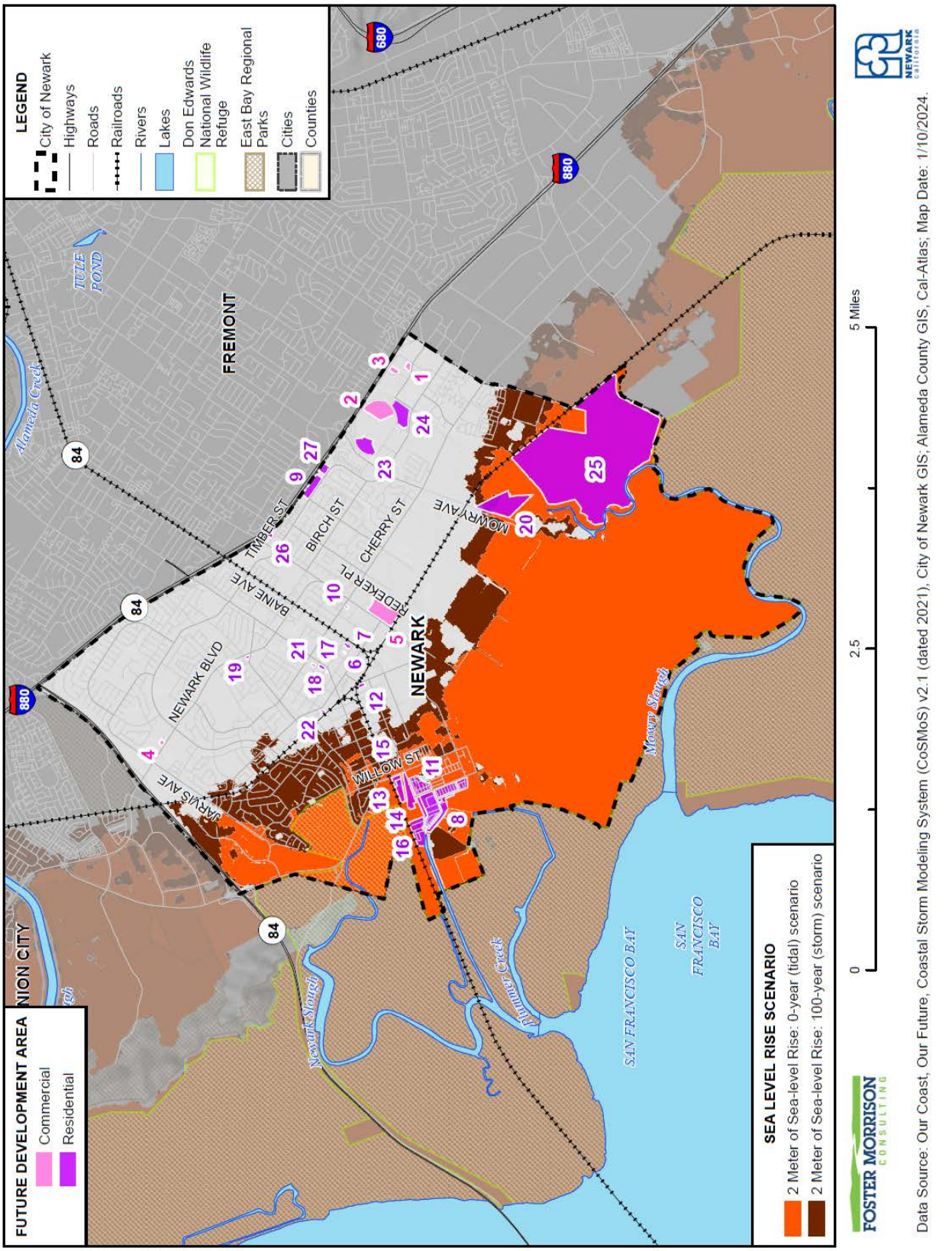


Table B-25 City of Newark – Future Development Areas in Sea Level Rise Scenarios

Sea Level Rise / Property Type / Site Number	Future Development Name	Site Count
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario		
Residential		
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**2**
1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario Total		**2**
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario		
Residential		
11	Compass Bay	1
14	FMC Willow - "South" of Hetch Hetchy	1
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**4**
1 Meter (3.1 feet) of Sea-level Rise: 100-year (storm) scenario Total		**4**
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario		
Residential		
11	Compass Bay	1
13	FMC Willow- "North" of Hetch Hetchy	1
14	FMC Willow - "South" of Hetch Hetchy	1
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**5**
2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario Total		**5**
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario		
Residential		
11	Compass Bay	1
13	FMC Willow- "North" of Hetch Hetchy	1
14	FMC Willow - "South" of Hetch Hetchy	1
15	FMC Willow - Affordable Family Units	1
16	Harbor Pointe	1
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**7**
2 Meter (6.2 feet) of Sea-level Rise: 100-year (storm) scenario Total		**7**

Source: CoSMoS 2021, City of Newark GIS

Dam Failure

Likelihood of Future Occurrence–Unlikely
Vulnerability–High

Hazard Profile and Problem Description

Dams are manmade structures built for a variety of uses including flood protection, power generation, agriculture, water supply, and recreation. When dams are constructed for flood protection, they are usually engineered to withstand a flood with a computed risk of occurrence. For example, a dam may be designed to contain a flood at a location on a stream that has a certain probability of occurring in any one year. If prolonged periods of rainfall and flooding occur that exceed the design requirements, that structure may be overtopped or fail. Overtopping is the primary cause of earthen dam failure in the United States.

Dam failure is a natural disaster from two perspectives. First, the inundation from released waters resulting from dam failure is related to naturally occurring floodwaters. Second, a total dam failure would most probably happen as a consequence of the natural disaster triggering the event, such as an earthquake.

Location and Extent

An inventory map of dams located within Alameda County was shown in Section 4.3.8 in the Base Plan. Dams with an inundation area within the City of Newark are shown on Figure B-22. This includes two extremely high dams, James H. Turner and New Calaveras, originating outside the Tri-City Planning Area. It should be noted that no mapped high hazard or significant hazard dam inundation areas affect the City. There is no scale with which to measure dam failure. However, Cal DWR Division of Safety of Dams (DSOD) assigns hazard ratings to dams within the State that provides information on the potential impact should a dam fail. The following two factors are considered when assigning hazard ratings: existing land use and land use controls (zoning) downstream of the dam. Dams are classified in four categories that identify the potential hazard to life and property: Low, Significant, High, and Extremely High. These were discussed in more detail in Section 4.3.8 of the Base Plan.

While a dam may fill slowly with runoff from winter storms, a dam break has a very quick speed of onset. The duration of dam failure is generally not long – only as long as it takes to empty the reservoir of water the dam held back. For dam overtopping, the speed of onset is somewhat slower than that of a dam break, and the duration is longer (as evidenced in the 2017 Oroville Dam event). The City would be affected for as long as the flood waters from the dam failure took to drain downstream.

Geographic flood extent from the DWR DSOD and California Office of Emergency Services (Cal OES) dam inundation areas is shown on Figure B-22 as well as in Table B-26. Based on available data, the City falls within the inundation areas of two dams as detailed in Table B-26.

Figure B-22 City of Newark – Extremely High Hazard Dam Inundation Areas from Dams Originating Outside the Tri-City Planning Area

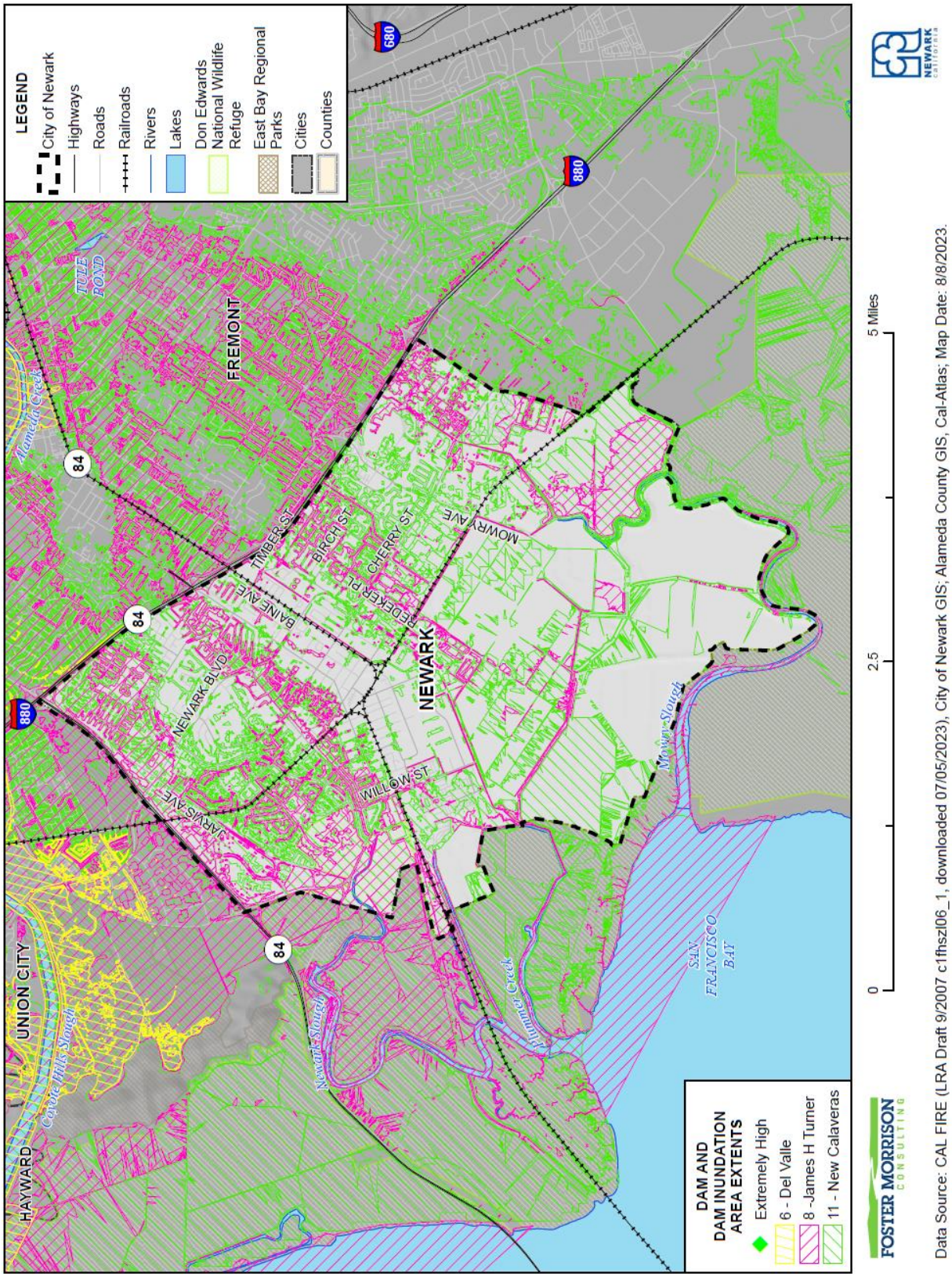


Table B-26 City of Newark – Dam Inundation Areas Geographical Extents

Extremely High Dam Inundation Areas	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
James H Turner	1,873.37	12.75%	982.87	10.31%	890.5	17.29%
New Calaveras	6,541.84	44.54%	3,593.36	37.68%	2,948.48	57.24%

Source: Cal OES, DWR DSOD

Past Occurrences

Disaster Declarations

There has been no state or federal disaster declarations for dam failure in Alameda County.

City of Newark Events

The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted that the most recent dam failure involving Newark was in 2015, where the inflatable dam on Alameda Creek (Rubber Dam 3) failed due to vandalism, releasing nearly 50 million gallons of water from the community's water. The water was supposed to go into the Niles Cone Groundwater Basin where residents and businesses from the cities of Newark, Union City and Fremont could access drinking water but instead it went directly into the San Francisco Bay. Prior to 2015, only one recorded dam failure involving Newark occurred in 1918, when the Calaveras Dam failed during construction. A landslide damaged the upstream shell of the dam and destroyed the dam's outlet tower.

The City noted no other dam failure occurrences that have affected the City.

Vulnerability to Dam Failure

The vulnerability of the City to dam failure flooding would vary depending on which dam fails and the nature and extent of the dam failure and associated flooding. An assessment of a community's vulnerability to dam failure begins with an understanding of local exposure to dam failure. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

Of dams identified affecting the Tri-City Planning Area, Newark is most concerned with the New Calaveras and James Turner dams (both extremely high hazard dams).

The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted that dam failure of the Calaveras, Del Valle, or James H. Turner Dam (San Antonio) Dams would cause flooding in Newark, with floodwaters reaching the City in as little as 90 minutes. Analysis done for this plan indicates that Del Valle would not affect the City. Flood impacts would be most severe in winter, when streams and reservoirs are full.

The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted that populations that are particularly vulnerable to the impacts of flooding as a result of dam failure are those who may be less mobile and may be unable to get out of the inundation area. These populations include the elderly, the young, as well as individuals or families who may not receive adequate warning from warning systems, televisions, radios, reverse 911 systems, or cell phones. The potential for loss of life is influenced by the capacity and number of evacuation routes available to populations living in areas of potential inundation. Evacuation routes would navigate the population out of those areas in the event of an emergency.

The Existing Conditions Memorandum also noted that although dams are built to protect communities from flooding, buildings located in the dam inundation area are still at risk of floods as not all existing buildings were built to withstand flooding. Properties closest to the dam failure inundation area would experience the largest, most destructive surge of water. Low-lying areas that collect water are also vulnerable. All critical infrastructure and facilities, including hospitals and schools in the dam inundation zone are vulnerable to inundation. Transportation routes are also vulnerable to dam failure inundation and have the potential to be damaged or destroyed, creating isolation issues. This includes all roads, railroads and bridges in the path of the dam failure inundation. Those that are most vulnerable are those that are already in poor condition and would not be able to withstand a large water surge. Utilities such as overhead power lines, cable and phone lines could also be vulnerable. Loss of these utilities could create isolation issues for the inundation areas.

Flood waters resulting from dam failure would vary as to how long it would take to reach the City. A search of available dam Emergency Action Plans (EAP) noted that it would take the following amount of time for flood waters to reach the City of Newark:

- Rubber Dam 3 – 20 minutes, inundation depths were not mapped in the EAP (the EAP maps inundation depths from both Rubber Dam 1 and Rubber Dam 3 in a simultaneous failure. The EAP notes that the dam failure is expected to be contained in the Alameda Creek Flood Control Channel.
- Quarry Pits Dam – the dam inundation areas lie outside of the City, but are near the City's borders.
- James Turner Dam – 90 minutes; inundation varies from 1 foot to 35 feet.

Assets at Risk

Assets at risk from dam failure include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources, economic assets, and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations located in dam inundation areas are vulnerable to dam failure. Certain vulnerable populations may be at increased risk to dam failure, especially during a large event with minimal advance notice. These vulnerable populations may include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

City residents that live in these dam inundation areas are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with

significant hazard events. To future evaluate the impact to Newark's residential populations located in these hazard areas, a separate analysis was performed to determine residential populations in the dam inundation areas. The DSOD and Cal OES dam inundation areas were overlayed on the parcel layer. Those residential parcel centroids that intersect the dam inundation areas were counted and multiplied by the Census Bureau average household factors for Newark – 3.32. This is shown in Table B-27 for the New Calaveras and James Turner dams (the two dams that intersect the City).

Table B-27 City of Newark – Improved Residential Parcels and Population by Dam Inundation Area

Hazard Rating and Location/Dam Inundation	Improved Residential Parcels	Population
Extremely High Hazard Dams Outside Tri-City Planning Area		
New Calaveras	12,073	40,082
James Turner	6,783	22,520

Source: Cal OES, DSOD, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau

Structures

Most structures in the City have some measure of risk to dam failure. Dam failure flooding can affect the built environment of the City. Structures in dam inundation areas are at risk and depending on flood depths, can range from slight damage to totally inundated. Analysis by extremely high hazard dam, high hazard, and significant hazard dam follows.

GIS was used to determine the possible impacts of dam inundation flooding on parcels and structures within the City of Newark. The methodology described in Section 4.3.8 of the Base Plan was followed in determining parcels and structures at risk to dam failure. Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values that fall within dam inundation areas in the City are presented below by hazard class and by dam. The results are presented in tables below for the dams that affect the City – the New Calaveras (Table B-28) and the James Turner Dam (Table B-29).

Table B-28 City of Newark – Count and Value of Parcels (and Structures) in New Calaveras Dam Inundation Area by Property Use Type

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Total Value
Agricultural	27	1	$2,725,998	$3,339,480	$3,339,480
Commercial	307	231	$537,862,717	$972,078,212	$972,078,212
Government / Institutional	282	13	$11,756,107	$13,048,226	$13,048,226
Industrial	80	68	$361,480,037	$815,952,736	$1,223,929,106
Recreational	2	2	$1,137,630	$1,124,584	$1,124,584
Residential	12,574	12,073	$2,292,659,287	$4,926,128,309	$2,463,064,134
Unknown	19	1	$24,055,983	$42,970	$0

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Total Value
Utilities	67	0	$0	$0	$0
Vacant	449	23	$210,257,702	$15,812,145	$0
Newark Total	**13,807**	**12,412**	**$3,441,935,461**	**$6,747,526,662**	**$4,676,583,742**

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Table B-29 City of Newark – Count and Value of Parcels (and Structures) in James Turner Inundation Area by Property Use Type

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Total Value
Agricultural	24	1	$2,290,460	$3,339,480	$3,339,480
Commercial	216	175	$417,333,188	$741,974,593	$741,974,593
Government / Institutional	191	8	$4,172,071	$5,893,105	$5,893,105
Industrial	62	51	$309,963,745	$745,096,091	$1,117,644,140
Recreational	2	2	$1,137,630	$1,124,584	$1,124,584
Residential	7,007	6,783	$1,160,586,249	$2,478,603,463	$1,239,301,689
Unknown	14	1	$24,041,482	$42,970	$0
Utilities	41	0	$0	$0	$0
Vacant	98	9	$94,510,449	$3,590,466	$0
Newark Total	**7,655**	**7,030**	**$2,014,035,274**	**$3,979,664,752**	**$3,109,277,591**

Source: DSOD, Cal OES, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Critical Facilities and Infrastructure, and Community Lifelines

Dam failure presents a threat to both critical facilities and infrastructure, as well as community lifelines. The following GIS analysis identifies critical facilities and infrastructure at risk to dam inundation flooding, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Dam failure presents a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities in the dam inundation areas. Using GIS, each dam inundation area was overlayed on the critical facility GIS layer. This is shown on Figure B-23. As shown on these maps, only two dam inundation areas intersect critical facilities in the City: James Turner and New Calaveras. Table B-30 details which critical facilities fall in which dam inundation area. Details of critical facility categories, type, name, and address by dam inundation area are listed in Appendix F.

Figure B-23 City of Newark – Critical Facilities in Dam Inundation Areas

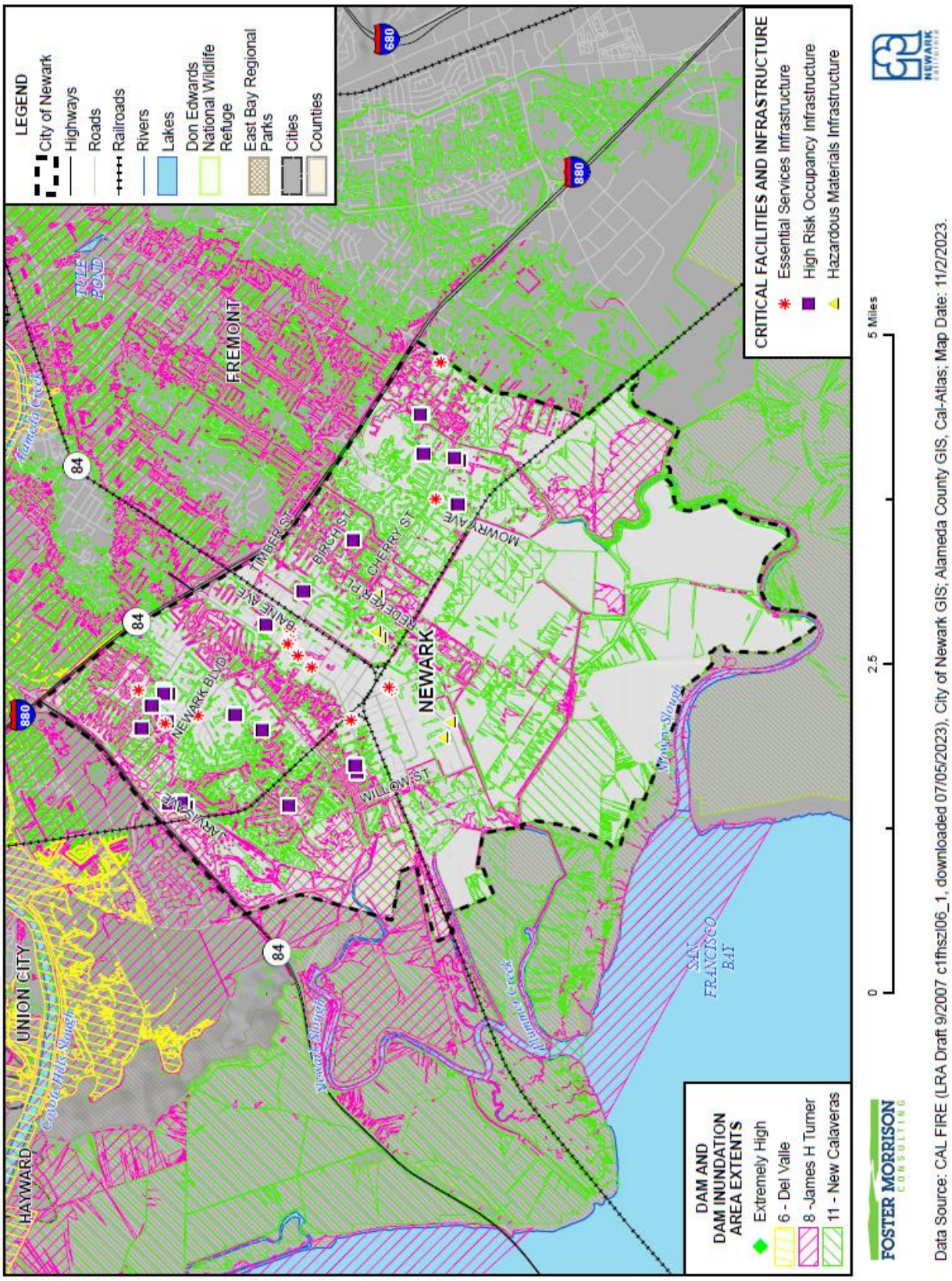


Table B-30 City of Newark – Critical Facilities by Category and Type in Dam Inundation Areas

Dam Inundation Area / Critical Infrastructure Category	Critical Infrastructure Type	Facility Count
James H Turner		
Essential Services Infrastructure	Bridge	1
	Police Station	1
	Total	**2**
High Risk Occupancy Infrastructure	School	2
	Total	**2**
Hazardous Materials Infrastructure	Gas Facility	1
	Total	**1**
James H Turner Total		**5**
New Calaveras		
Essential Services Infrastructure	Bridge	1
	City Facility	1
	Police Station	1
	Total	**3**
High Risk Occupancy Infrastructure	Day Care Center	1
	School	3
	Total	**4**
Hazardous Materials Infrastructure	Gas Facility	1
	Total	**1**
New Calaveras Total		**8**

Source: Cal OES, DWR DSOD, City of Newark GIS

Community Lifelines

Dam failure flooding presents a threat to life and property, including community lifelines in the City. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Community lifelines that would be at risk to dam failure flooding include:

- **Safety and Security** –Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. This would be especially true in a dam failure event. Search and rescue and swiftwater teams may be called on to perform riskier duties during times of heavy rains and flooding.
- **Food, Hydration, Shelter** – Public health can also be at risk from flooding. Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water.
- **Health and Medical** – There is the potential for multiple injuries and deaths from a catastrophic dam failure taxing health and medical facilities. Casualty and patient movement from the inundation areas and unrelated incidents by EMS may be significantly impacted and have to be rerouted. Public health facilities can also be at risk from flooding caused by dam failures.

- **Energy** – Dam failure could impact large areas of above ground electric infrastructure, causing widespread power outages. Dam failure could also affect fueling stations, as well as electric car charging stations.
- **Communications** – An influx of service calls to dispatch centers for reporting of flooding, power outages, and rescues or other issues can occur resulting in communication networks going down for extended periods of time. Messaging systems need to be deployed during these events to let the public know about road closures, washouts, debris on roads, or lane closures. Calls to and from family and friends during a hazard event can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts.
- **Transportation** – Highways and local roads may see extensive flooding. Bridges can be damaged or destroyed. This can cause lane closures or road closures and limit available routes altogether. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Evacuation efforts may be difficult and further put people at risk of death or injury.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these events can contribute to the dangers of floodwaters and cause contamination of potable water sources, as well as additional exposure to the environment.
- **Water Systems** – Any water (or wastewater) system located in a dam inundation area may be affected by dam failure flooding. The City's stormwater drainage system and facilities may also be affected.

A large dam failure event (such as James Turner or New Calaveras dams) could overwhelm almost all critical facilities and infrastructure in the City. As shown on the maps and tables above, there are two dams that would affect large swaths of the City. A failure of these dams could, at least temporarily, overwhelm the community lifelines in place in the City.

Natural, Historic, and Cultural Resources

A major dam failure event and associated flooding could have a devastating impact on the City. Large flood events can affect all natural, historic, and cultural resources that lie in the dam inundation areas. There are a number of ways floodwaters associated with a dam failure event can impact natural resources and the environment: Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to these structures within the inundated areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme flood events.

Economic Assets and Community Activities of Value

As shown on the maps and tables above, there are two dams that would affect large swaths of the City should they fail. Most economic assets of the City would be at least temporarily disrupted. Many of these would come back online relatively quickly after a dam failure flood event, but some would take longer to re-engage in business. Some economic assets may be damaged to the point where the business or area would no longer be economically viable to continue to operate.

Depending on the dam that failed, most community activities of value would be affected if they occurred during a dam failure event.

Impacts from Dam Failure

Impacts to the City from dam failure flooding could be extensive and widespread and include loss of life and injury, flooding and damage to property and structures, damage to critical facilities and infrastructure, loss of natural resources, and all other flood related impacts. Additionally, mass evacuations and associated economic losses can also be significant.

Other impacts associated with dam failure are landslides, bank erosion, and destruction of habitat. Dam failures can cause downstream flooding and can transport large volumes of sediment and debris and contaminants from the floodwaters. Other environmental impacts can include contamination from septic system failures and releases of contaminants from hazardous materials facilities, contamination of potable water supplies; changes in configurations of streams; loss of wildlife habitats; and degradation of wetlands. A large dam failure event could have significant and catastrophic impacts.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change may exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. Some of this land would fall in or near dam inundation areas in the City. Future development that continues to occur in dam inundation areas (like those shown on Table B-31 below) will increase possible impacts associated with this hazard.

Future Development

Future dam failures events may occur in the City. Given the high number of affected parcels and structures, future development in the City could be affected by dam failures and associated flooding. Siting of future development areas should take dam failure flooding into account.

Future development areas and their vulnerability to dam failure are discussed further in the below GIS analysis.

GIS Analysis

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure

B-24 shows the locations of the future development areas overlayed on the dam inundation areas that intersect the future development areas (only the Extremely High Hazard dams from outside the County affect Newark future development areas). Table B-31 shows each future development area in the City and which dam inundation area they fall in.

Figure B-24 City of Newark – Future Development Areas in Extremely High Hazard Dam Inundation Areas from Dams Outside the Planning Area

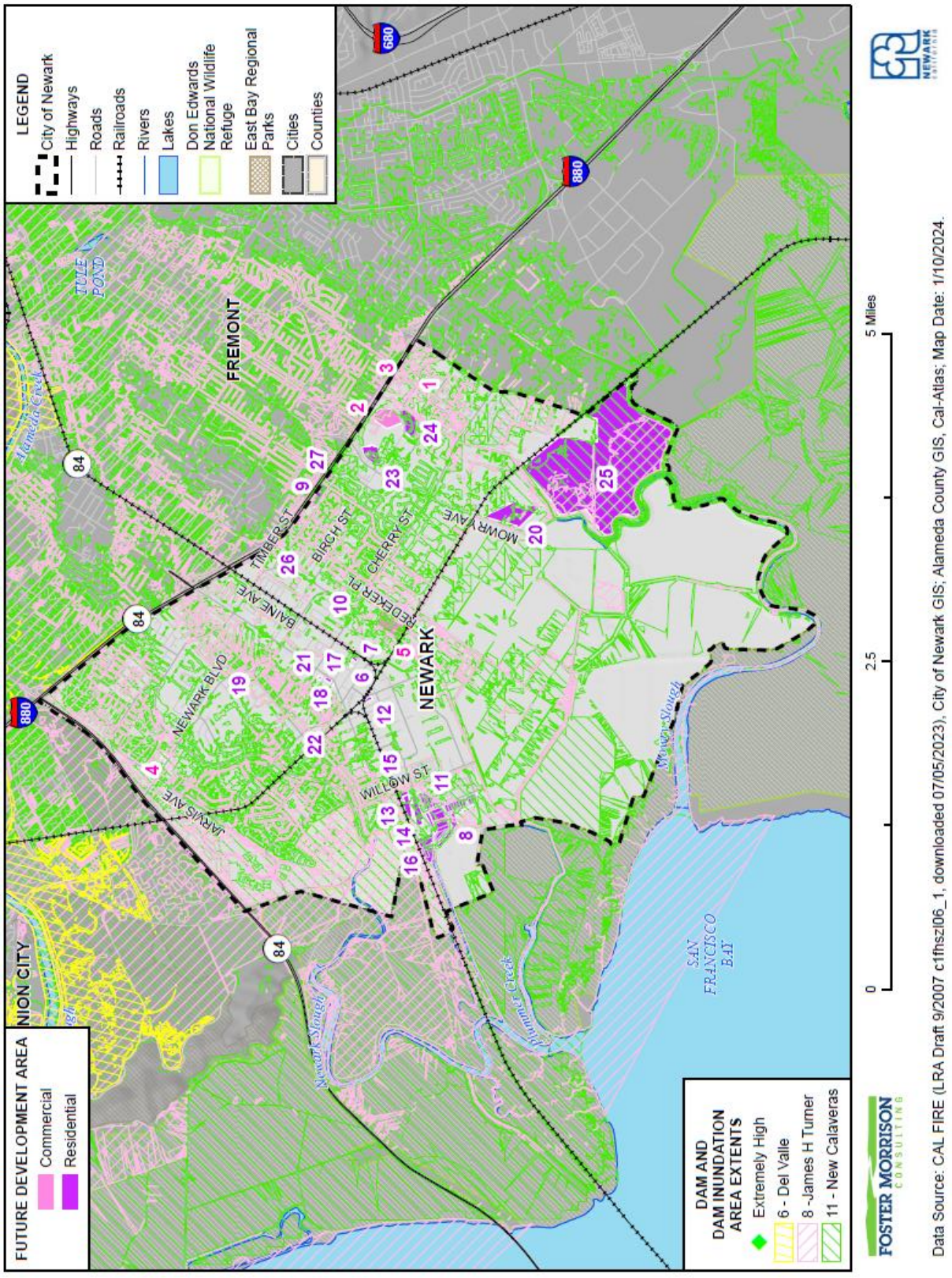


Table B-31 City of Newark – Future Development in Extremely High Hazard Dam Inundation Areas from Dams Outside the Planning Area

Dam Inundation Area / Property Use / Site Number	Future Development Name	Site Count
New Calaveras Dam		
Commercial		
1	AC Marriott Hotel	1
2	Costco	1
3	Hyatt Place	1
4	McDonald's Replacement	1
5	Prologis	1
Commercial Total		**5**
Residential		
7	Bain Avenue & Magnolia Street	1
9	Cedar Homes	1
10	Cherry Street Rowhouse Project	1
11	Compass Bay	1
13	FMC Willow- "North" of Hetch Hetchy	1
14	FMC Willow - "South" of Hetch Hetchy	1
15	FMC Willow - Affordable Family Units	1
19	Mayhews Landing / Place	1
20	Mowry Village	1
22	Muse Court	1
23	NewPark Phase A	1
24	Newpark Plaza- SB330	1
25	Sanctuary West	1
26	Timber Seniors	1
27	Waymark Homes on Cedar	1
Residential Total		**15**
New Calaveras Total		**20**
James H Turner Dam		
Commercial		
1	AC Marriott Hotel	1
2	Costco	1
3	Hyatt Place	1
4	McDonald's Replacement	1
5	Prologis	1
Commercial Total		**5**

Dam Inundation Area / Property Use / Site Number	Future Development Name	Site Count
Residential		
9	Cedar Homes	1
14	FMC Willow - "South" of Hetch Hetchy	1
15	FMC Willow - Affordable Family Units	1
19	Mayhews Landing / Place	1
20	Mowry Village	1
22	Muse Court	1
23	NewPark Phase A	1
24	Newpark Plaza- SB330	1
25	Sanctuary West	1
26	Timber Seniors	1
27	**Waymark Homes on Cedar**	**1**
Residential Total		**11**
James H Turner Total		**16**

Source: Cal OES, DWR DSOD, City of Newark GIS

Drought & Water Shortage

Likelihood of Future Occurrence–Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Drought is a complex issue involving many factors—it occurs when a normal amount of precipitation and snow is not available to satisfy an area's usual water-consuming activities. Drought can often be defined regionally based on its effects. Drought is different than many of the other natural hazards in that it is not a distinct event and usually has a slow onset. Drought can severely impact a region both physically and economically. Drought affects different sectors in different ways and with varying intensities. Adequate water is the most critical issue and is critical for agriculture, manufacturing, tourism, recreation, and commercial and domestic use. Drought has also affected tree mortality in the area in the past. As the population in the area continues to grow, so will the demand for water.

Location and Extent

Drought and water shortage are regional phenomena. The whole of the Tri-City Planning Area, as well as the whole of the City, is at risk. The US Drought Monitor categorizes drought conditions with the following scale:

- None
- D0 – Abnormally dry
- D1 – Moderate Drought
- D2 – Severe Drought

- D3 – Extreme drought
- D4 – Exceptional drought

Drought has a slow speed of onset and a variable duration. Drought can last for a short period of time, which does not usually affect water shortages and for longer periods which may challenge water supplies. Should a drought last for a long period of time, water shortage becomes a larger issue. Current drought conditions in the City are shown in Section 4.3.9 of the Base Plan.

Past Occurrences

Disaster Declarations

There have been two state and one federal disaster declaration from drought. This can be seen in Table B-32.

Table B-32 Alameda County – State and Federal Drought Disaster Declarations 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Drought	2	2008, 2014	1	1977

Source: Cal OES, FEMA

City of Newark Events

2019-2022. Newark removed 40 large dead trees affected by recent drought conditions. Landscape watering restrictions and surcharges were also implemented during the recent drought.

Vulnerability to Drought and Water Shortage

Based on historical information, the occurrence of drought in California, including the City, is cyclical, driven by weather patterns. Drought has occurred in the past and will occur in the future. Periods of actual drought with adverse impacts can vary in duration, and the period between droughts can be extended. Although an area may be under an extended dry period, determining when it becomes a drought is based on impacts to individual water users. The vulnerability of Newark to drought may vary and include reduction in water supply, turf losses, impacts to natural resources, and an increase in dry fuels and tree dieback.

Tree Mortality and Drought

One of the specific impacts of drought in the City and Tri-City Planning Area is the increased risk to trees from beetle kill and other insects, pathogens and parasites, and other tree mortality and die back issues. Drought weakens trees and makes them more susceptible to insect infestation and other pathogens. Insects, such as bark beetles and others, frequently attack trees weakened by drought, disease, injuries, or other factors that may stress the tree. These insects and other pathogens can contribute to the decline and eventual death of trees throughout the City.

The tree mortality and dieback problem are a high priority because of the issue of hazardous trees and increased wildfire hazard in the wildland areas and the potential for worsening conditions and expansion into other forested sites in future years. Fuel loading and fire potential are greater in affected eucalyptus, acacia, and conifer stands as compared to healthy stands due to the higher proportion of dead and dying material. Removal of dead and dying trees near structures, powerlines, and roadways is also a high priority because of the immediate falling hazard.

University of California, Berkeley's Department of Environmental Science, Policy, and Management (ESPM) was commissioned in 2021 to investigate the symptoms and possible causes of the dieback. Preliminary results show that the dieback is driven mostly by environmental stressors, including but not limited to drought, predisposing trees to disease caused by opportunistic pathogens. The report includes best management practices to limit the spread of pathogens. It is important to continue investigating the causes of the tree mortality and dieback to help City staff track changes over time, recognize where other areas may potentially be susceptible to tree mortality, and apply appropriate best management practices.

Under current drought conditions, competition for resources within forested areas will likely continue to intensify with greater stress increasing tree susceptibility to insect damage and disease, and ultimately increase mortality.

In all vegetation types, drought extends the length of the fire season because of its effect on live and dead fuel moisture, with critical low fuel moisture levels occurring early in spring or summer and extending at least through the first significant rains that typically come in late fall.

The whole of the City is at some measure of vulnerability to drought and water shortage. An assessment of a community's vulnerability to drought and water shortage begins with an understanding of local exposure to drought. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

In the previous 3 years Newark has seen 40 large trees removed due to trees being dead all due to recent droughts. Besides landscape watering restrictions and surcharges, the City did not directly experience additional impacts from the recent droughts. The City is undertaking an aggressive tree planting program over the course of the next several years to provide beautification and help reduce greenhouse gases. An extended drought period could adversely impact new trees during the early root establishment period.

The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted that emergency response workers and governmental workers may also be affected, as many past drought events contributed to an increase in working hours for these employment areas as emergency drought declarations were issued. It also noted that increasing drought conditions can fuel wildfires and lead to smoke and worsening air quality. This has the potential to exacerbate asthma and other respiratory illnesses for individuals with existing conditions.

Assets at Risk

Assets at risk from drought and water shortage include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

The people and populations of the City are not directly affected by drought; although, their turfed areas, trees, and other water dependent resources can all be affected. In extreme drought conditions, however, residents and other populations within the City may be vulnerability to drought and water shortage issues. Water quality can be impacted causing health problems, especially to vulnerable populations where access to clean water supplies can be more challenging. Drought and water shortage can lead to an increase in wildfires threatening City residents. Water shortages can have an effect on all of the population in the City, but often have a greater effect on the unhoused and other vulnerable populations that may be unable to access clean drinking water during shortages. During periods of drought as the costs of water usage may increase, those who are economically disadvantaged may be unable to afford the increased costs of potable water.

Structures

Structures have a limited vulnerability to drought and water shortage. It is the secondary hazard of drought (wildfire) which causes risks to structures. Drought can also stress trees, causing die off. These trees may fall on structures adjacent to them.

Critical Facilities and Infrastructure, and Community Lifelines

Most critical facilities and infrastructure have a limited vulnerability to drought and water shortage. Should drought conditions be severe enough to cause water shortage reliability issues, some facilities and infrastructure may be affected. Water and wastewater systems may be impacted during times of reduced water supply and need to employ contingencies to remain functional and fully operational. Other water dependent systems may also be adversely affected. Further, the secondary hazard of drought (increased potential for spread of urban fires and wildfire) can pose a significant risk to critical facilities and infrastructure. Drought can also stress trees, causing die off. These trees may fall on critical infrastructure adjacent to them and impact power lines and other utilities.

While limited, community lifelines can have a vulnerability to drought and water shortage. This includes:

- **Safety and Security** – Agencies may need to assist in providing alternative water supplies. Agencies may also need to staff locations where water is distributed.
- **Food, Hydration, Shelter** – Drought can limit agricultural production. Additional water supplies may need to be procured.
- **Health and Medical –** Additional water supplies may be required for these facilities to remain fully operational during drought and water shortages.
- **Energy –** Sufficient water is required to generate electricity and power. Additional fuels and power may be required to move water to and from locations that need it.

- **Communications** – Most communication systems will not be affected. In extreme instances, additional messaging may be required during drought and water shortages.
- **Water Systems** – During period of drought and water shortage, additional pressure may be put on water companies to secure additional supplies. With reductions in available water, the ability of wastewater systems to effectively treat wastewater may be impacted.

It is unlikely that any of these community lifelines would be overwhelmed by drought and water shortages.

Natural, Historic, and Cultural Resources

Drought and water shortage can have a significant impact on natural resources. Water levels in reservoirs and lakes may be reduced and a loss of wetlands and coastal marsh areas may occur. Severe drought conditions can contribute to an increase in erosion of soils and lead to poor soil quality. Further, all of the trees in the City are at risk to drought impacts and a reduction in water supply. These trees provide a wealth of social and environmental benefits to City residents and visitors, from shade and beauty to air quality, carbon reduction and stormwater management. Drought can devastate crops and dry out pastures, dry out forests and critical habitat areas, and reduce food and water available for wildlife and livestock. Additionally, drought conditions can also cause soil to compact and not absorb water well, potentially making an area more susceptible to flooding. It is unlikely that drought and water shortage would have a significant impact on historic and cultural resources in the City.

Economic Assets and Community Activities of Value

Economic assets and community activities in the City of Newark generally have a limited vulnerability to drought and water shortage. Drought is a problem which predominantly affects rural small business owners such as farmers and agricultural contractors who rely on water for their crops. However, supply issues can also affect businesses such as cafes and restaurants in more urban areas. Drought impacts to the agricultural industry can affect the supply chain and increase the cost of food and water, and adversely impact businesses tied to these industries. Reduction in or interruption of the water supply could also lead to lower productivity or closure of manufacturing facilities. Other economic sectors with a heavy reliance on water may also be affected. Depending upon how severe the conditions get and how long they last, drought can restrict recreational and community activities, all of which can stress businesses and local economies over time.

Impacts from Drought and Water Shortage

The vulnerability of the City to drought is City-wide, but impacts may vary and include reduction in water supply and an increase in dry fuels. The potential for a reduction in water supply during drought conditions generally leads to both mandated and voluntary conservations measures during extended droughts. During these times, the costs of water can also increase. Also of concern, the increased dry fuels and fuel loads associated with drought conditions can result in an increased fire danger. In areas of extremely dry fuels, the intensity and speed of fires can be significant. Water supply and flows for fire suppression can also be an issue during extended droughts.

Other qualitative impacts associated with drought in the City and Tri-City Planning Area are those related to water intensive activities such as municipal usage, commerce, tourism, and recreation use. With more

precipitation likely falling as rain instead of snow in the Sierra's, and warmer temperatures causing decreased snowfall to melt faster and earlier, water supply is likely to become more unreliable. In addition, drought and water shortage is predicted to become more common. This means less water available for use over the long run, and additional challenges for water supply reliability, especially during periods of extended drought.

The effects of drought are managed in the Bay Area through the importation of water and the storage of water in reservoirs. ACWD provides much of the water in the City. Historically, ACWD has been able to secure sufficient water to meet the demands of a growing population. The City feels its water supplies are sufficient for most periods of drought. More information can be found in ACWD's annex to this Plan Update.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. Thus, while future development within hazard areas generally contributes to some increase of impacts on City assets, given the limited potential for significant future growth in Newark and that drought and water shortage affects the whole of the City, future changes in land use and development are unlikely to contribute to any notable change in the vulnerability and impacts to City assets from this hazard. Additionally, the water companies that provide water to the City indicate they have reliable and robust water sources that limit future impacts from this hazard.

Future Development

As the population in the area continues to grow, so will the demand for water. Ongoing planning will be needed by the City and ACWD to account for population growth and increased future water demands. The City and ACWD continue to make efforts to be proactive on future drought and water supply issues. For Newark, ACWD does a five-year plan to look at this vulnerability. One concern is recent State laws require 20% reduction per capita for domestic and agriculture by 2020.

Earthquake

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Extremely High

Hazard Profile and Problem Description

An earthquake is caused by a sudden slip on a fault. Stresses in the earth's outer layer push the sides of the fault together. Stress builds up, and the rocks slip suddenly, releasing energy in waves that travel through the earth's crust and cause the shaking that is felt during an earthquake. Earthquakes can cause structural damage, injury, and loss of life, as well as damage to infrastructure networks, such as water, power, gas, communication, and transportation. Earthquakes may also cause collateral emergencies including dam and levee failures, seiches, hazmat incidents, fires, avalanches, and landslides. The degree of damage depends on many interrelated factors. Among these are: the magnitude, focal depth, distance from the causative fault, source mechanism, duration of shaking, high rock accelerations, type of surface deposits or bedrock, degree of consolidation of surface deposits, presence of high groundwater, topography, and the design, type, and quality of building construction.

The City is highly concerned about earthquakes (surface fault rupture and ground shaking, as well as fire following earthquake), earthquake liquefaction, earthquake-induced landslides, and tsunamis and seiches. Tsunami and seiche are discussed in the Tsunami hazard profile later in this Annex.

Location and Extent

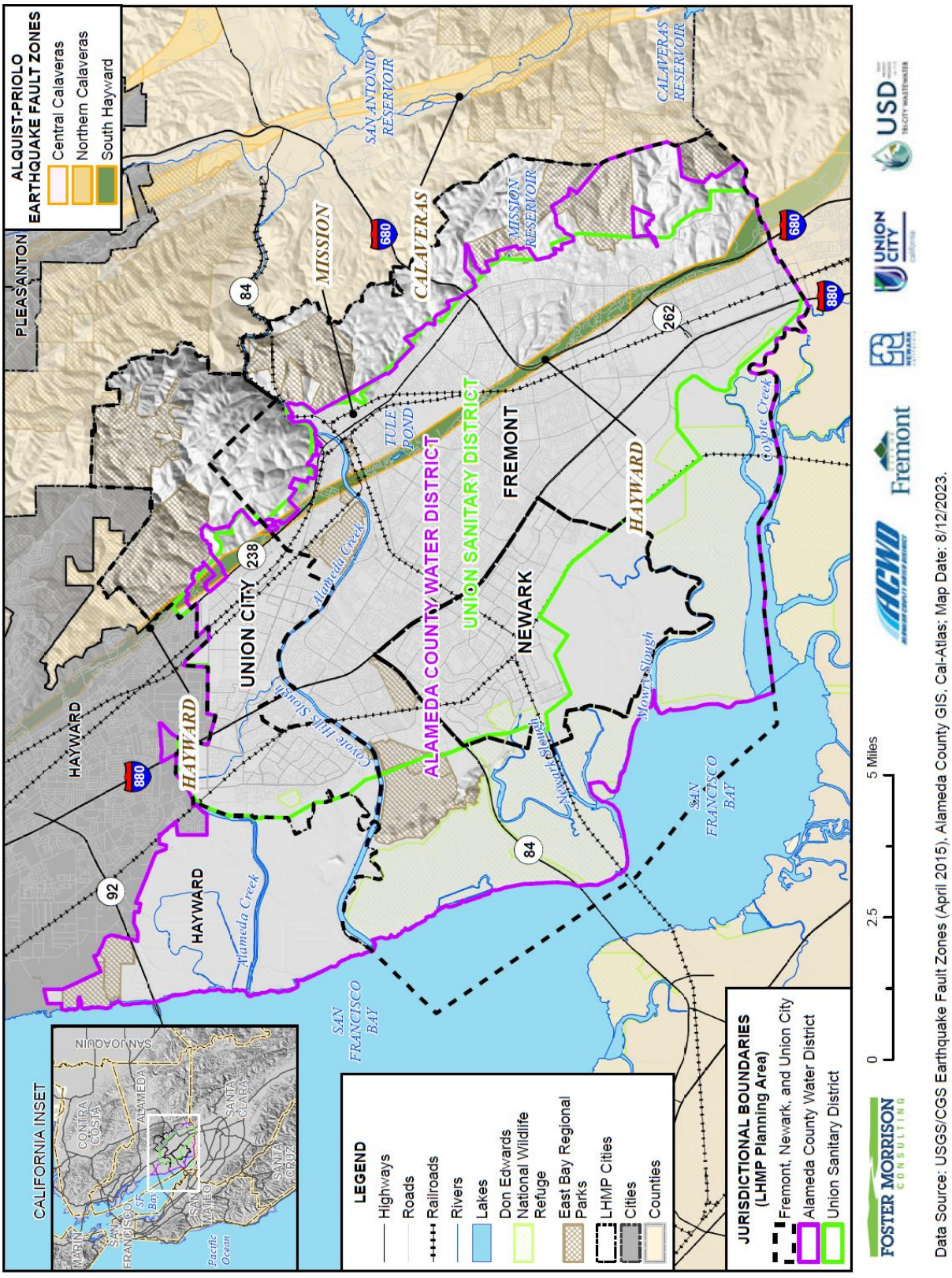
Surface Fault and Ground Shaking

Since earthquakes are regional events, the whole of the City is at risk to earthquake. Newark, the Tri-City Planning Area, and surrounding areas are at elevated risk from significant seismic and geologic hazards. Faults in and around the City were shown in Section 4.3.10 of the Base Plan. Significant faults in and near the City include the Hayward fault which runs through Newark, the Calaveras Fault within 5 miles of the eastern side of the City, and the San Andreas Fault, west of the City. The Hayward fault bisects Newark and generally runs north and south through the City and could cause major damage and displacement due to its prominent location. It branches from the Calaveras fault in the eastern part of San Jose. The Rodgers fault is located near the north end of the Hayward fault. The San Andreas Fault travels through much of the coastal area of California, traversing San Mateo County, and west of Newark on the San Francisco peninsula and continuing into Southern California. A seismic event on any of these major faults could cause serious damage in Newark. In addition to the large surface fault rupturing events, the Hayward fault is characterized by fault creep, the relatively slow, gradual fault displacement that has resulted in continuing damage to curbs, streets and gutters.

The amount of energy released during an earthquake is usually expressed as a magnitude and is measured directly from the earthquake as recorded on seismographs. An earthquake's magnitude is expressed in whole numbers and decimals (e.g., 6.8). Seismologists have developed several magnitude scales, as discussed in Section 4.3.10 of the Base Plan.

Another measure of earthquake severity is intensity. Intensity is an expression of the amount of shaking at any given location on the ground surface. Seismic shaking is typically the greatest cause of losses to structures during earthquakes. The City is located in an area where earthquakes of significant magnitude occur, so both magnitude and intensity of earthquakes are expected to remain moderate. Seismic shaking maps for the area in Section 4.3.10 of the Base Plan show the Tri-City Planning Area and the City fall within a moderate to high shake risk. Alquist Priolo fault zones are shown on Figure B-25.

Figure B-25 City of Newark – Alquist Priolo Fault Zones



Earthquake Liquefaction

When ground liquefies in an earthquake, it behaves like a liquid and may sink, spread, or erupt in sand boils. This can cause pipes to break, roads and sidewalks to buckle, and building foundations to be damaged. Liquefaction can only occur under certain circumstances. Soil that is loose, sandy, silty, or saturated with water can result in soil liquefaction if it is shaken intensely for an extended period. More details on soils and liquefaction follows:

- **Loose Soils** – The soil must be loose, such as uncompacted or unconsolidated sand and silt without much clay. This happens most often along the Bay shoreline, near creeks or waterways, on dry creek beds, and areas of man-made fill.
- **Soggy Soils** – The sand and silt must be soggy and saturated with water due to a high water table.
- **Ground Shaking** – The ground must be shaken long and hard enough by the earthquake to trigger liquefaction.

Liquefaction accompanies an earthquake, so the speed of onset is short. Duration is similar to the length of the earthquake shake. There are mapped areas of areas susceptible to earthquake liquefaction in the City from the United States Geological Survey (USGS) and California Geological Survey (CGS). These areas are shown on Figure B-26 and discussed in more detail in Table B-33. Liquefaction hazard maps express where the ground is susceptible to liquefaction, and where the ground is likely to be shaken long and intensely in an earthquake.

Figure B-26 City of Newark – Earthquake Liquefaction Susceptibility Zones

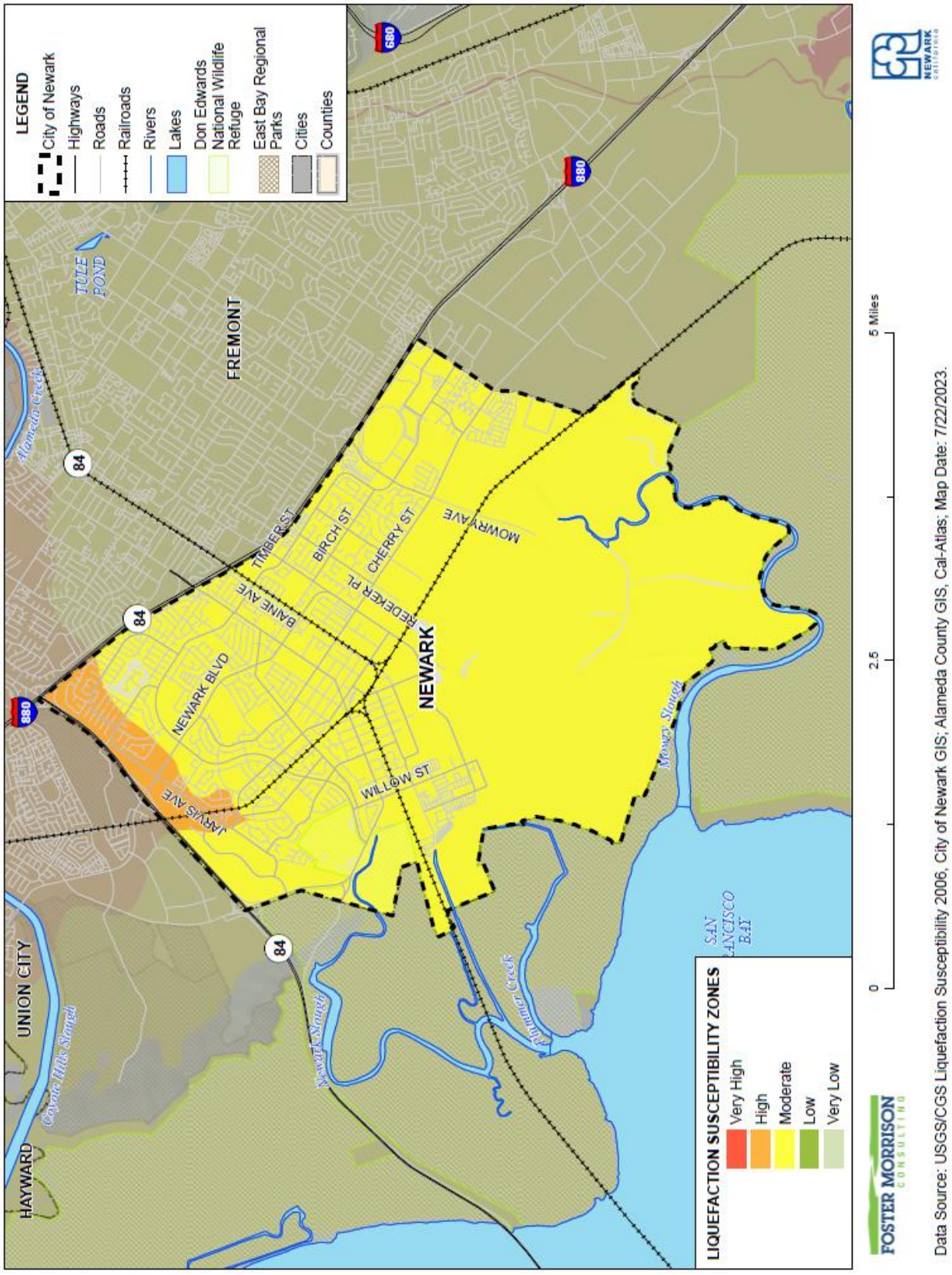


Table B-33 City of Newark – Earthquake Liquefaction Susceptibility Zones Geographical Extents

Liquefaction Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
High	765.53	5.2%	688.96	7.2%	76.56	1.5%
Moderate	13,773.77	93.8%	8,822.34	92.5%	4,951.43	96.2%
Very Low	23.31	0.2%	7.66	0.1%	15.64	0.3%
Water	120.51	0.8%	18.52	0.2%	101.99	2.0%

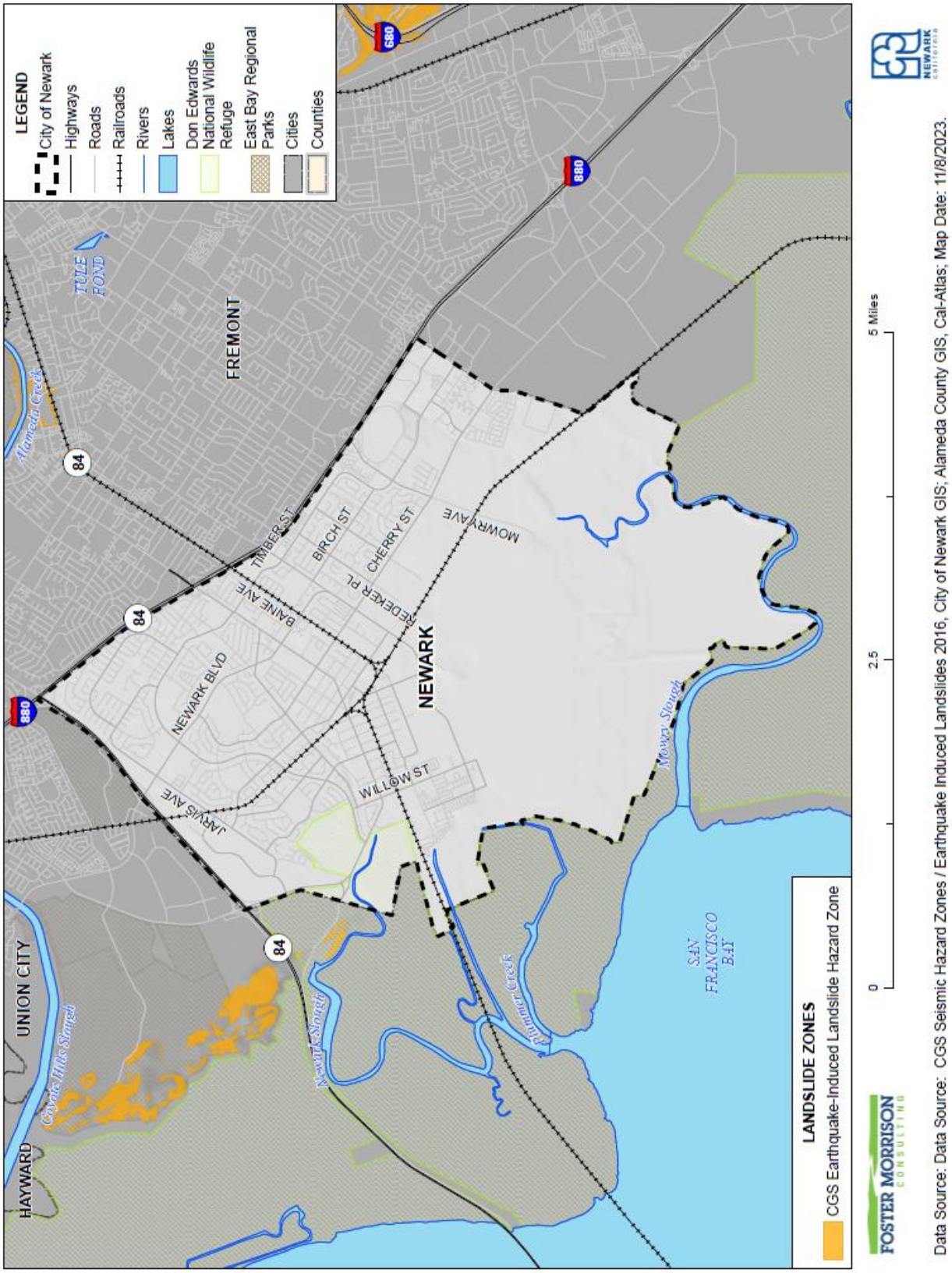
Source: USGS/CGS

Portions of Newark are identified as having moderate and high susceptibility to liquefaction. The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted that the City of Newark could experience seismic shaking levels with the potential to cause liquefaction in areas where groundwater is generally shallower than 30 feet.

Earthquake-Induced Landslide

Ground shaking can also lead to ground failure on slopes, triggering earthquake-induced landslides. Landslides tend to occur in weak soil and rock on sloping terrain. Most sloping ground has some potential for landslides simply due to the effects of gravity. An earthquake can be one factor that will cause an unstable hillside to fail. When a landslide occurs, creeks and streams below the slide area may become dammed with debris and cause flooding. There are none of these areas in the City, as indicated by Figure B-27. As such, no tabular analysis of geographical extent by acres follows. The CGS has areas (a de facto scale) where earthquake-induced landslide is more likely. Speed of onset of these events is short, as is the duration. Clean up efforts can take days, weeks, or even months depending on the severity of the landslide.

Figure B-27 City of Newark – Earthquake-Induced Landslide Hazard Zones



Fire Following Earthquake

Fire ignitions and spread in urban regions following a major earthquake can further compound the potentially catastrophic impacts of a large earthquake event. Fire following earthquake is important in cities like Newark with a large building stock composed primarily of wood and with industrial installations. Earthquake ground shaking can result in broken piping and connections and toppled equipment when restraint or flexibility is inadequate. In addition, flammable gas or ignitable liquid releases and fire protection impairments during an event create significant post-earthquake fire hazards. Wind speeds and direction can compound the damaging effects of fire following earthquake. A moderately damaging seismic event could result in a conflagration of disastrous proportions. The single most damaging fire of the twentieth century in the United States was actually a post-earthquake fire in San Francisco, 1906.

Fire following earthquake can be especially challenging, because there are often multiple ignitions at once (overwhelming fire crews), typical water supply for fighting fire might be reduced or unavailable, and maneuvering fire crews to the ignition can be difficult if streets are blocked by road damage or debris. Fire following earthquake is an issue that could impact any California community that experiences an earthquake – both urban and rural. The problem is heightened for urban environments, where many simultaneous ignitions can lead to a firestorm, and single fires can more quickly and easily move structure to structure. Fires following the 1906 San Francisco Earthquake led to more damage than was caused by ground shaking. Significant fires also occurred in San Francisco following the 1989 Loma Prieta Earthquake and in Los Angeles following the 1994 Northridge Earthquake. In the Loma Prieta Earthquake, 36 fires broke out in San Francisco alone but luckily were quickly contained in large part due to the abnormally calm wind that evening, and the fires' proximity to the Bay that allowed a fire boat to pump water to the fire where the water lines had failed. In the 1906 earthquake, over 3.5 square miles of San Francisco burned, representing 80 percent of San Francisco's property value at the time.

According to the FM Global Insurance company, fires after earthquakes commonly initiate from electrical or fuel related sources because their use is widespread. In the US, natural gas is a factor 15 to 50 percent of the time, and electrical ignitions account for 40 percent or more of post-earthquake wildfires. Ignitable liquid spills, chemical reactions, and the contact of combustibles with heat sources have also initiated or contributed to many fires after earthquakes.

Earthquake-Induced Subsidence

Regional uplift and subsidence may accompany earthquakes caused by large displacements on shallow faults. Such changes can damage coastal facilities, canals, roads, railroads, and other structures. Subsidence can also be caused by natural events such as earthquakes, soil compaction, glacial isostatic adjustment, erosion, sinkhole formation, and adding water to fine soils deposited by wind (a natural process known as loess deposits).

Land subsidence can occur in various ways during an earthquake. Large areas of land can subside drastically during an earthquake because of offset along fault lines. Land subsidence can also occur as a result of settling and compacting of unconsolidated sediment from the shaking of an earthquake. The Geospatial Information Authority of Japan reported immediate subsidence caused by the 2011 Tōhoku earthquake. In Northern Japan, subsidence of 1.64 ft was observed in Miyako, while near Rikuzentakata it

measured 2.75 ft. In the south at Sōma, 0.95 ft was observed. The maximum amount of subsidence was 3.93 ft, coupled with horizontal diastrophism of up to 7.3 ft on the Oshika Peninsula in Miyagi Prefecture.

Past Occurrences

Disaster Declarations

The City noted that there has been 1 federal disaster declaration from the 1989 Loma Prieta earthquake, as shown in Table B-34.

Table B-34 Alameda County Disaster Declarations from Earthquake 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Earthquake	0	–	1	1989

Source: Cal OES, FEMA

City of Newark Events

1989 Loma Prieta Earthquake. The City had minor damage from the Loma Prieta earthquake.

The City has not seen damage from other more recent earthquakes occurring in the region.

Vulnerability to Earthquake

The combination of plate tectonics and associated California coastal mountain range building geology generates earthquakes as a result of the periodic release of tectonic stresses. The San Andreas fault travels through much of the coastal area of California, traversing San Mateo County, west of Newark on the San Francisco peninsula. The Hayward fault bisects Newark and generally runs north and south through the City and could cause major damage and displacement due to its prominent location. It branches from the Calaveras fault in the eastern part of San Jose. The Rodgers fault is located near the Hayward fault and could cause damage in the City. A seismic event on any of these major faults could cause serious damage in Newark. In addition to large surface fault rupturing events, the Hayward fault is characterized by fault creep, the relatively slow, gradual fault displacement that has resulted in continuing damage to curbs, streets and structures in Newark.

Earthquake shaking can cause liquefaction to occur in the City. Areas with loose soil and high water tables are at risk from liquefaction. There are several areas within the City prone to liquefaction.

Earthquakes can also induce landslides in the City of Newark, especially if an earthquake occurs during the rainy season and soils are saturated with water. The areas prone to earthquake-induced landslides are largely the same as those areas prone to landslides in general. As with all landslides, areas of steep slopes with loose rock or soils and high water tables are most prone to earthquake-induced landslides.

The whole of the City is at some measure of vulnerability to earthquake. An assessment of a community's vulnerability to earthquakes begins with an understanding of local exposure to earthquakes. This is included in the Local Concerns section below. After that section, assets at risk are discussed.

Local Concerns

The 2013 City of Newark General Plan noted that Newark's geological conditions have been mapped by the US Geological Survey. Most of the developed portion of the City is built on alluvial fan deposits, consisting of sandy clay. Areas closer to the bay consist of flood plain deposits with sandy or silty clay. The marshland areas are underlain by estuarine deposits such as Bay Mud, with a thickness that may exceed 60 feet. There are no bedrock outcrops (exposed rock) within Newark; the closest outcrops are in the Coyote Hills about a mile to the northwest. While no active earthquake faults pass through Newark, the Bay Area as a whole is seismically active and the threat of earthquakes is pervasive.

The City also noted that fire following earthquake can occur. More information on fire following earthquake can be found in Section 4.3.10 of the Base Plan.

Assets at Risk

Many assets in the City are at risk to surface fault and ground shaking (including liquefaction, landslide, subsidence, and fire following earthquake). Assets at risk from earthquake include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations are at risk from earthquake shaking (including fire following earthquake) and surface fault. Those at heightened risk include:

- The unsheltered
- Infants and children under age five and their caregivers
- Elderly (65 and older)
- Individuals with disabilities
- Individuals dependent on medical equipment
- Individuals with impaired mobility

The greatest risk to people and populations from earthquake is death and injury. More information on people and populations at risk to earthquake shaking events can be seen in the Hazus scenarios developed for this LHMP and described below specific to the City of Newark. More information on the Hazus scenarios and how the Tri-City Planning Area is affected is included in Section 4.3.10 of the Base Plan. Information on populations at risk to liquefaction and earthquake-induced landslides is detailed below.

Earthquake Liquefaction Susceptibility Zone Population Analysis

To further evaluate the impact to the residential population within the City, those residential parcel centroids that intersect the USGS/CGS Earthquake Liquefaction Susceptibility zones were counted and multiplied by the 2020 Census Bureau average household factors for the City of Newark (3.32). According to this analysis, there is a total population of 46,072 residents in Newark in moderate earthquake liquefaction susceptibility zone. This is shown in Table B-35.

Table B-35 City of Newark – Count of Residential Parcels and Populations in Earthquake Liquefaction Susceptibility Zones

Earthquake Liquefaction Susceptibility Zone	Improved Residential Parcels	Population
Very High	0	0
High	0	0
Moderate	13,877	46,072

Source: USGS/CGS, US Census Bureau, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Earthquake-Induced Landslide Population Analysis

To further evaluate the impact to the residential population within the City, those residential parcel centroids that intersect the CGS Earthquake-Induced Landslide Zones were counted and multiplied by the 2020 Census Bureau average household factors for the City of Newark (3.32). According to this analysis, there is a total population of 0 residents in Newark in these zones.

Structures

All structures in the City are vulnerable to earthquakes, depending on the severity and location of the shake. Unreinforced masonry (URM) is at a much greater risk to earthquakes. The City noted that it does not have any buildings listed as at risk in its system. However, it was noted that any building that is a soft story or unreinforced masonry building would be deemed on the list. One building the City is concerned about is a building on Rich Ave. – the old CH building. It is being reviewed to be used for a shelter.

Earthquake Liquefaction Susceptibly and Structures Analysis

Structures in the City have a measure of risk from liquefaction. The USGS/CGS Earthquake Liquefaction Susceptibility Zone layers were overlaid with the City parcel layer in GIS to obtain results. Table B-36 summarizes the potential estimated damages to the City from properties in the Earthquake-Induced Landslide Areas.

Table B-36 City of Newark – Count and Value of Parcels (and Structures) in Earthquake Liquefaction Susceptibility Zones by Property Use

Liquefaction Susceptibility Zones / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
High						
Agricultural	0	0	$0	$0	$0	$0
Commercial	75	67	$75,924,248	$150,094,607	$150,094,607	$376,113,462
Government/ Institutional	27	1	$267,720	$624,680	$624,680	$1,517,080
Industrial	4	2	$9,307,546	$10,993,499	$16,490,249	$36,791,294
Recreational	0	0	$0	$0	$0	$0

Liquefaction Susceptibility Zones / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Residential	999	994	$173,817,440	$364,925,831	$182,462,892	$721,206,163
Unknown	0	0	$0	$0	$0	$0
Utilities	9	0	$0	$0	$0	$0
Vacant	2	0	$1,134,719	$0	$0	$1,134,719
High Total	**1,116**	**1,064**	**$260,451,673**	**$526,638,617**	**$349,672,428**	**$1,136,762,718**
Moderate						
Agricultural	28	1	$2,768,344	$3,339,480	$3,339,480	$9,447,304
Commercial	342	249	$495,505,399	$887,557,558	$887,557,558	$2,270,620,515
Government/ Institutional	314	16	$13,043,076	$14,823,157	$14,823,157	$42,689,390
Industrial	105	94	$384,544,348	$843,373,821	$1,265,060,733	$2,492,978,902
Recreational	3	3	$1,480,029	$1,214,920	$1,214,920	$3,909,869
Residential	14,482	13,877	$2,729,339,837	$5,889,974,875	$2,944,987,431	$11,564,302,143
Unknown	21	1	$24,055,983	$42,970	$0	$24,098,953
Utilities	78	0	$0	$0	$0	$0
Vacant	543	23	$234,672,663	$15,812,145	$0	$250,484,808
Moderate Total	**15,916**	**14,264**	**$3,885,409,679**	**$7,656,138,926**	**$5,116,983,279**	**$16,658,531,884**
Very Low						
Agricultural	0	0	$0	$0	$0	$0
Commercial	1	0	$0	$0	$0	$0
Government/ Institutional	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	100	42	$29,062,971	$21,703,200	$10,851,600	$61,617,771
Unknown	0	0	$0	$0	$0	$0
Utilities	0	0	$0	$0	$0	$0
Vacant	0	0	$736,387	$0	$0	$736,387
Very Low Total	**108**	**42**	**$29,799,358**	**$21,703,200**	**$10,851,600**	**$62,354,158**
Water						
Agricultural	0	0	$0	$0	$0	$0
Commercial	1	1	$10,019,419	$10,661,200	$10,661,200	$31,341,819
Government/ Institutional	2	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0

Liquefaction Susceptibility Zones / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Recreational	0	0	$0	$0	$0	$0
Residential	15	15	$4,224,084	$9,121,187	$4,560,592	$17,905,863
Unknown	0	0	$0	$0	$0	$0
Utilities	0	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
Water Total	**18**	**16**	**$14,243,503**	**$19,782,387**	**$15,221,792**	**$49,247,682**
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: USGS/CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Earthquake-Induced Landslide and Structures Analysis

Structures in the City have a measure of risk from earthquake-induced landslides. The CGS Earthquake-Induced Landslide zone layer was overlaid with the City parcel layer in GIS to obtain results. No properties are expected to be affected by earthquake-induced landslide in the City. As such, no tabular analysis was performed.

Critical Facilities and Infrastructure, and Community Lifelines

Earthquakes present a tremendous threat to both critical facilities and infrastructure, as well as community lifelines. The following GIS analysis identifies critical facilities and infrastructure at risk to earthquakes, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Earthquake and its related hazards present risks to the City. Earthquakes present most likely the greatest risk to critical facilities. The critical facilities at risk to earthquake are presented in the Hazus analysis. A discussion of liquefaction and landslide are presented below.

Earthquake Liquefaction

Earthquake liquefaction presents a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities in the earthquake liquefaction susceptibility zones. Using GIS, the earthquake liquefaction susceptibility zones were overlayed on the critical facility GIS layer. This is shown on Figure B-28. Table B-37 details which critical facilities fall in liquefaction zones. Details of critical facility categories, type, name, and address by liquefaction susceptibility zone are listed in Appendix F.

Figure B-28 City of Newark – Critical Facilities in Liquefaction Susceptibility Zones

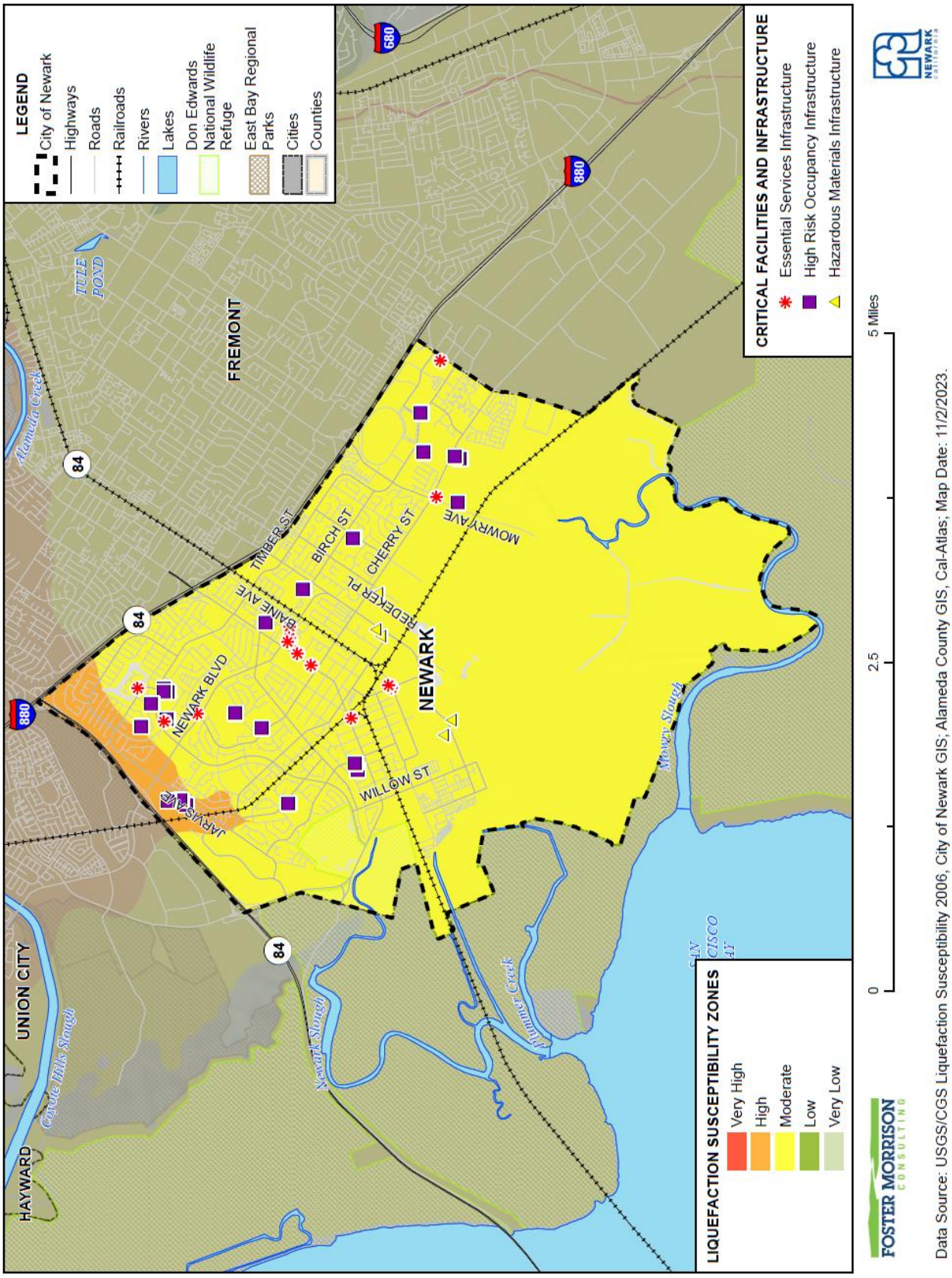


Table B-37 City of Newark – Critical Facilities by Category and Type in Earthquake Liquefaction Zones

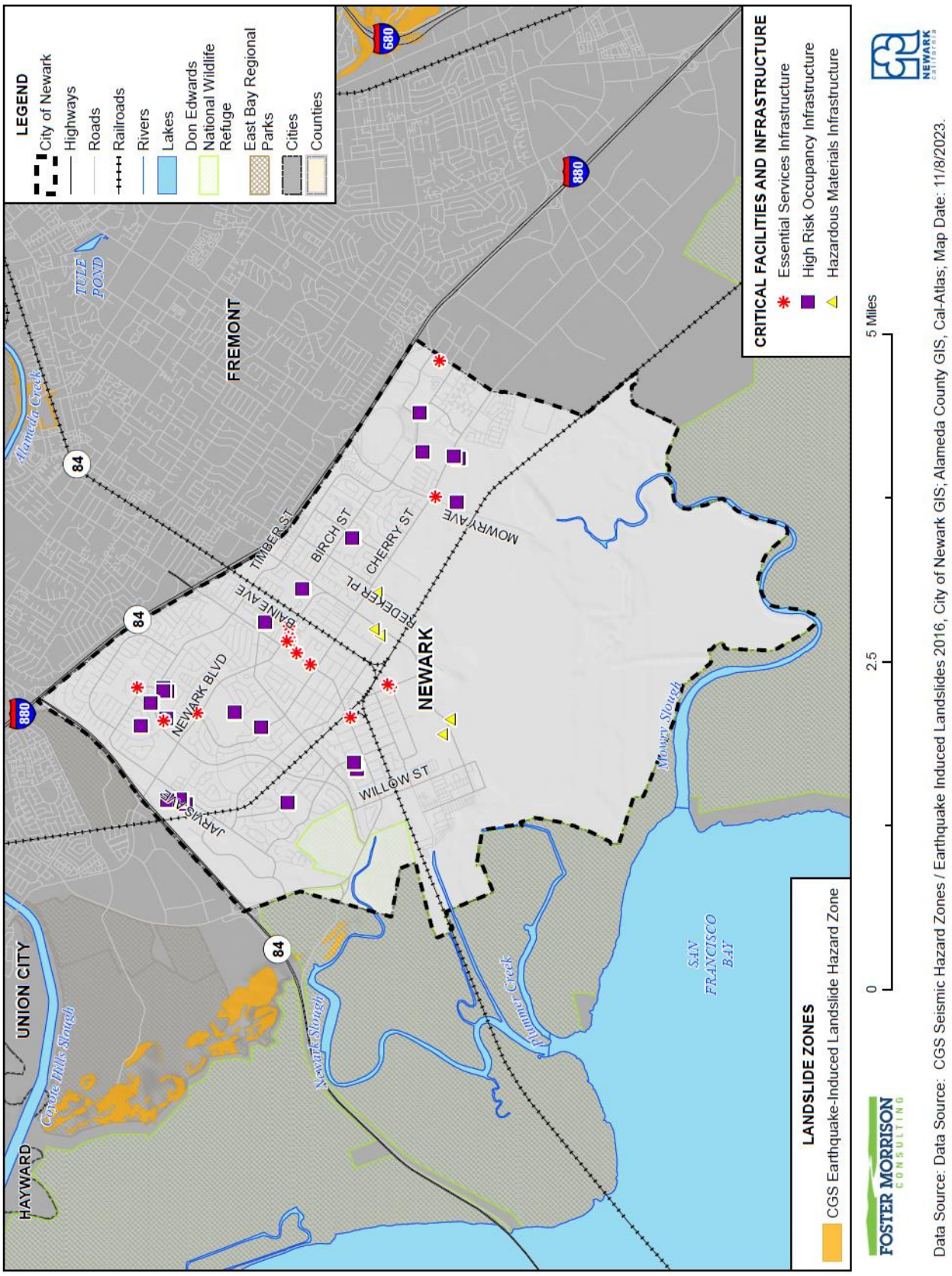
Liquefaction Susceptibility Zones / Critical Infrastructure Category	Critical Infrastructure Type	Facility Count
High		
High Risk Occupancy Infrastructure	Day Care Center	2
	School	1
	Total	**3**
High Total		**3**
Moderate		
Essential Services Infrastructure	Bridge	1
	City Facility	7
	Fire Station	3
	Hospital	3
	Police Station	1
	Total	**15**
High Risk Occupancy Infrastructure	Day Care Center	5
	School	15
	Total	**20**
Hazardous Materials Infrastructure	Chemical Facility	3
	Distribution Center	1
	Gas Facility	1
	Paper Facility	1
	Total	**6**
Moderate Total		**41**
Very Low		
Union City Total		**44**

Source: USGS/CGS, City of Newark

Earthquake-Induced Landslide

Earthquake-induced landslide presents a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities in the earthquake-induced landslide zones. Using GIS, the earthquake liquefaction zones were overlayed on the critical facility GIS layer. This is shown on Figure B-29. No critical facilities fall in these zones, so no tabular analysis was performed.

Figure B-29 City of Newark – Critical Facilities in Earthquake-Induced Landslide Zones



Community Lifelines

Community lifelines at risk to earthquake include:

- **Safety and Security** – Many City personnel would be involved in response and recovery efforts. This includes police, fire, EMS, public works, and other personnel. Due to the potential for widespread and major damages citywide, these resources can be stretched and quickly overwhelmed.
- **Food, Hydration, and Shelter** – As homes are damaged, shelter needs would significantly increase. Temporary housing would be to be established. Water supplies could be offline for an extended period. Residents, visitors and others caught in a large event would need to find sources of food and water until the City recovers.
- **Health and Medical** – Substantial numbers of injuries and deaths can occur. This causes EMS calls and ER visits to spike. Portable morgues and refrigeration units may need to be brought in. Transporting patients to medical facilities may be difficult. Depending on the extent of injuries and deaths the capacity of medical facilities could be strained and eventually overwhelmed.
- **Energy** – The power grid may be damaged from earthquake. Damages to natural gas pipelines that feed homes and businesses in the City may also be disrupted. Restoring these systems may take longer during a widespread event.
- **Communications** – Communications systems may be damaged during shaking events. Once the shaking ceases, responder communications need to be back online quickly to coordinate response efforts in the City. Messaging boards and alerts need to be then put into place to ensure public safety and order. Calls to and from family and friends during a hazard event can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts.
- **Transportation** – Major damage can occur to roads and bridges in the City. Damage can also occur to rail lines and airports in and near the City. Roads may be closed due to damage, or to debris on the roads from earthquake events. These closures could be placed for an extended period while debris clearing efforts are undertaken to allow repairs to be made.
- **Hazardous Material** – Hazardous materials facilities can be compromised during times of earthquake events causing releases of contaminants into the environment. Natural gas pipelines can be affected by earthquakes. This can affect not only residents, but those who are charged with responding to or resolving the spill/rupture.
- **Water Systems** – Damages to underground pipes may occur. These take time to locate and fix in normal circumstances. During periods of earthquake, this becomes even more difficult. Water and wastewater systems and their respective piping can be damaged.

All community lifelines in the City are vulnerable to earthquakes, depending on the severity and location of the shake and the effects of associated subhazards. A major earthquake event could cause these lifelines to be overwhelmed. Some of these would be able to be restored to service quickly, while others would take more time having a prolonged impact on the people and structures within the City. More information on lifelines at risk can be seen in the Hazus scenarios below.

Natural, Historic, and Cultural Resources

The 2023 State Hazard Mitigation Plan noted that environmental problems from earthquakes can be numerous. Earthquake-induced landslides can significantly damage surrounding habitats. It is also possible

for earthquakes to reroute streams, which can change the water quality, possibly damaging habitat and feeding areas. Streams fed by groundwater and/or springs may dry up because of changes in underlying geology. Another threat to the environment from earthquakes is the potential release of hazardous materials. Historical and cultural resources are at risk, often due to their age and construction types. The Hazus scenarios in Section 4.3.10 of the Base Plan and included below are relatively silent on the vulnerability to natural, historic, and cultural resources, but impacts to these resources could be long lasting.

Any natural, historic, or cultural resource that is in the earthquake liquefaction zone would be at potential risk. For the natural resources, this is likely to be limited. Historic and cultural resources that are structures or housed in structures could be vulnerable to liquefaction. It is more likely that earthquake would have a much greater effect than the follow-on liquefaction.

Any natural, historic, or cultural resource that is in the earthquake-induced landslide areas would be at potential risk. Given the limited area of earthquake-induced landslide in the City, as shown on Figure B-27, historic and cultural assets in the City are not at sizable vulnerability. While there are natural resources in this area, there are limited historic and cultural resources located there (though there may be as yet unknown native cultural artifacts in this area).

Economic Assets and Community Activities of Value

All economic assets in the City are vulnerable to earthquakes, depending on the severity and location of the shake and associated cascading hazards and impacts. This includes earthquake liquefaction, subsidence, and fire following earthquake. More information on economic assets at risk can be seen in the Hazus scenarios in Section 4.3.10 of the Base Plan. All community activities of value would be affected by an earthquake if they were underway during an earthquake event and may be postponed or cancelled until the City has sufficiently recovered.

As shown on Figure B-26, most of the City is at moderate or higher liquefaction risk. Almost all economic assets in the City would be vulnerable. As such, most of the community activities of value would be at risk from liquefaction if it occurred during the event.

Given the lack of earthquake-induced landslide in the City, as shown on Figure B-27, economic assets in the City are not at any known vulnerability.

Hazus Analysis

Hazus is a regional earthquake loss estimation model that was developed by FEMA and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates can be used by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

Hazus 6.1 was utilized to model earthquake losses for the Tri-City Planning Area. Hazus level 2/3 analyses were run, meaning that this more advanced Hazus modelling utilized local inventory data of buildings, essential facilities, hazards, and other data, as provided by the local jurisdictions and Cal OES and FEMA.

This local data was used in conjunction with the default Hazus data within the model. This is a planning level analysis. Four primary Hazus scenarios were created for this Plan:

- A Calaveras Fault 7.43 magnitude event
- A Hayward + Rodgers Creek Fault 7.57 magnitude event
- A Hayward (Haywired) Fault 7.0 magnitude event
- A San Andreas Fault 7.9 magnitude event

Details of these Hazus Scenarios are detailed in Table B-38.

Table B-38 Hazus Scenarios by Fault, Magnitude, and Epicenter

Earthquake Fault	Magnitude	Epicenter	Fault Name	Hazus Scenario Name (user named)
Calaveras	7.43	37.61, -121.89	sc+cc+nc--cs+cc+cn-3-10	DETERM CN_CC_CS_CE 7.43M EQ CT
Hayward + Rodgers Creek	7.57	37.55, -121.95	sh+nh+rc-- hs+hn+rc	DETERM SH_NH_RC 7.57M EQ CT
Hayward (Haywired)	7.00	37.88, -122.25	sh+nh-- hs+hn	DETERM HN_HS 7.0M EQ CT
San Andreas	7.90	37.76, -122.55	scz+pn+ncs+ncn --sas+sap+sa	DETERM SAO_SAN_SAP_SAS 7.9M EQ CT

Source: USGS Hazus Specialist; Tri-City Participating Jurisdictions; Hazus Scenario Catalogs:
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014calaverascncccscesha_m7p43_se
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014haywardrchnhsshaw09m_m7p57_se
https://earthquake.usgs.gov/scenarios/eventpage/ushaywiredm7.05_se
https://earthquake.usgs.gov/scenarios/eventpage/bssc2014nsanandreassansapsas_m7p88_se

Methodology

Hazus Version 6.1 was released in November 2023. This natural hazard risk assessment GIS-based software updates Hazus Version 6.0 previously released in November 2022. Hazus 6.1 includes major inventory data, methodology, and software enhancements. Utilizing Hazus 6.1, Hazus deterministic scenarios were run utilizing supplemental and locally provided inventory data developed for input into Hazus' Comprehensive Data Management System (CDMS). The deterministic approach allows for the selection of a recognized fault, epicenter, and magnitude associated with each identified scenario. The additional steps taken to prepare the Hazus model are detailed below.

Running the Hazus Analyses

Running the four primary Hazus scenarios on each of the four study regions, as previously described, provides coverage and results for the Tri-City Planning Area and specific to each of the five participating jurisdictions to this LHMP Update.

Each of the four primary earthquake scenarios generated an Earthquake Hazus Global Summary Risk Report for each Hazus defined study region. The report provides an estimate of seismic risk and assesses current and future potential seismic-related losses. For each study region, the report provides information

on loss estimates based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The loss estimates provide Annualized Earthquake Loss (AEL) that detail long-term losses measured in U.S. dollars per one year. It also provides estimates of debris, displaced households, shelter requirements and casualties. The total economic loss includes:

- **Building-Related Losses.** The building losses are broken into two categories: direct building losses and business interruption losses.
- **Transportation and Utility Lifeline Losses**. For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages.

To support the results presented in the Hazus Global Summary Risk Reports for each primary scenario (and by each jurisdiction's study region), three maps each were developed to further illustrate seismic risk and losses. These include:

- Peak Ground Acceleration Shake Map
- Liquefaction Susceptibility Map
- Total Loss Map

Fire Following Earthquake

The Hazus analysis for each of the primary Hazus runs also includes two scenarios or iterations of Fire Following Earthquake. The Fire Following Earthquake component to the Hazus tool allows for parameters to be adjusted to obtain varying output results based on factors such as fire engine response times and weather-related parameters such as wind speed and direction. For each of the four Hazus primary scenarios run for each of the four study regions (i.e., The Tri-City Planning Area/ACWD/USD, Fremont, Newark, and Union City), two Fire Following Earthquake iterations were run. The two Fire Following Earthquake parameters modified for this analysis included Wind Speed and Direction:

- **Fire Following Earthquake Baseline Parameters.** Utilizes a wind speed of 10 mph, with a default direction of 0, which is a north wind.
- **Fire Following Earthquake Adjusted Parameters.** Utilizes a wind speed of 50 mph, with a northeast direction. Note: this is based on the presence of the Diablo Winds in the study region which generally flow at a northeasterly direction and can reach speeds (or gusts) of up to 70-80 mph. The 50 mph wind speed was utilized as this was the reported wind speed that occurred during the 1991 Tunnel Fire.

These are shown in Table B-39.

Table B-39 Fire Following Earthquake – Wind Speed and Direction Scenarios

Jurisdiction / Hazus Study Region	Scenario 1	Scenario 2
Tri-City	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Fremont	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Newark	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
Union City	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees

Jurisdiction / Hazus Study Region	Scenario 1	Scenario 2
ACWD	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees
USD	Wind: 10 MPH, Wind Direction: 0	Wind: 50 MPH, Wind Direction: 45 degrees

Source: Hazus 6.1

To support the Fire Following Earthquake results for each primary scenario (and by each study region), four maps were developed to further illustrate Fire Following Earthquake risk and exposure. These include:

- Number of Ignitions Map
- Population Exposure Map
- Value Exposure Map
- Fire Water Demand (gpm) Map

Hazus Results by Scenario

The Hazus results by scenario are summarized below. Of the four primary earthquake scenarios run for the Tri-City Planning Area, the Hayward + Rodgers Creek Scenario is the one likeliest to cause the greatest damage.

Calaveras Fault Hazus Scenario (Epicenter: Fremont; Magnitude: 7.43)

The Hazus results for the Calaveras Fault Hazus Scenario is summarized below in Table B-40. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained.

Table B-40 Tri-City Planning Area – Calaveras Fault HAZUS Earthquake Deterministic Results for 7.43 M Event

Type of Impact	Impacts to City from 7.43 Deterministic Earthquake
Total Buildings Damaged (based on 14,000 buildings)	Slight: 4,426 Moderate: 1,166 Extensive: 235 Complete: 55
Building and Income Related Losses	$601,240,000
Total Economic Losses (Includes building, income and lifeline losses)	$657,320,000
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 30 Requiring hospitalization: 4 Life threatening: 0 Fatalities: 0
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 43 Requiring hospitalization: 8 Life threatening: 2 Fatalities: 2
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 38 Requiring hospitalization: 12 Life threatening: 13

Type of Impact	Impacts to City from 7.43 Deterministic Earthquake	
	Fatalities: 4	
Damage to Transportation Systems	None with at least moderate damage	
Damage to Essential Facilities	None with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	None with at least moderate damage. 99 potable water line breaks, 50 wastewater line breaks, and 4 natural gas line breaks.	
Households without Power/Water Service (Based on 14,946 total households)	Power loss, Day 1: 13,365 Power loss, Day 3: 7,006 Power loss, Day 7: 149 Power loss, Day 30: 8 Power loss, Day 90: 2	Water loss, Day 1: 13,365 Water loss, Day 3: 7,006 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	166 displaced households	
Shelter Requirements	82 persons	
Debris Generation	64,000 tons	

Hazus 6.1

Loss Estimates Highlights

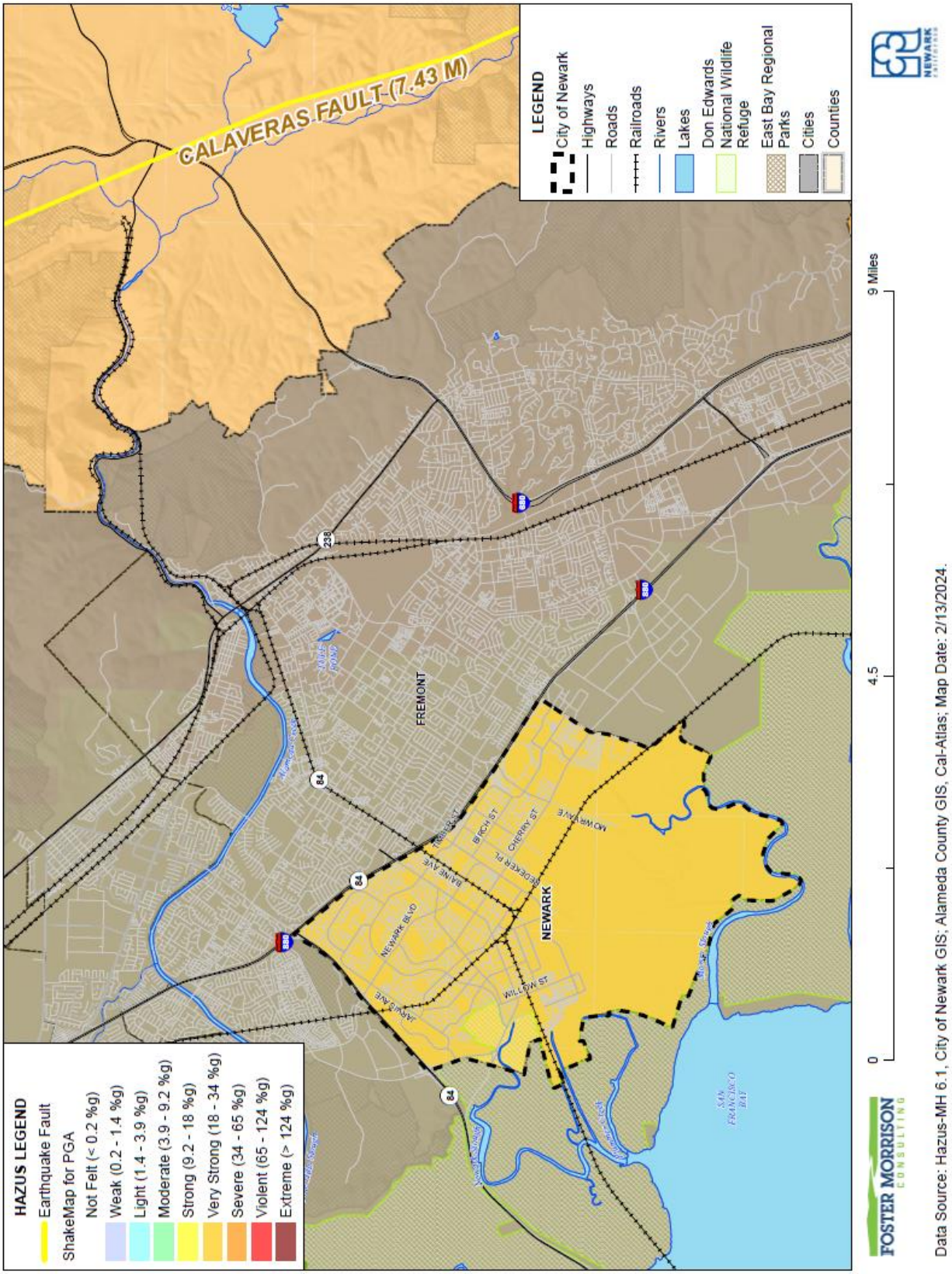
Hazus estimates that about 1,456 buildings will be at least moderately damaged. This is over 10.00 % of the buildings in the region. There are an estimated 55 buildings that will be damaged beyond repair.

The total building-related losses were 601.24 (millions of dollars); 11 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 44 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure B-30.

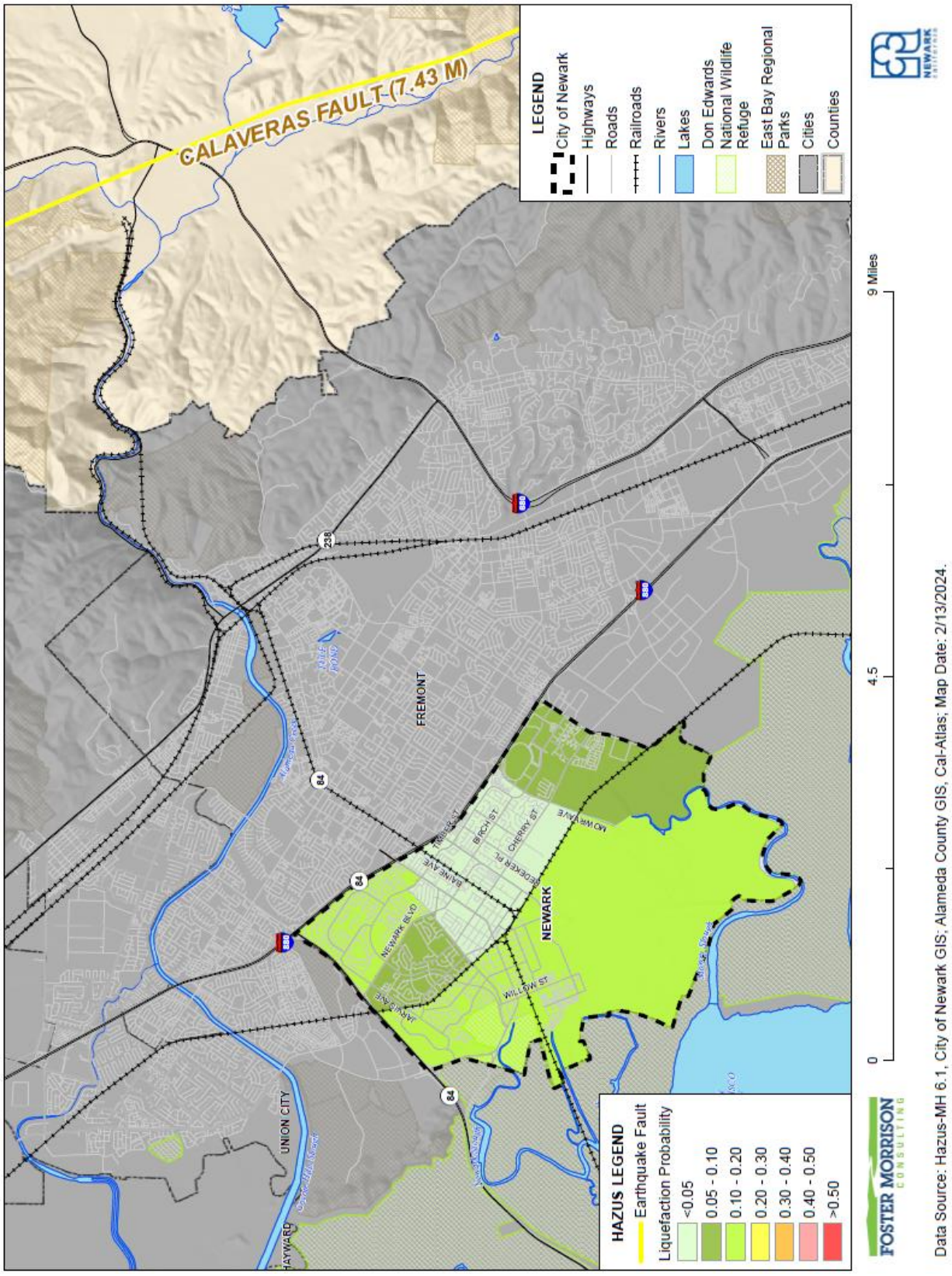
Figure B-30 Calaveras Fault - 7.43 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure B-31.

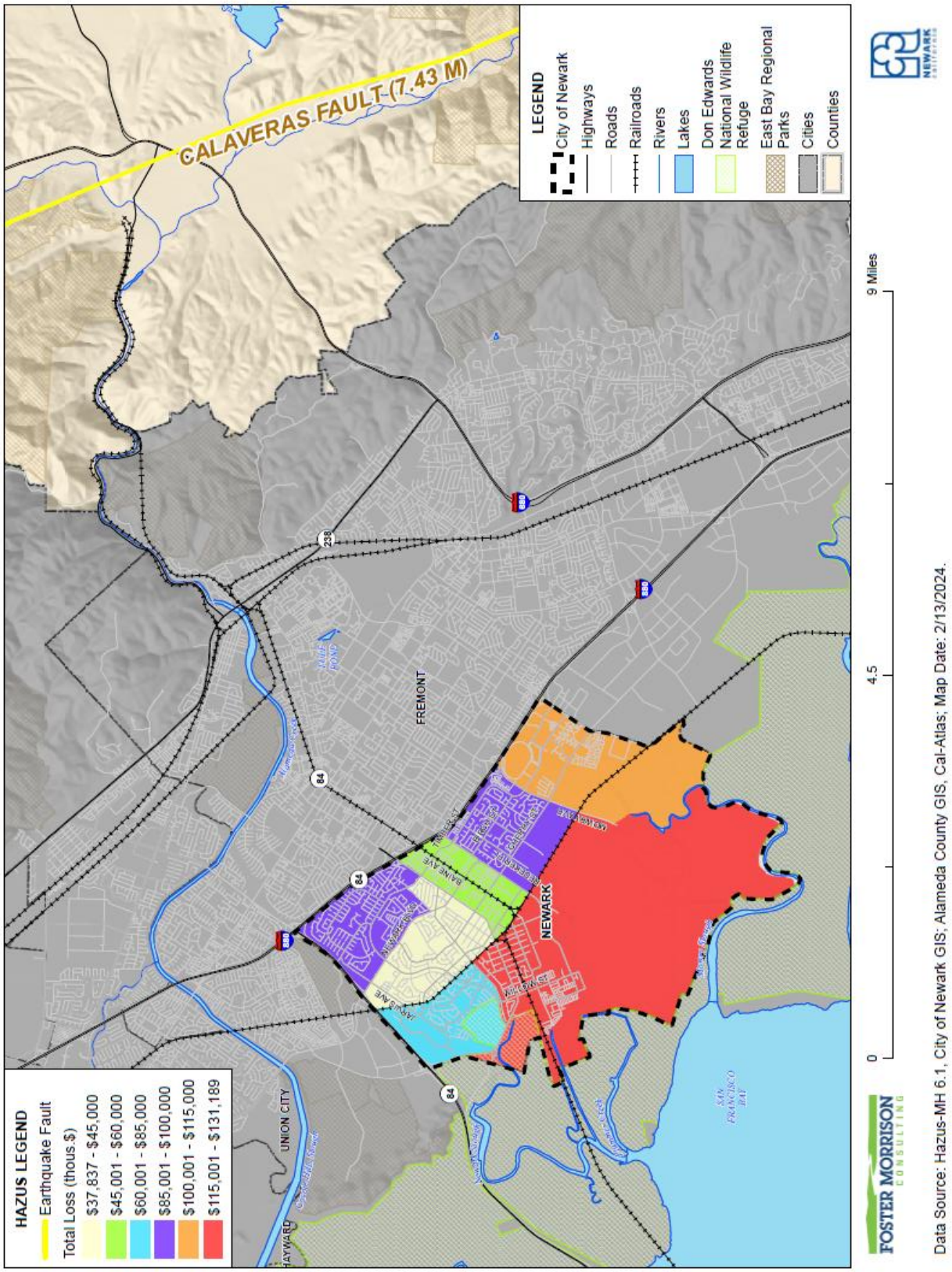
Figure B-31 Calaveras Fault 7.43 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure B-32.

Figure B-32 Calaveras Fault 7.43 Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Calaveras Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For each of the two Fire Following Earthquake iterations the following maps were generated:

- 10 mph wind scenario:
  - ✓ Number of Ignitions is shown on Figure B-33.
  - ✓ Population Exposure is shown on Figure B-34.
  - ✓ Value Exposure is shown on Figure B-35.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-36.
- 50 mph wind scenario:
  - ✓ Number of Ignitions is shown on Figure B-37.
  - ✓ Population Exposure is shown on Figure B-38
  - ✓ Value Exposure is shown on Figure B-39
  - ✓ Fire Water Demand (gpm) is shown on Figure B-40.

Figure B-33 Calaveras Fault 7.43 Magnitude Number of Ignitions (10 MPH Winds)

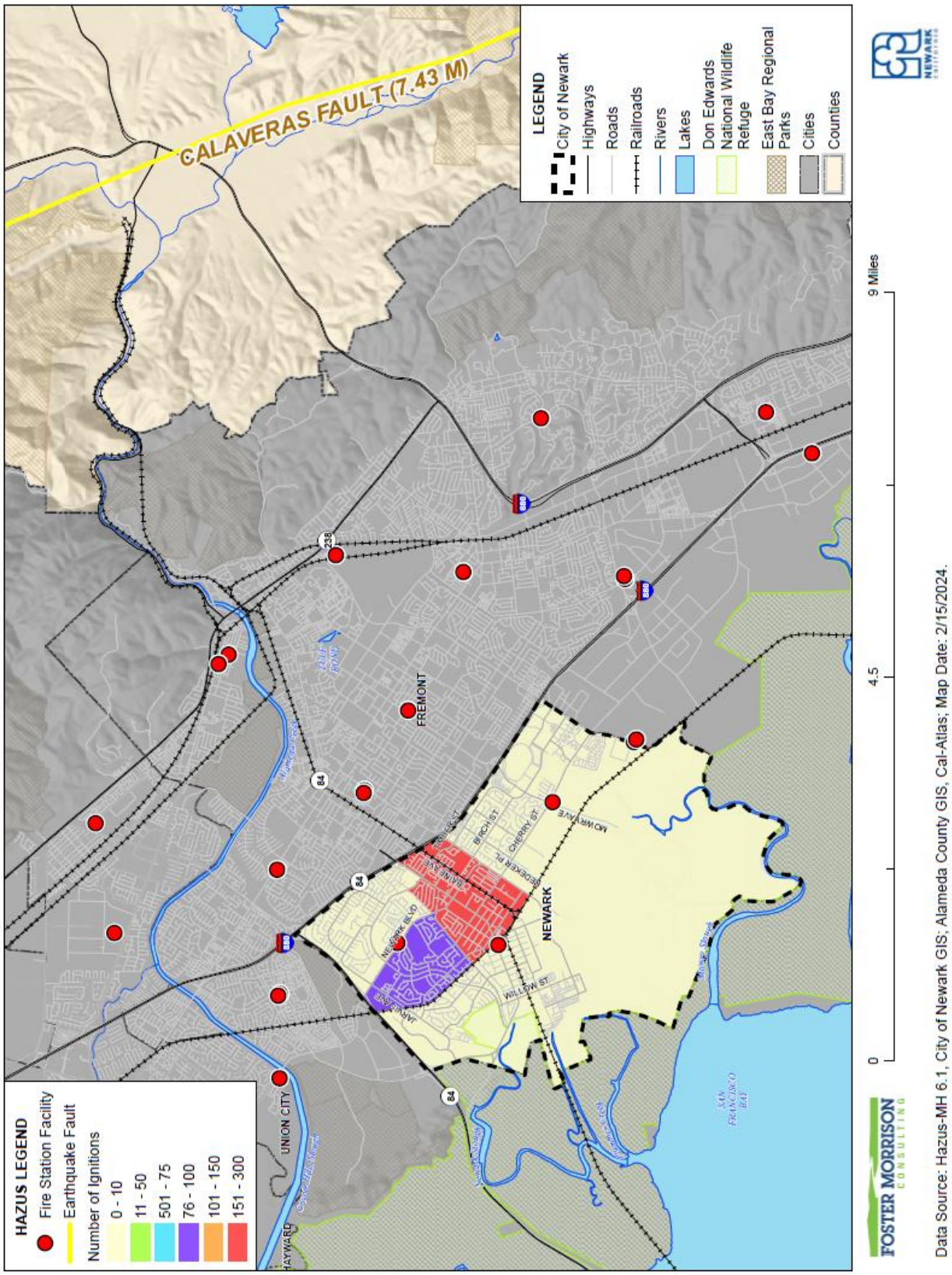


Figure B-34 Calaveras Fault 7.43 Magnitude Population Exposure (10 MPH Winds)

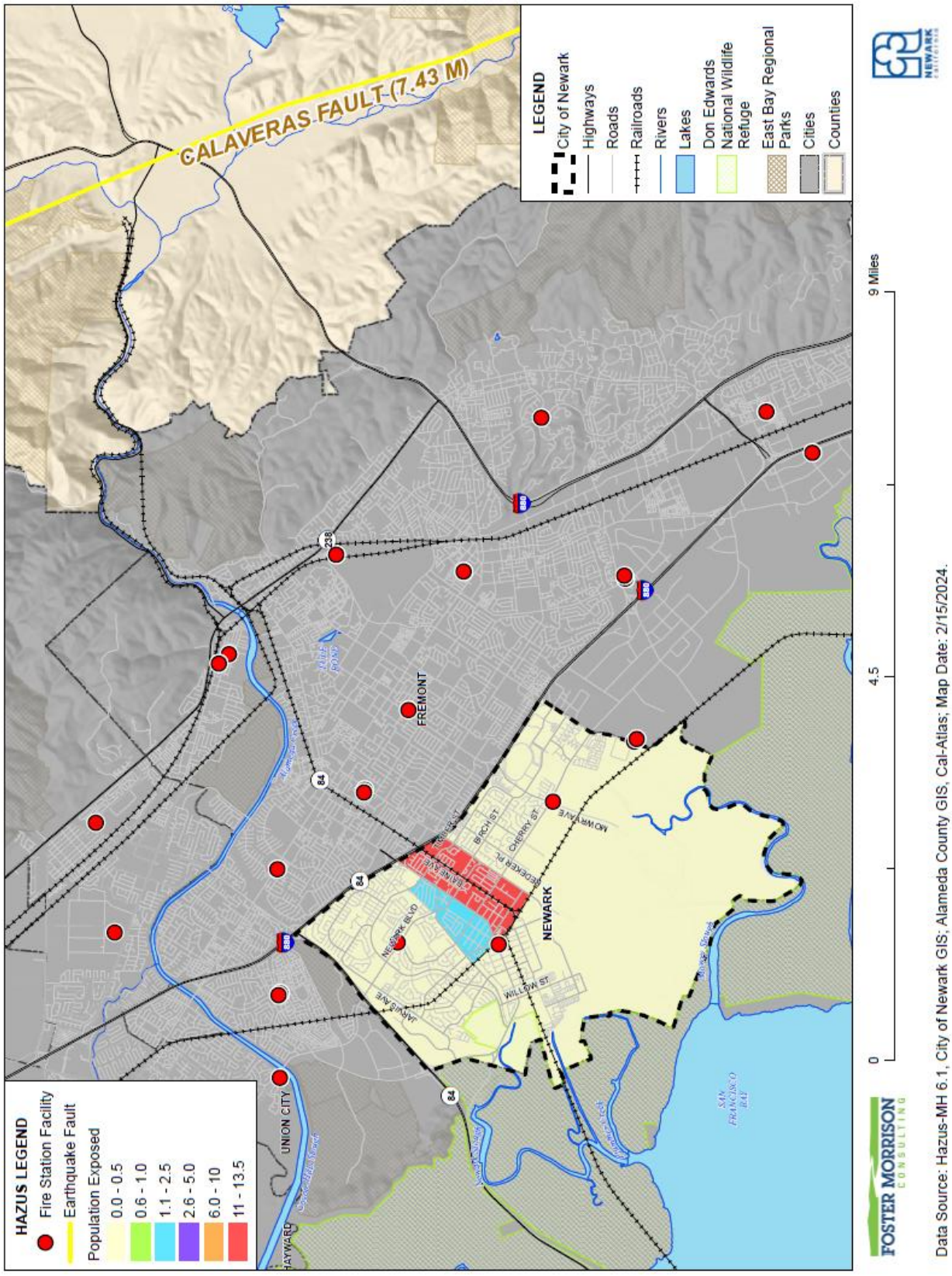


Figure B-35 Calaveras Fault 7.43 Magnitude Exposed Values (10 MPH Winds)

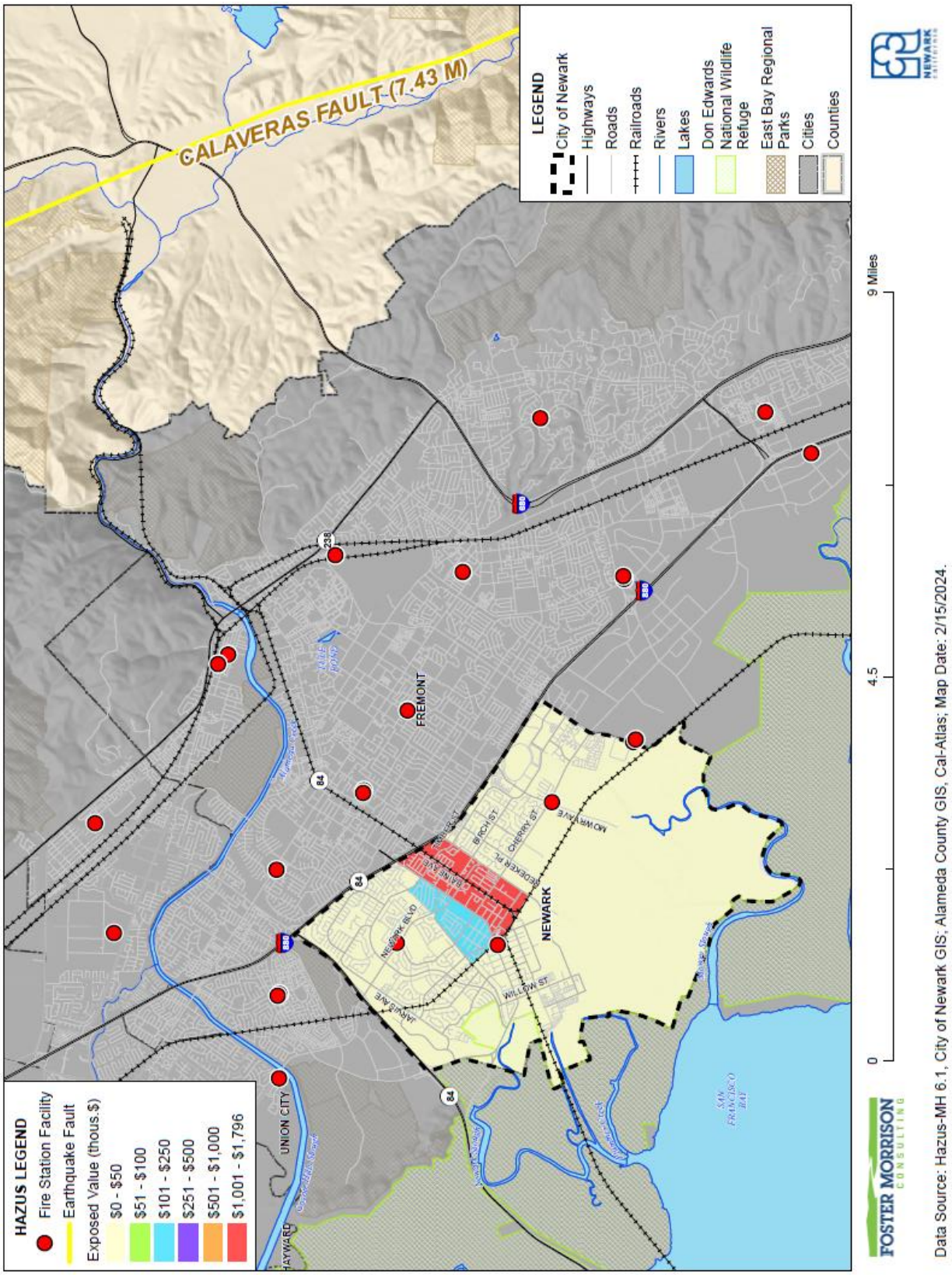


Figure B-36 Calaveras Fault 7.43 Magnitude Fire Water Demand in GPM (10 MPH Winds)

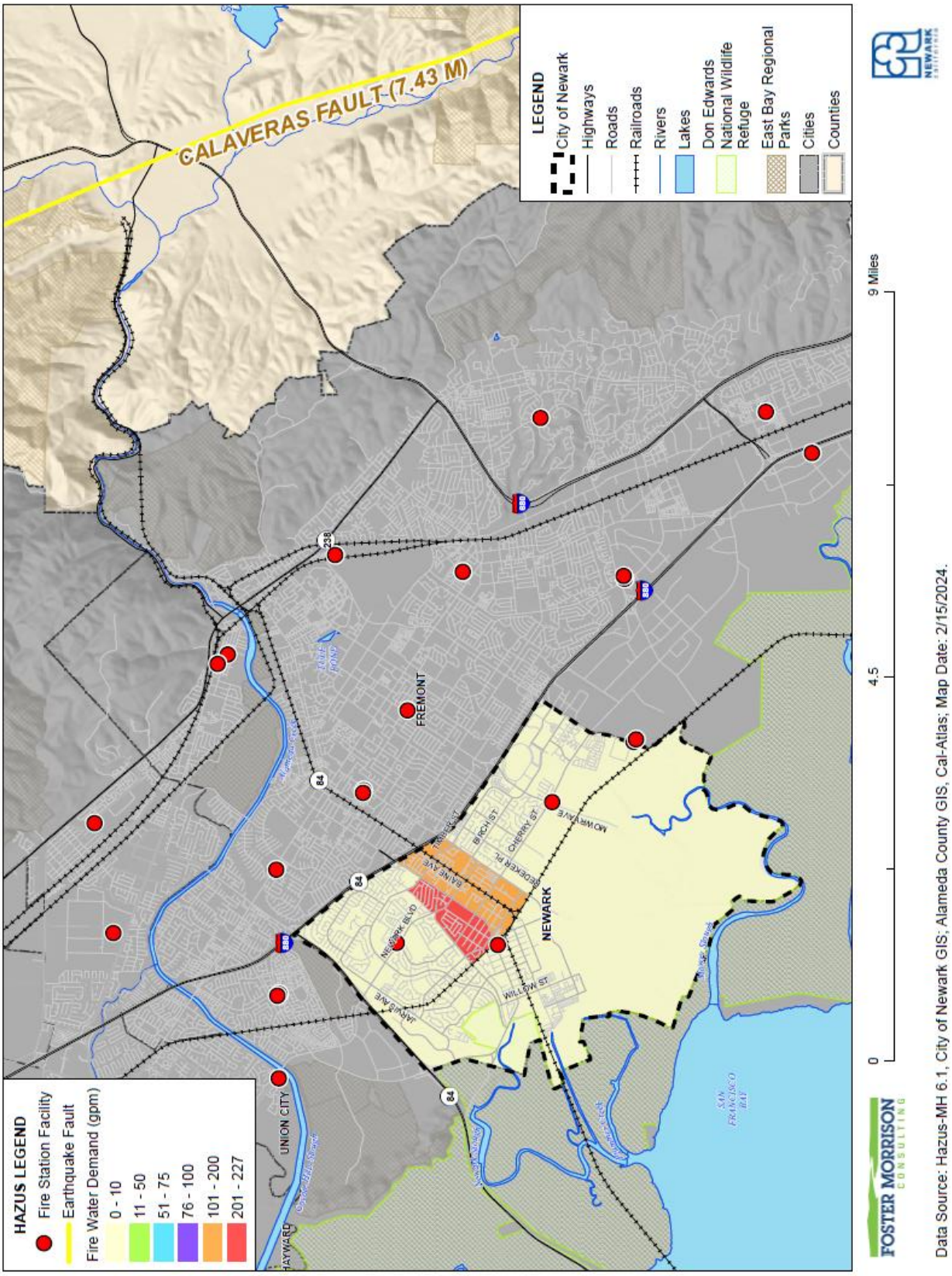


Figure B-37 Calaveras Fault 7.43 Magnitude Number of Ignitions (50 MPH Winds)

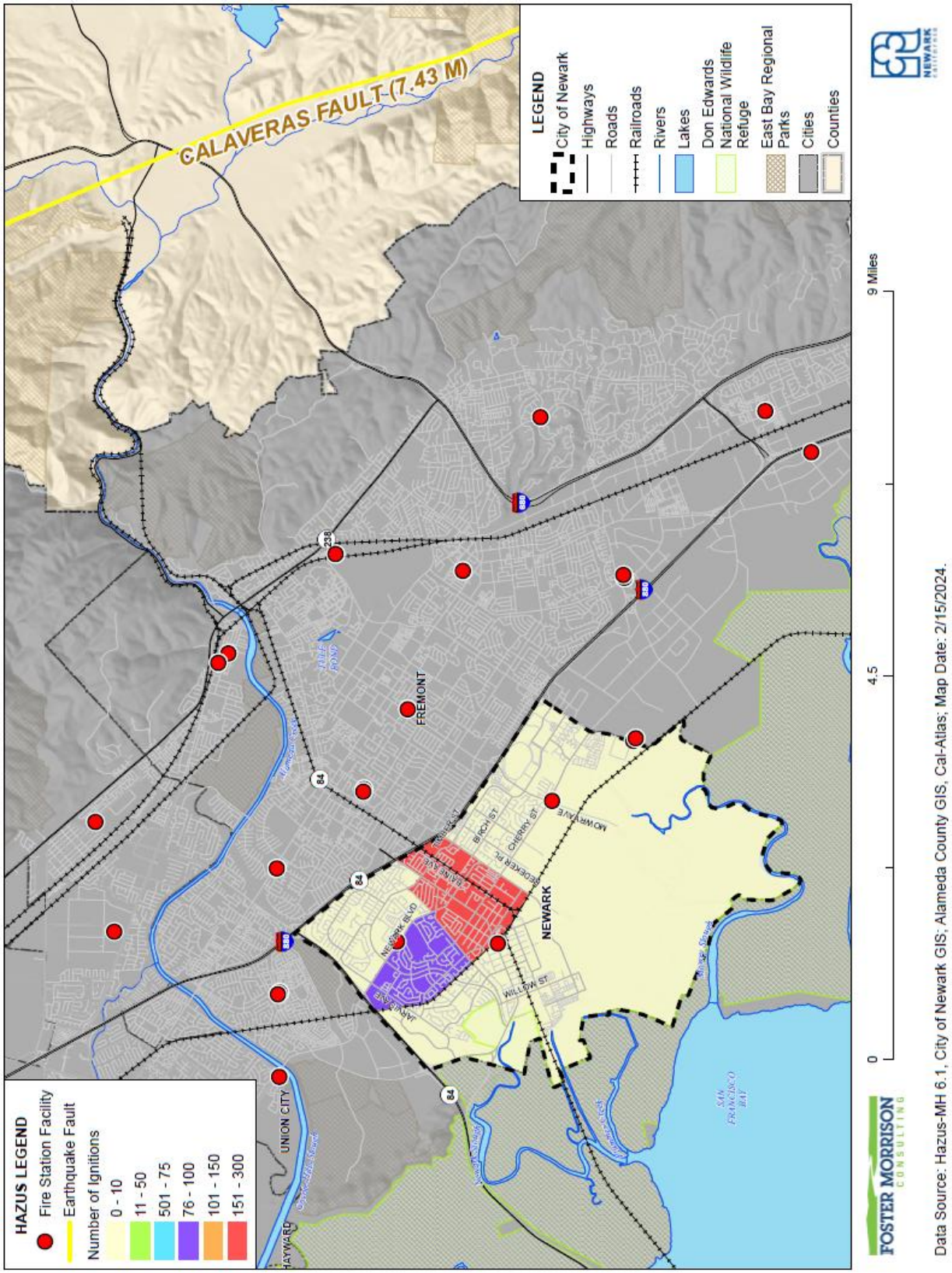


Figure B-38 Calaveras Fault 7.43 Magnitude Population Exposure (50 MPH Winds)

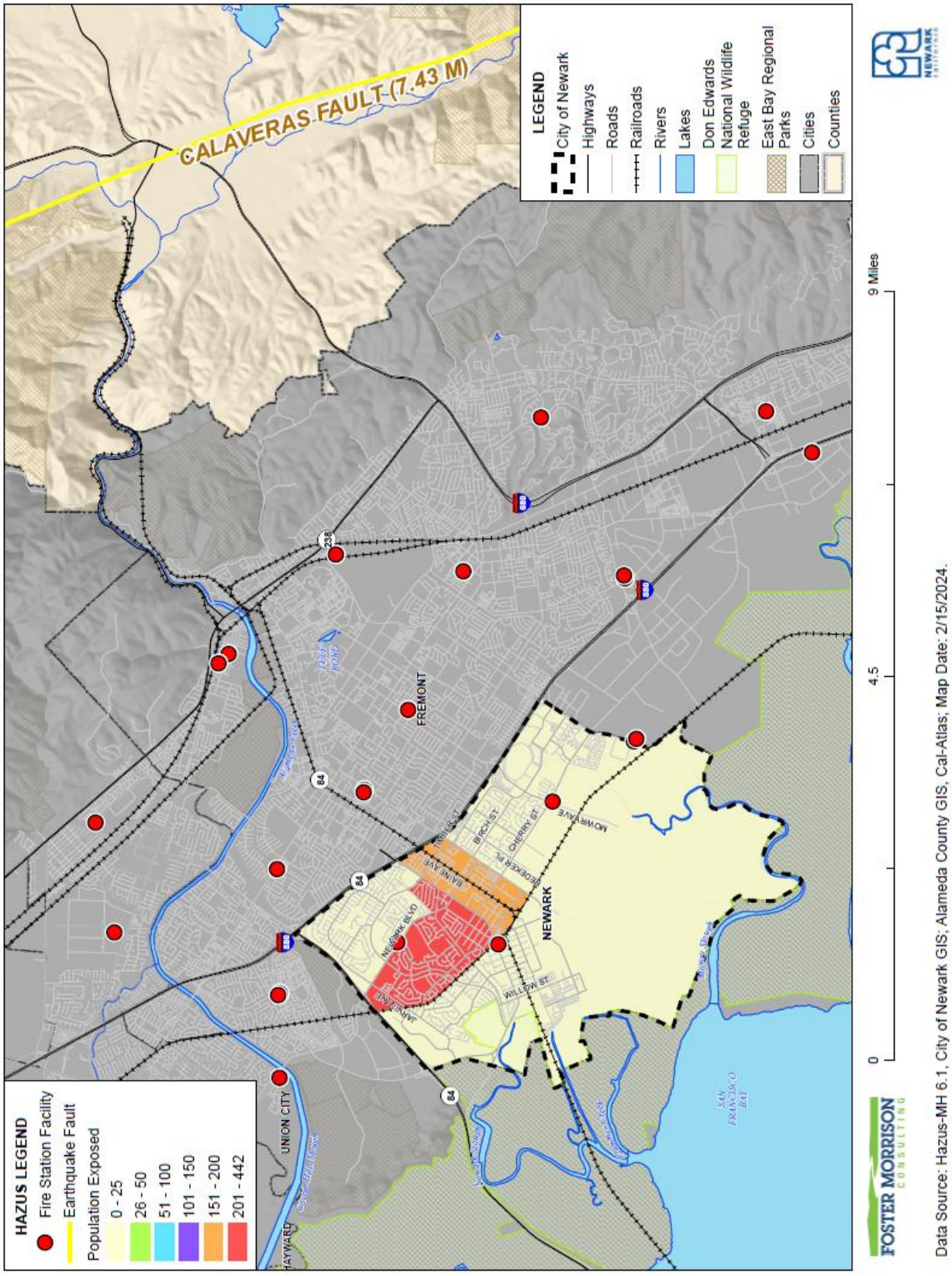


Figure B-39 Calaveras Fault 7.43 Magnitude Exposed Values (50 MPH Winds)

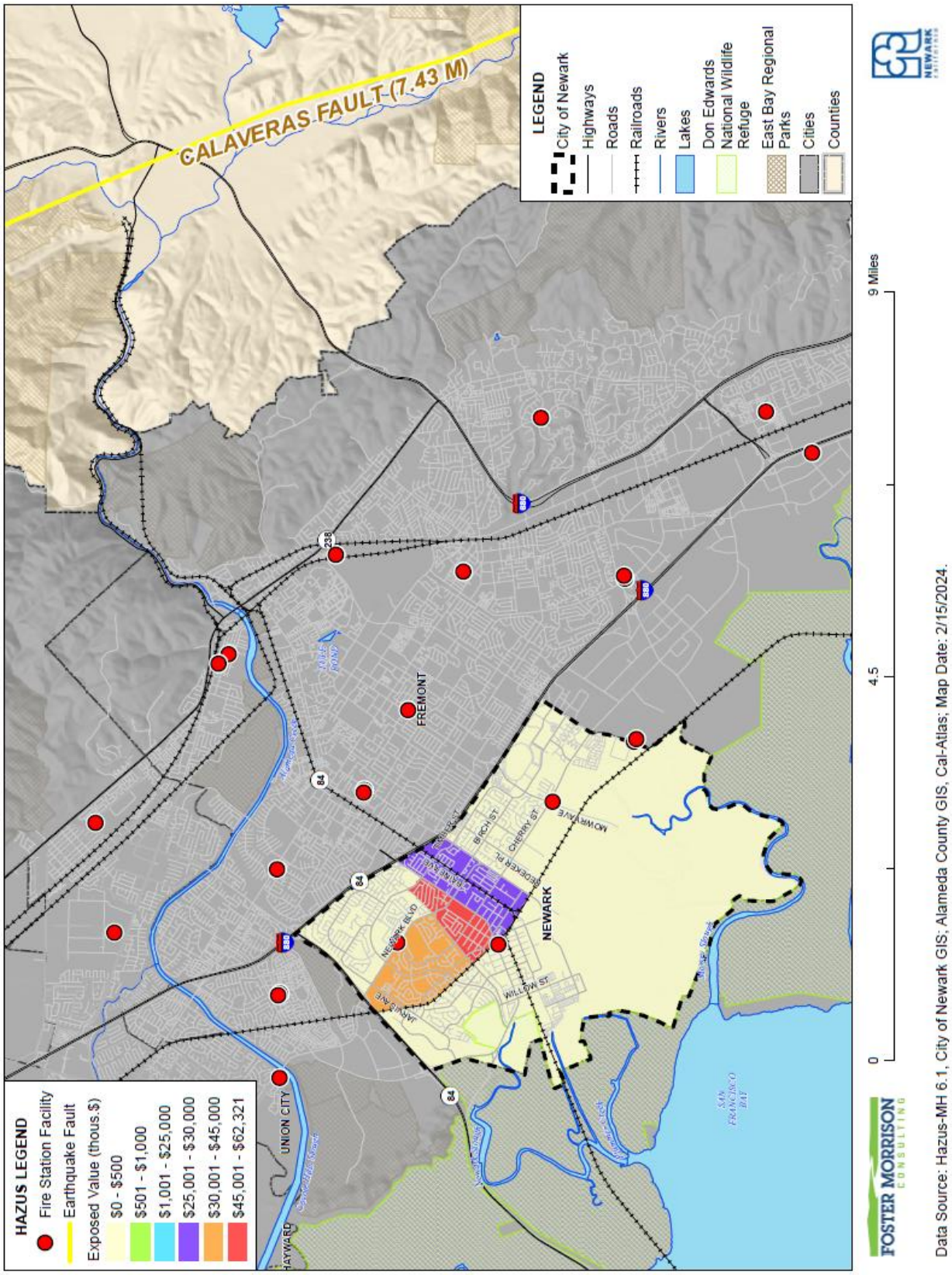
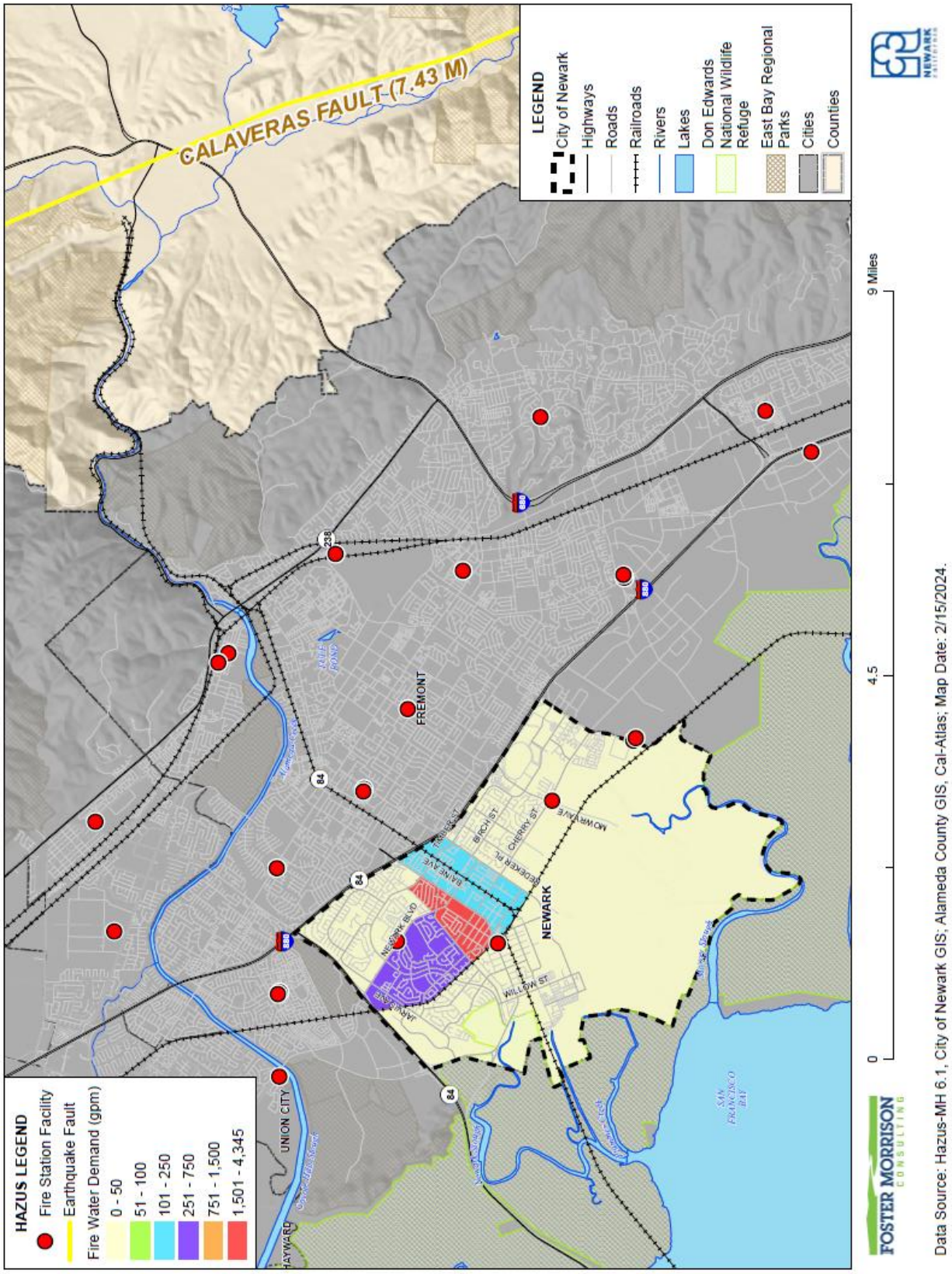


Figure B-40 Calaveras Fault 7.43 Magnitude Fire Water Demand in GPM (50 MPH Winds)



Hayward + Rodgers Creek Fault Hazus Scenario (Epicenter: Fremont; Magnitude: 7.57)

The Hazus results for the Hayward + Rodgers Creek Fault Hazus Scenario is summarized below in Table B-41. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained. ***Note***: The location of the Hayward Fault on the maps below was noted by the City to not be in the correct locations. Foster Morrison was unable to modify the fault location on the maps below as that is the location that FEMA's Hazus program has recorded for the fault. Its actual location is correct in terms of the analysis (so the table below remain correct). FEMA was notified of this error.

Table B-41 Tri-City Planning Area– Hayward + Rodgers Creek Fault HAZUS Earthquake Deterministic Results for 7.57 M Event

Type of Impact	Impacts to City from 7.57 Deterministic Earthquake	
Total Buildings Damaged (based on 14,000 buildings)	Slight: 5,607 Moderate: 2,689 Extensive: 981 Complete: 285	
Building and Income Related Losses	$1,688,210,000	
Total Economic Losses (Includes building, income and lifeline losses)	$1,938,420,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 101 Requiring hospitalization: 18 Life threatening: 1 Fatalities: 2	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 195 Requiring hospitalization: 50 Life threatening: 8 Fatalities: 14	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 153 Requiring hospitalization: 47 Life threatening: 26 Fatalities: 13	
Damage to Transportation Systems	None with at least moderate damage	
Damage to Essential Facilities	11 schools and 1 fire station with at least moderate damage. 4 school facilities with complete damage.	
Damage to Utility Systems	None with at least moderate damage. None with complete damage. 231 potable water line breaks, 116 wastewater line breaks, and 11 natural gas line breaks.	
Households without Power/Water Service (Based on 14,946 total households)	Power loss, Day 1: 12,078 Power loss, Day 3: 8,556 Power loss, Day 7: 14,029 Power loss, Day 30: 454 Power loss, Day 90: 15	Water loss, Day 1: 14,839 Water loss, Day 3: 14,696 Water loss, Day 7: 12,279 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	773 displaced households	
Shelter Requirements	384 persons	
Debris Generation	238,000 tons	

Hazus 6.1

Loss Estimates Highlights

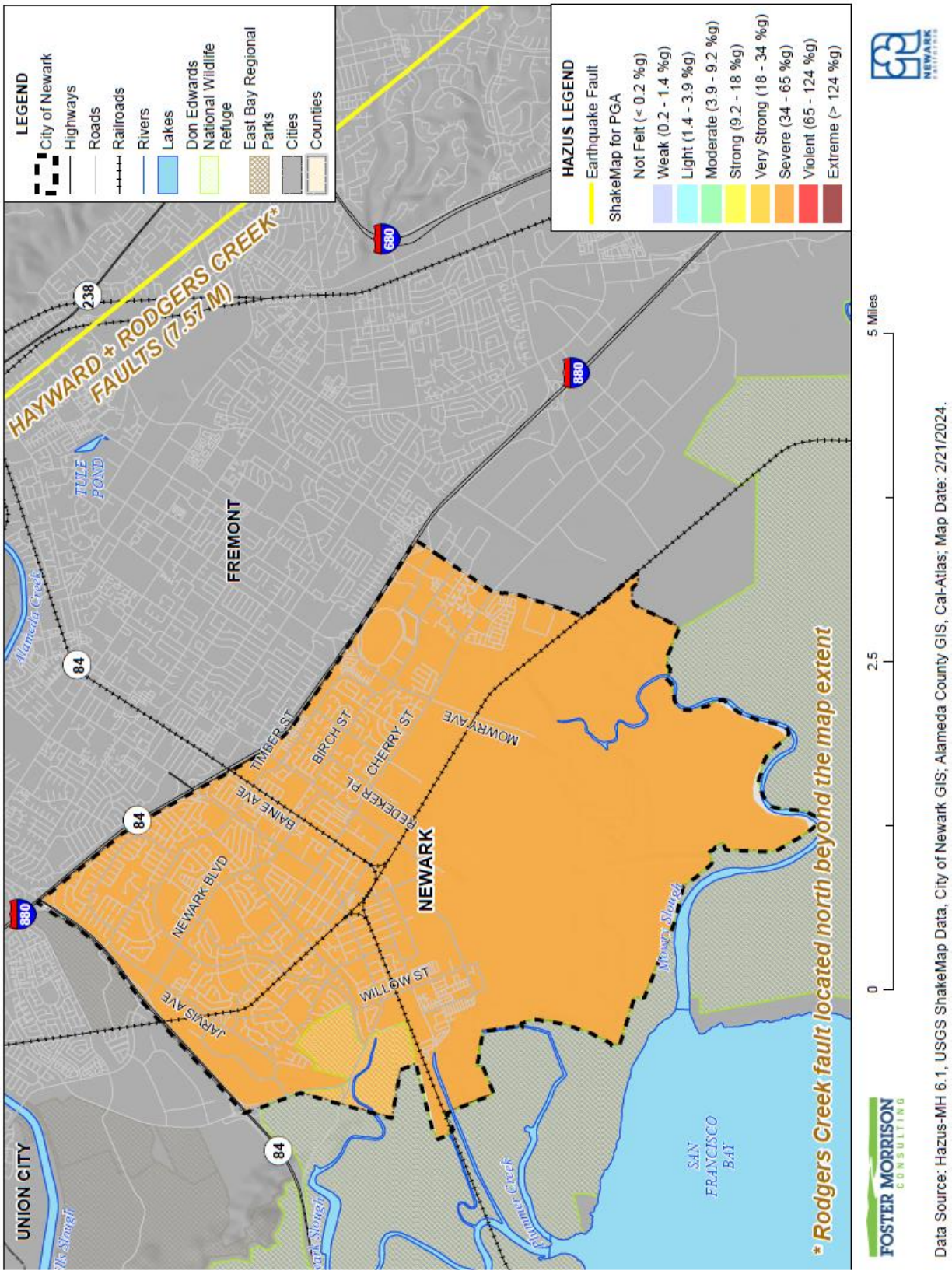
Hazus estimates that about 3,955 buildings will be at least moderately damaged. This is over 28.00 % of the buildings in the region. There are an estimated 285 buildings that will be damaged beyond repair. T

The total building-related losses were 1,688.21 (millions of dollars); 12 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 41 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure B-41.

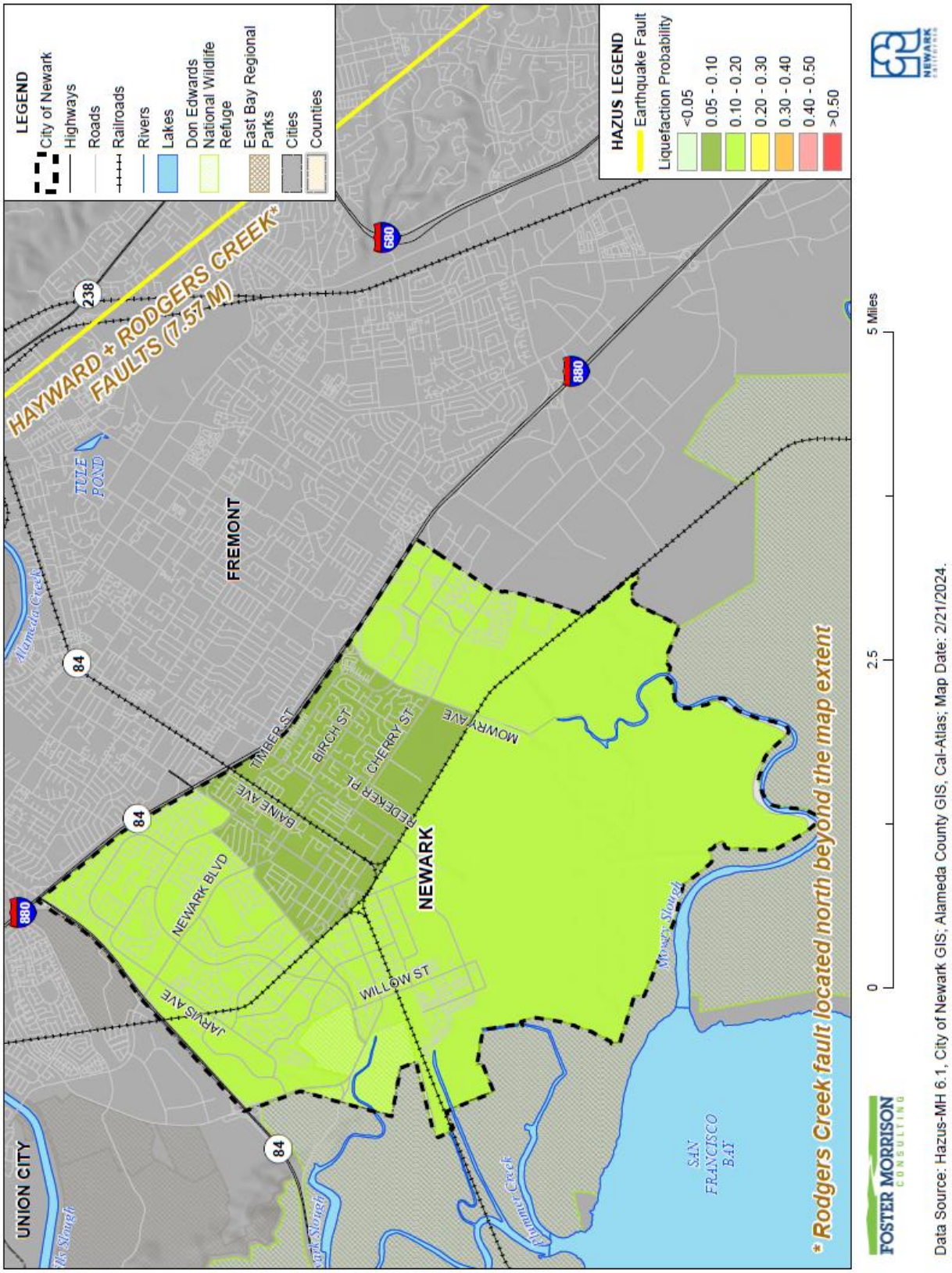
Figure B-41 Hayward + Rodgers Creek Fault - 7.57 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure B-42.

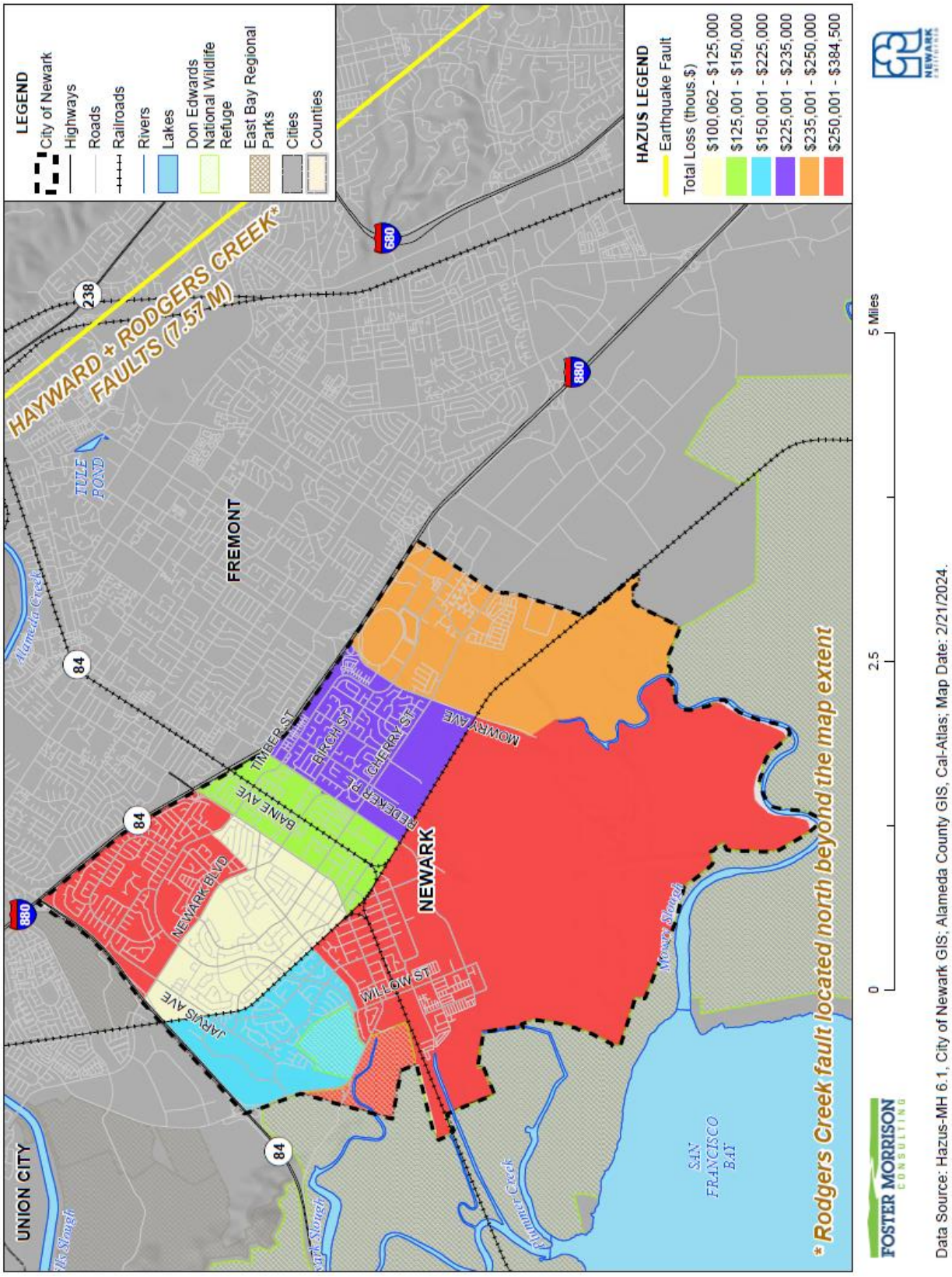
Figure B-42 Hayward + Rodgers Creek Fault 7.57 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure B-43.

Figure B-43 Hayward + Rodgers Creek Fault 7.57 Magnitude Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Haywood + Rodgers Creek Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-44.
  - ✓ Population Exposure is shown on Figure B-45.
  - ✓ Value Exposure is shown on Figure B-46.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-47.
- Four maps were created for the 50 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-48.
  - ✓ Population Exposure is shown on Figure B-49.
  - ✓ Value Exposure is shown on Figure B-50.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-51.

Figure B-44 Hayward + Rodgers Creek Fault 7.57 Magnitude Number of Ignitions (10 MPH Winds)

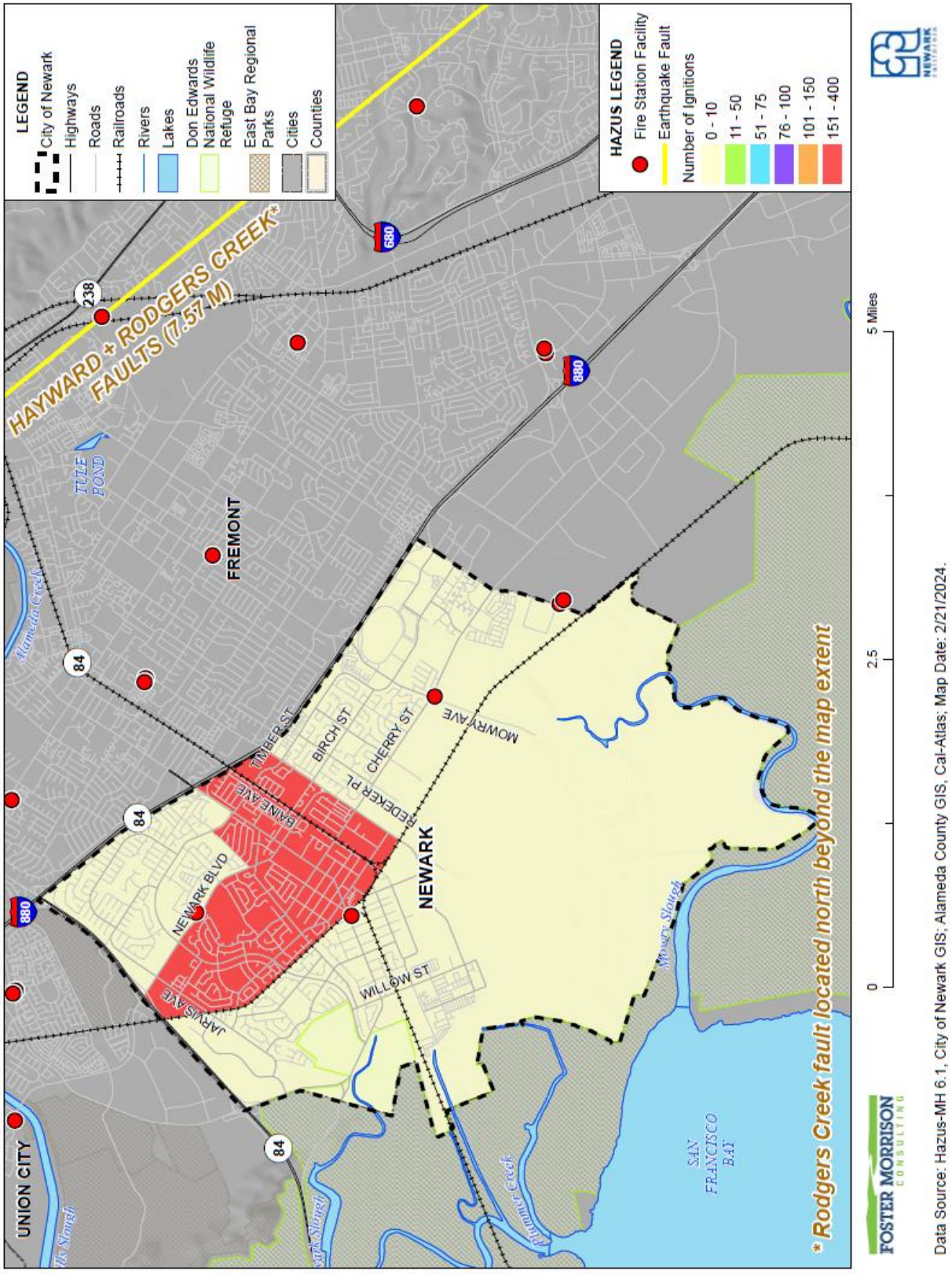


Figure B-45 Hayward + Rodgers Creek Fault 7.57 Magnitude Population Exposure (10 MPH Winds)

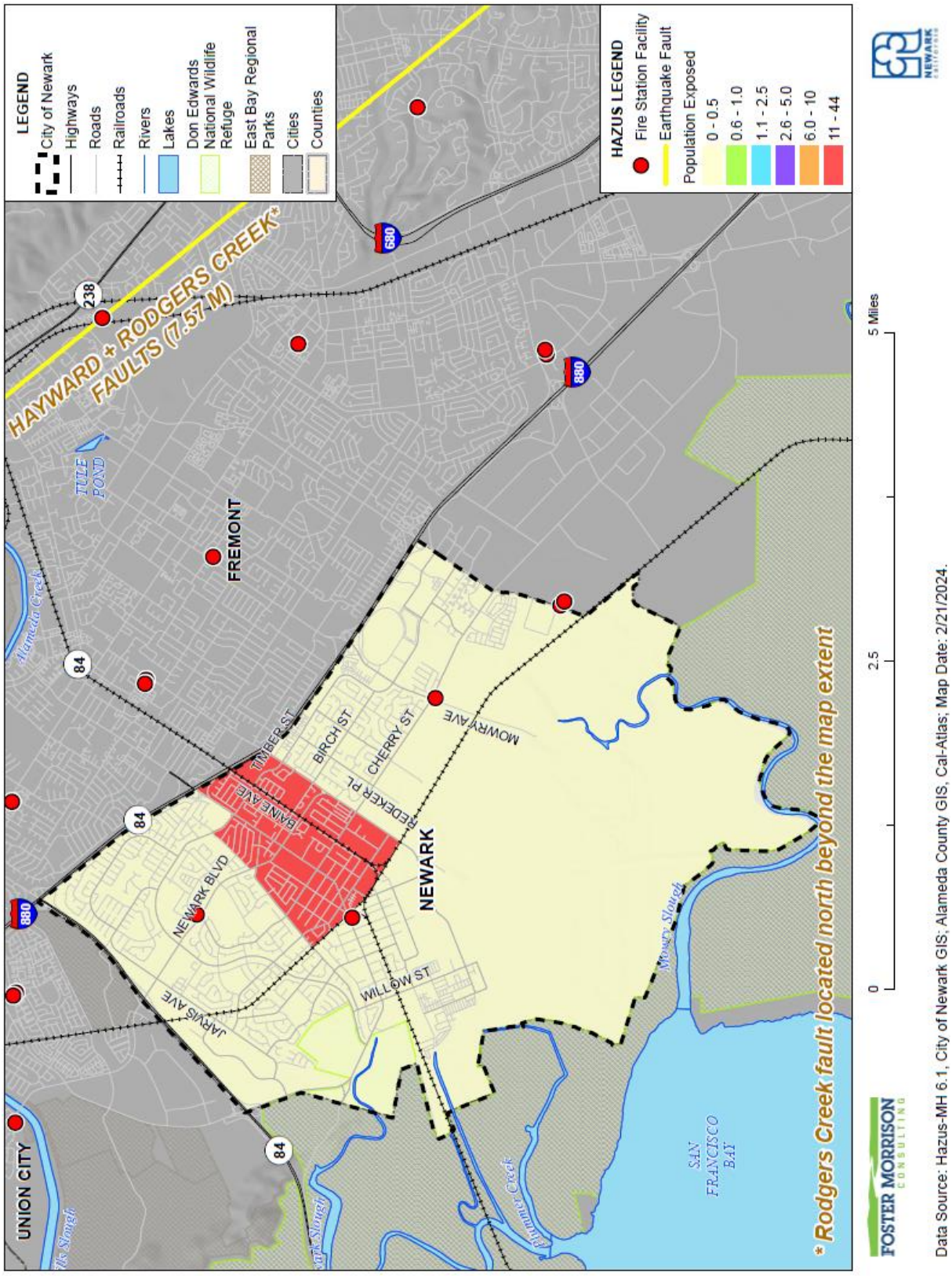


Figure B-46 Hayward + Rodgers Creek Fault 7.57 Magnitude Exposed Values (10 MPH Winds)

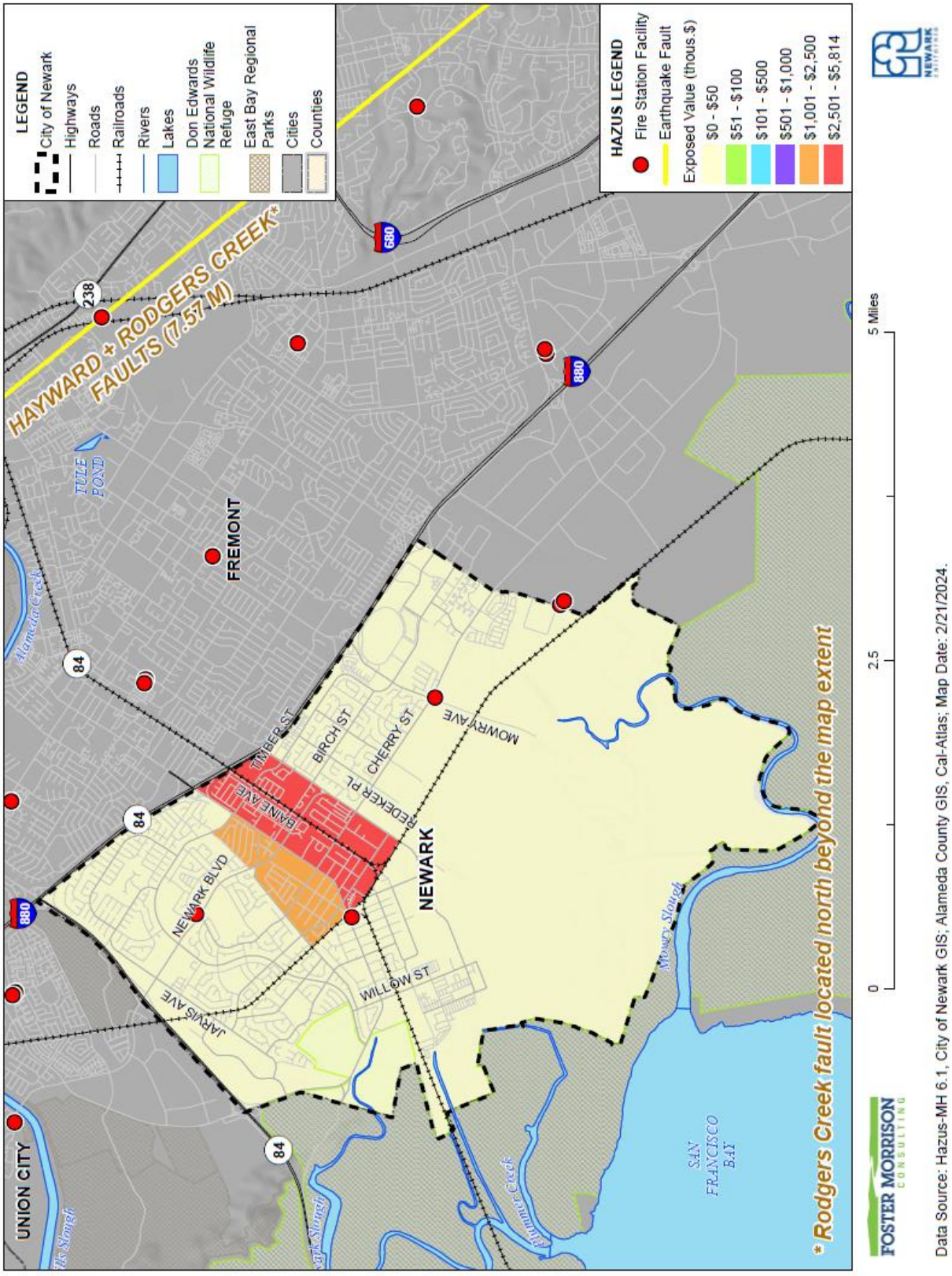


Figure B-47 Hayward + Rodgers Creek Fault 7.57 Magnitude Fire Water Demand in GPM (10 MPH Winds)

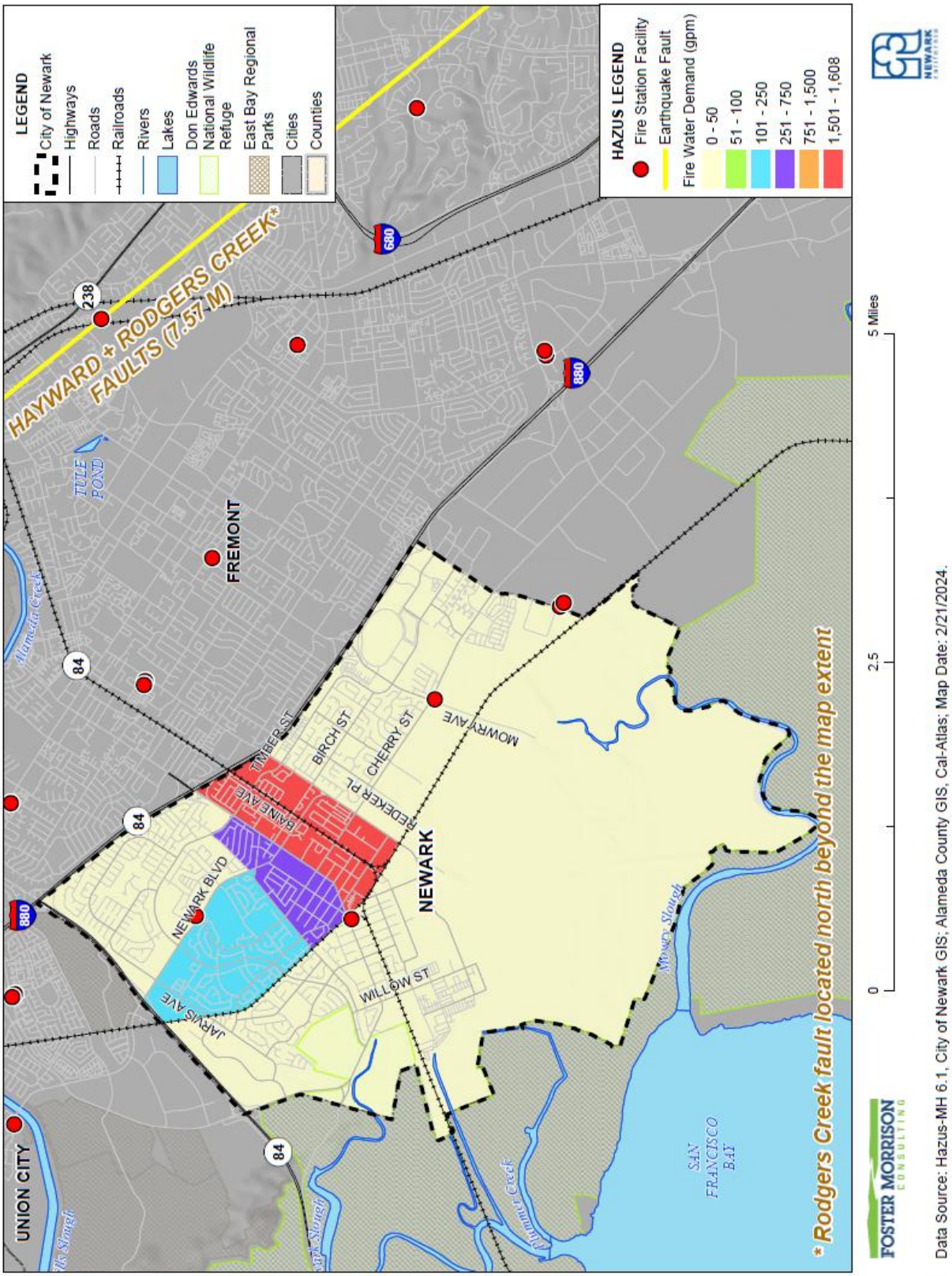


Figure B-48 Hayward + Rodgers Creek Fault 7.57 Magnitude Number of Ignitions (50 MPH Winds)

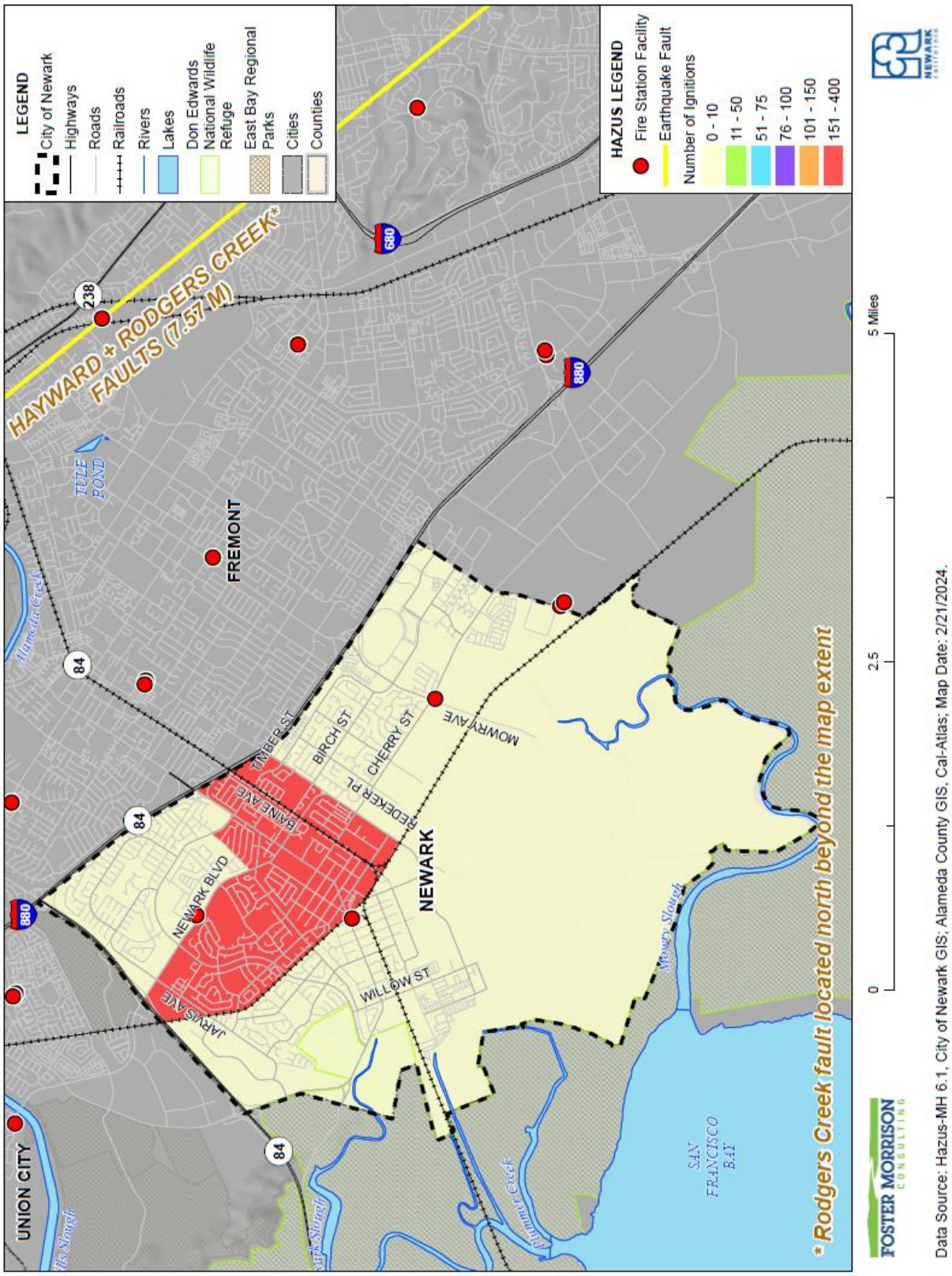


Figure B-49 Hayward + Rodgers Creek Fault 7.57 Magnitude Population Exposure (50 MPH Winds)

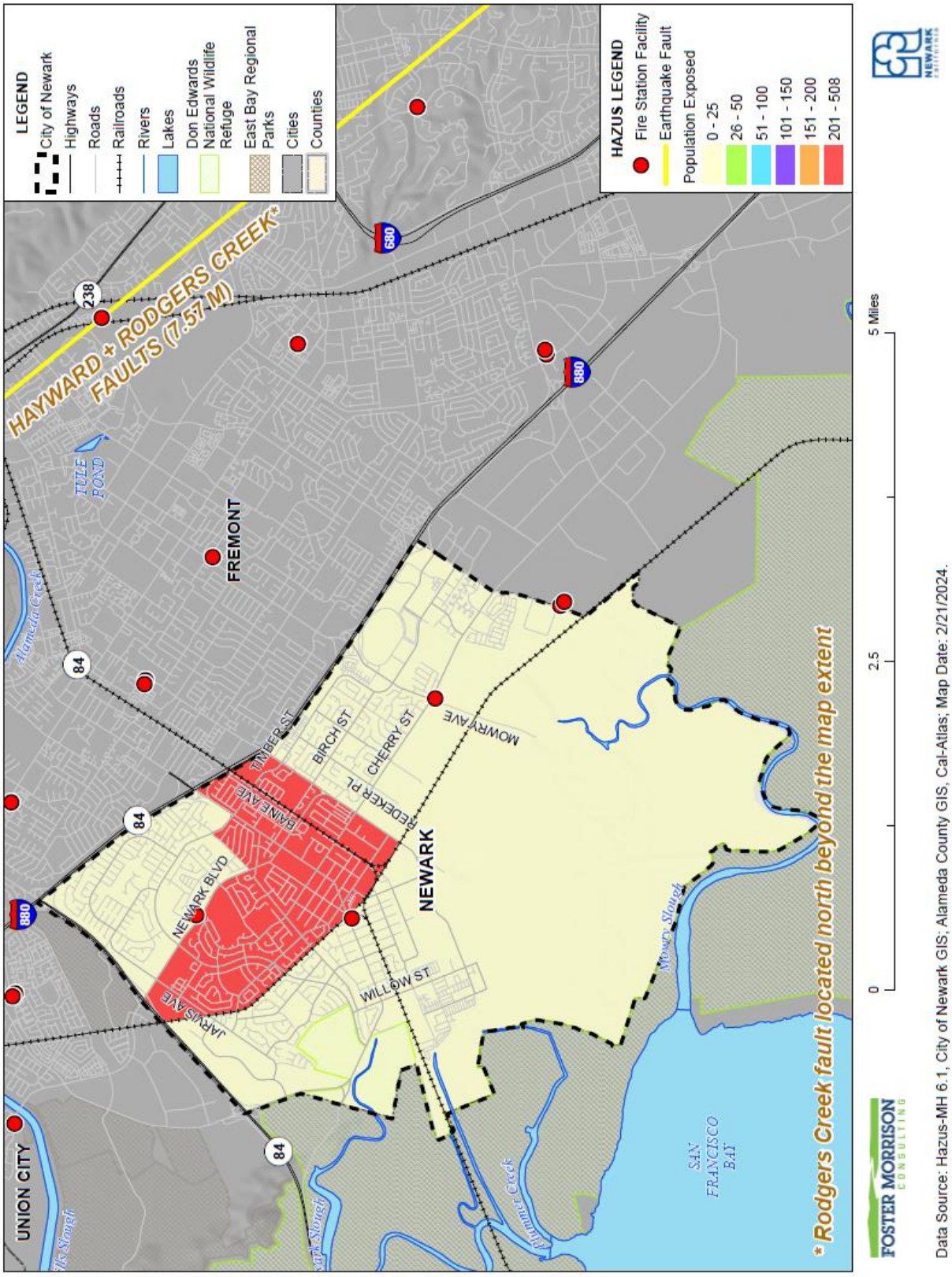


Figure B-50 Hayward + Rodgers Creek Fault 7.57 Magnitude Exposed Values (50 MPH Winds)

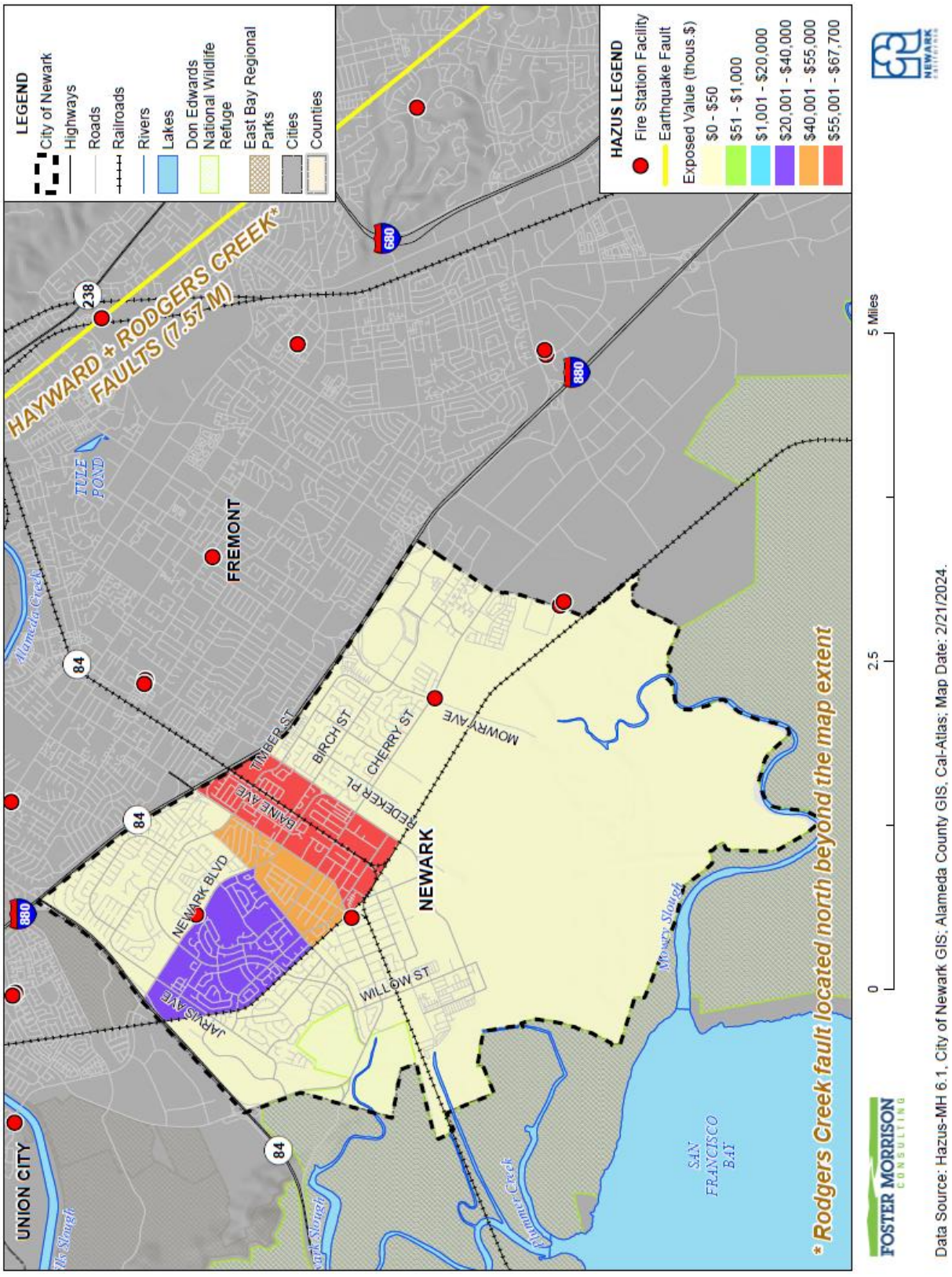
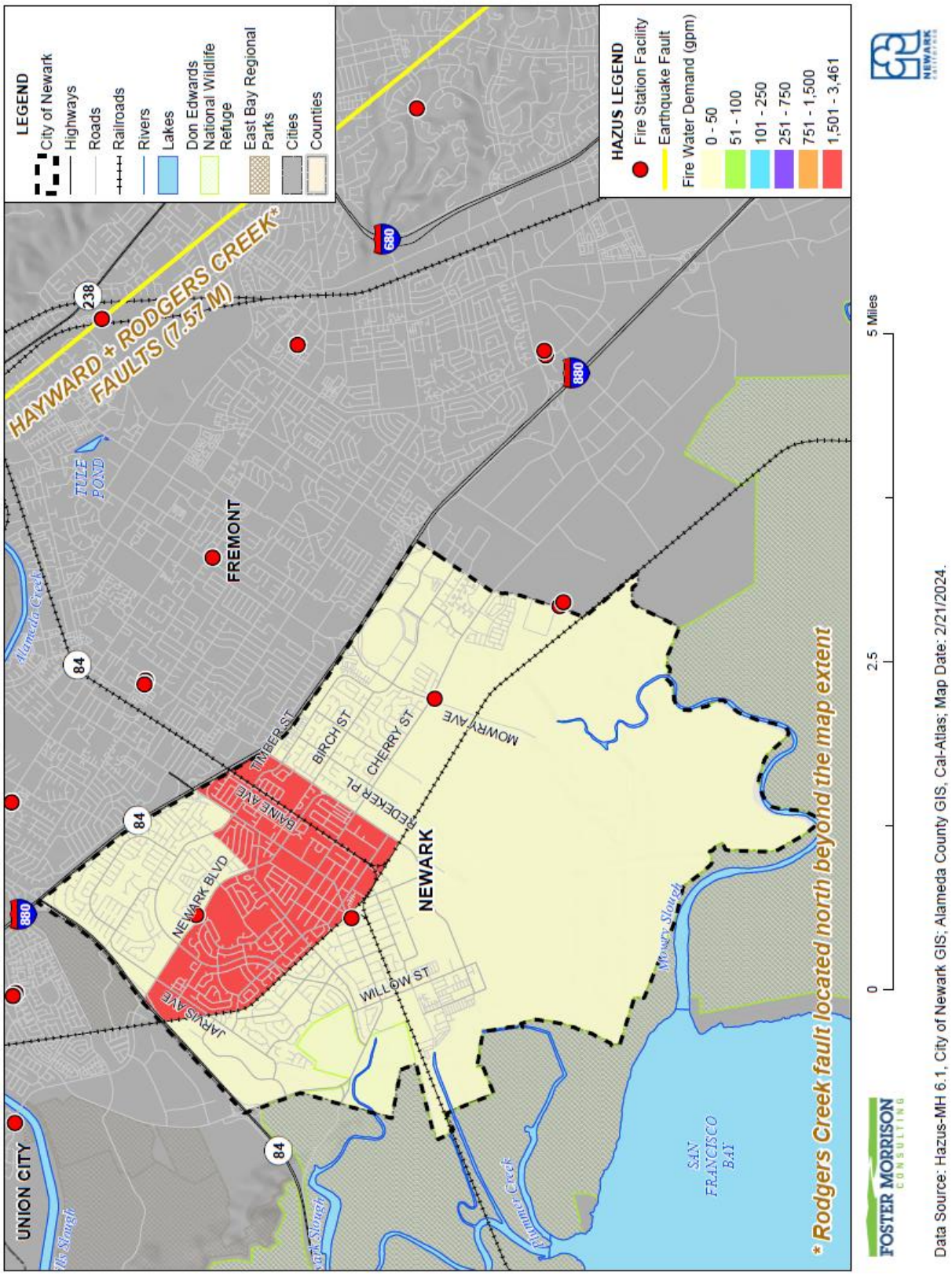


Figure B-51 Hayward + Rodgers Creek Fault 7.57 Magnitude Fire Water Demand in GPM (50 MPH Winds)



Haywired Scenario (Hayward Fault) HAZUS-MH Earthquake Loss Estimation Deterministic Results for 7.0 M Event

The Hazus results for the Haywired (Hayward Fault) Hazus Scenario is summarized below in Table B-42. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained.

Note: The location of the Hayward Fault on the maps below was noted by the City to not be in the correct locations. Foster Morrison was unable to modify the fault location on the maps below as that is the location that FEMA's Hazus program has recorded for the fault. Its actual location is correct in terms of the analysis (so the table below remain correct). FEMA was notified of this error.

Table B-42 Tri-City Planning Area– Haywired (Hayward Fault) HAZUS Earthquake Deterministic Results for 7.0 M Event

Type of Impact	Impacts to City from 7.0 Deterministic Earthquake	
Total Buildings Damaged (based on 14,000 buildings)	Slight: 3,368 Moderate: 683 Extensive: 74 Complete: 15	
Building and Income Related Losses	$311,810,000	
Total Economic Losses (Includes building, income and lifeline losses)	$325,900,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 14 Requiring hospitalization: 1 Life threatening: 0 Fatalities: 0	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 19 Requiring hospitalization: 3 Life threatening:1 Fatalities: 1	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 20 Requiring hospitalization: 8 Life threatening: 11 Fatalities: 2	
Damage to Transportation Systems	None with at least moderate damage	
Damage to Essential Facilities	None with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	None with at least moderate damage. 42 potable water line breaks, 21 wastewater line breaks, and 3 natural gas line breaks.	
Households without Power/Water Service (Based on 14,946 total households)	Power loss, Day 1: 4,610 Power loss, Day 3: 0 Power loss, Day 7: 0 Power loss, Day 30: 0 Power loss, Day 90: 0	Water loss, Day 1: 0 Water loss, Day 3: 0 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	53 displaced households	
Shelter Requirements	26 persons	

Type of Impact	Impacts to City from 7.0 Deterministic Earthquake
Debris Generation	30,000 tons

Hazus 6.1

Loss Estimates Highlights

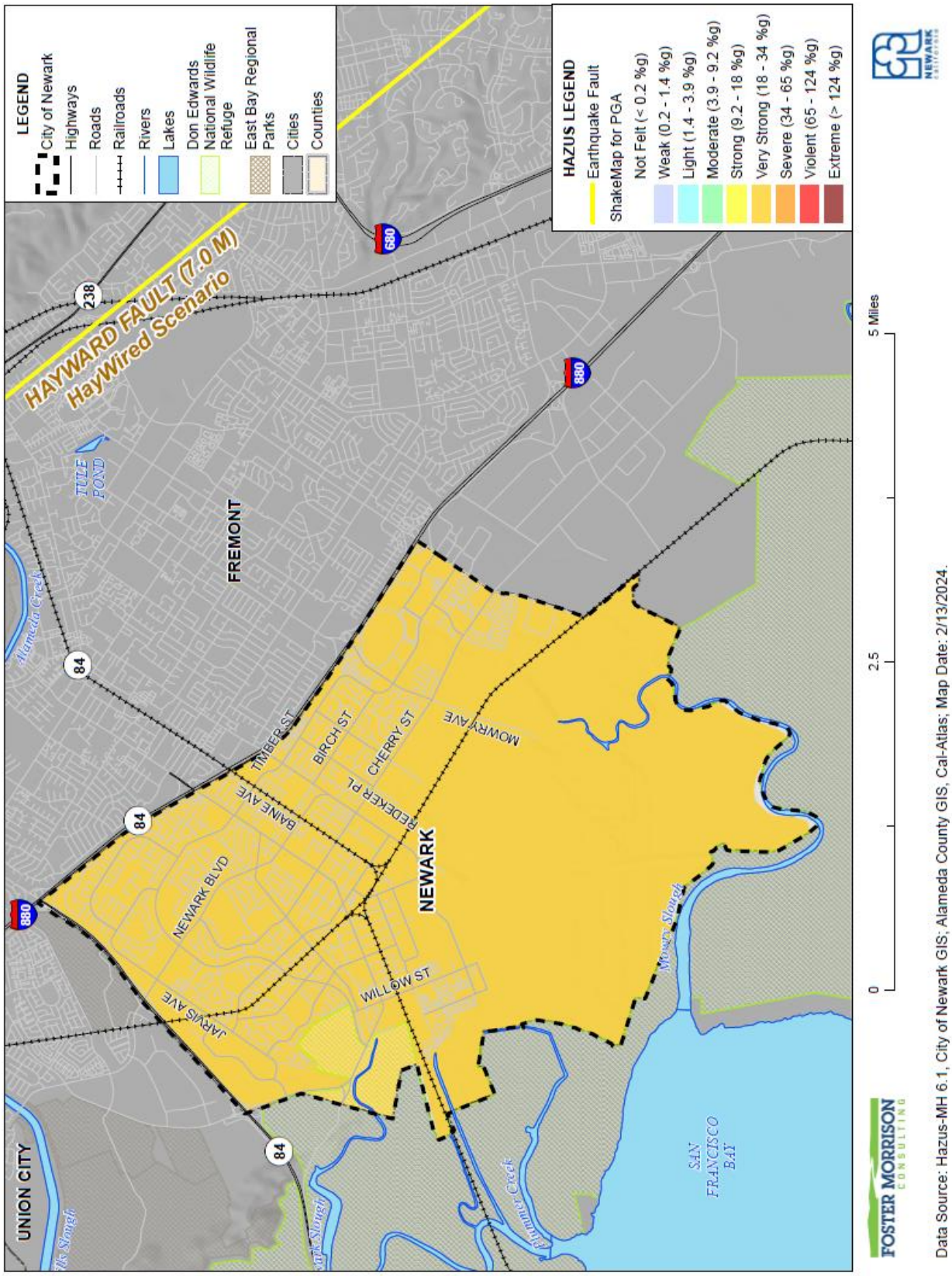
Hazus estimates that about 771 buildings will be at least moderately damaged. This is over 5.00 % of the buildings in the region. There are an estimated 14 buildings that will be damaged beyond repair.

The total building-related losses were 311.81 (millions of dollars); 10 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 45 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure B-52.

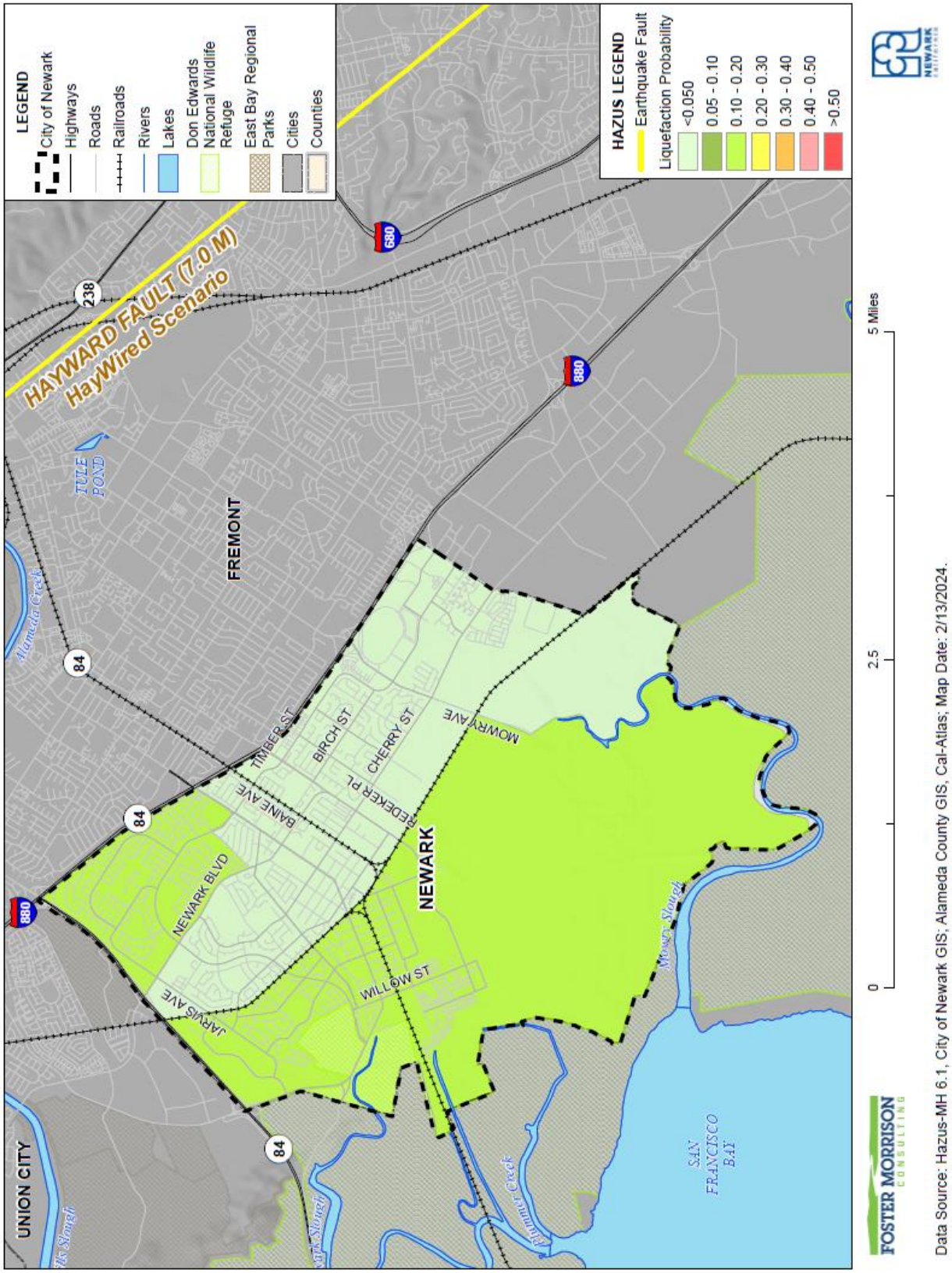
Figure B-52 Haywired (Hayward Fault) Scenario 7.0 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure B-53.

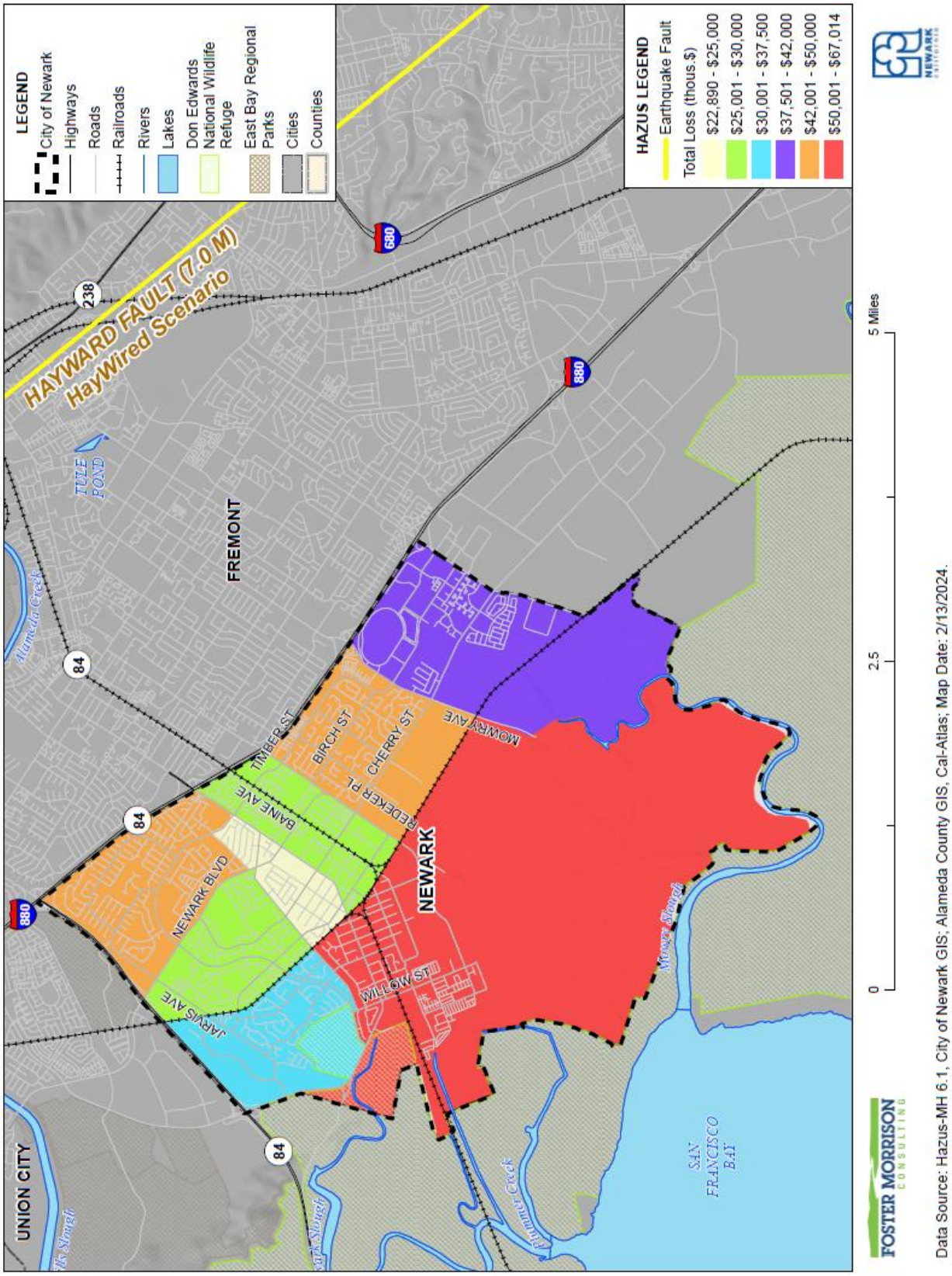
Figure B-53 Haywired (Hayward Fault) Scenario 7.0 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure B-54.

Figure B-54 Haywired (Hayward Fault) Scenario 7.0 Magnitude Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the Haywired (Hayward Fault) Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-55.
  - ✓ Population Exposure is shown on Figure B-56.
  - ✓ Value Exposure is shown on Figure B-57.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-58.
- Four maps were created for the 50 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-59.
  - ✓ Population Exposure is shown on Figure B-60.
  - ✓ Value Exposure is shown on Figure B-61.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-62.

Figure B-55 Haywired (Hayward Fault) Scenario 7.0 Magnitude Number of Ignitions (10 MPH Winds)

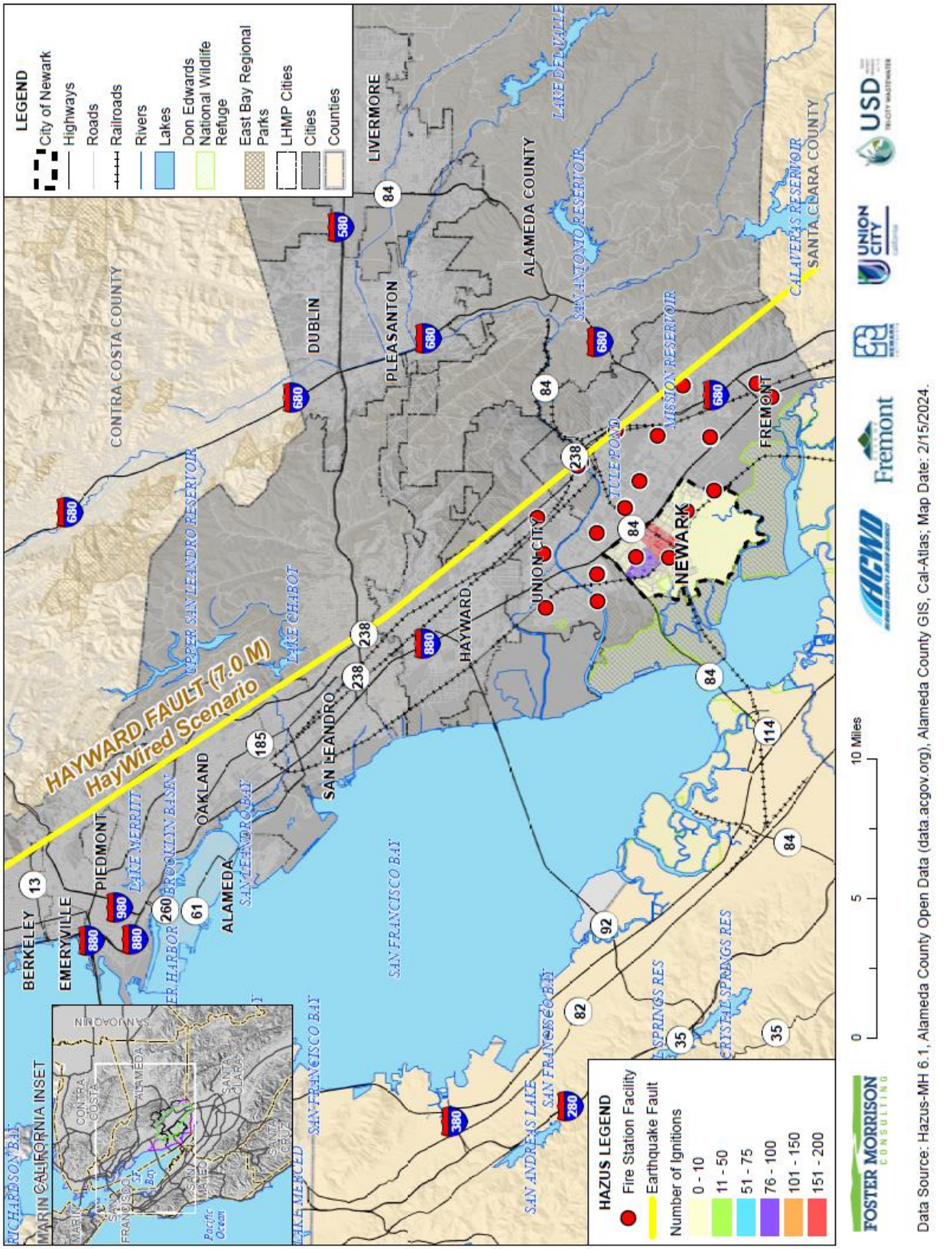


Figure B-56 Haywired (Hayward Fault) Scenario 7.0 Magnitude Population Exposure (10 MPH Winds)

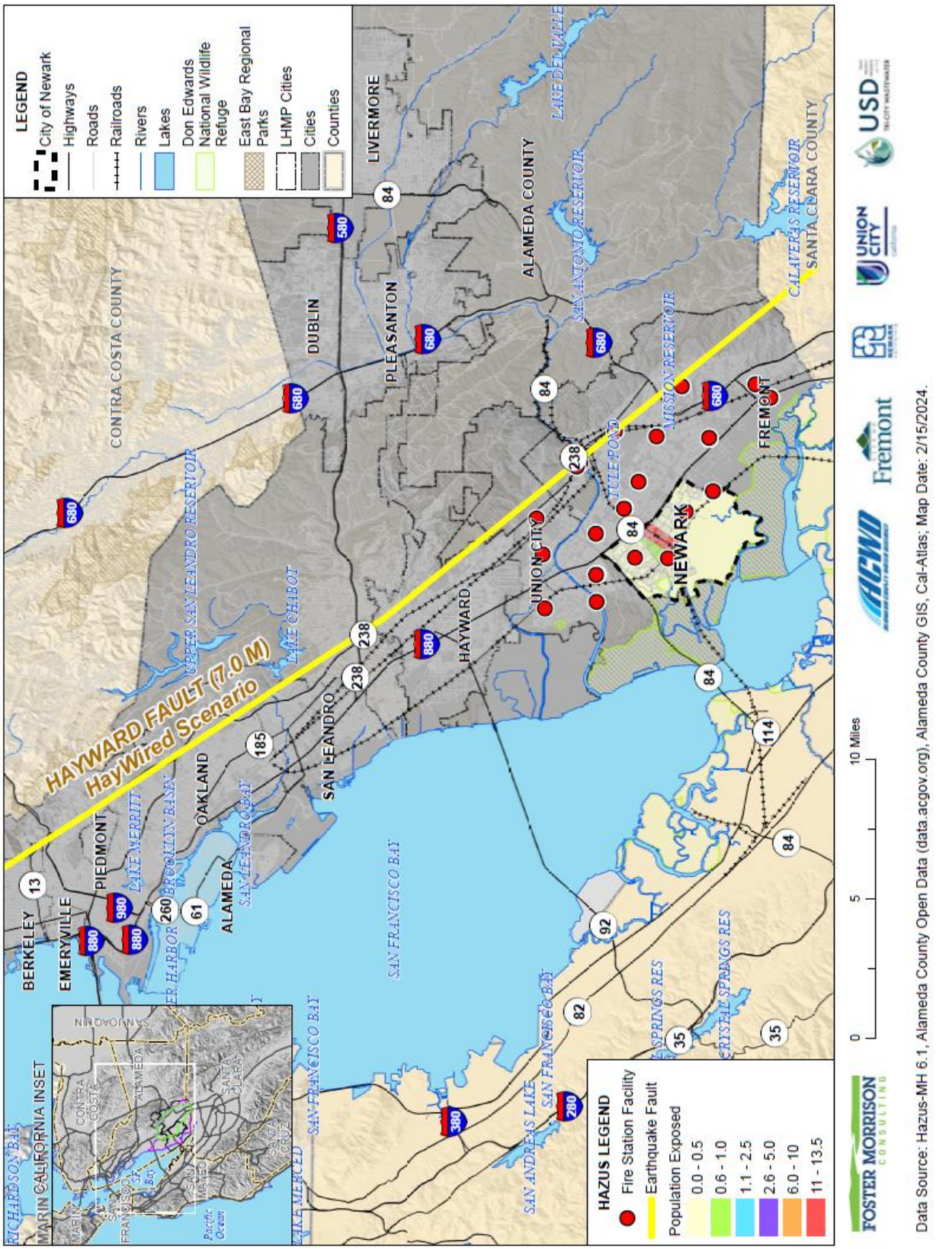


Figure B-57 Haywired (Hayward Fault) Scenario 7.0 Magnitude Exposed Values (10 MPH Winds)

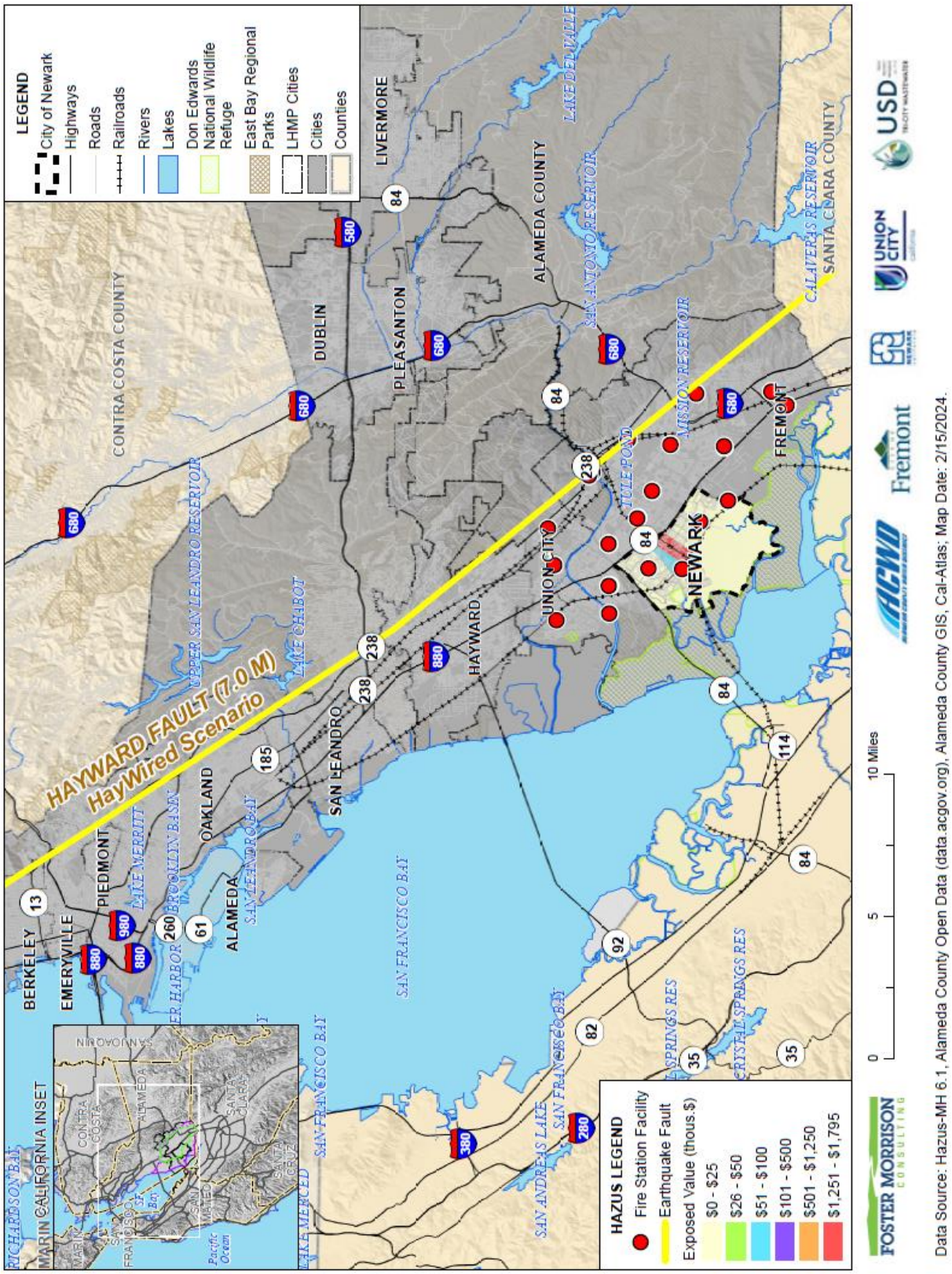


Figure B-58 Haywired (Hayward Fault) Scenario 7.0 Magnitude Fire Water Demand in GPM (10 MPH Winds)

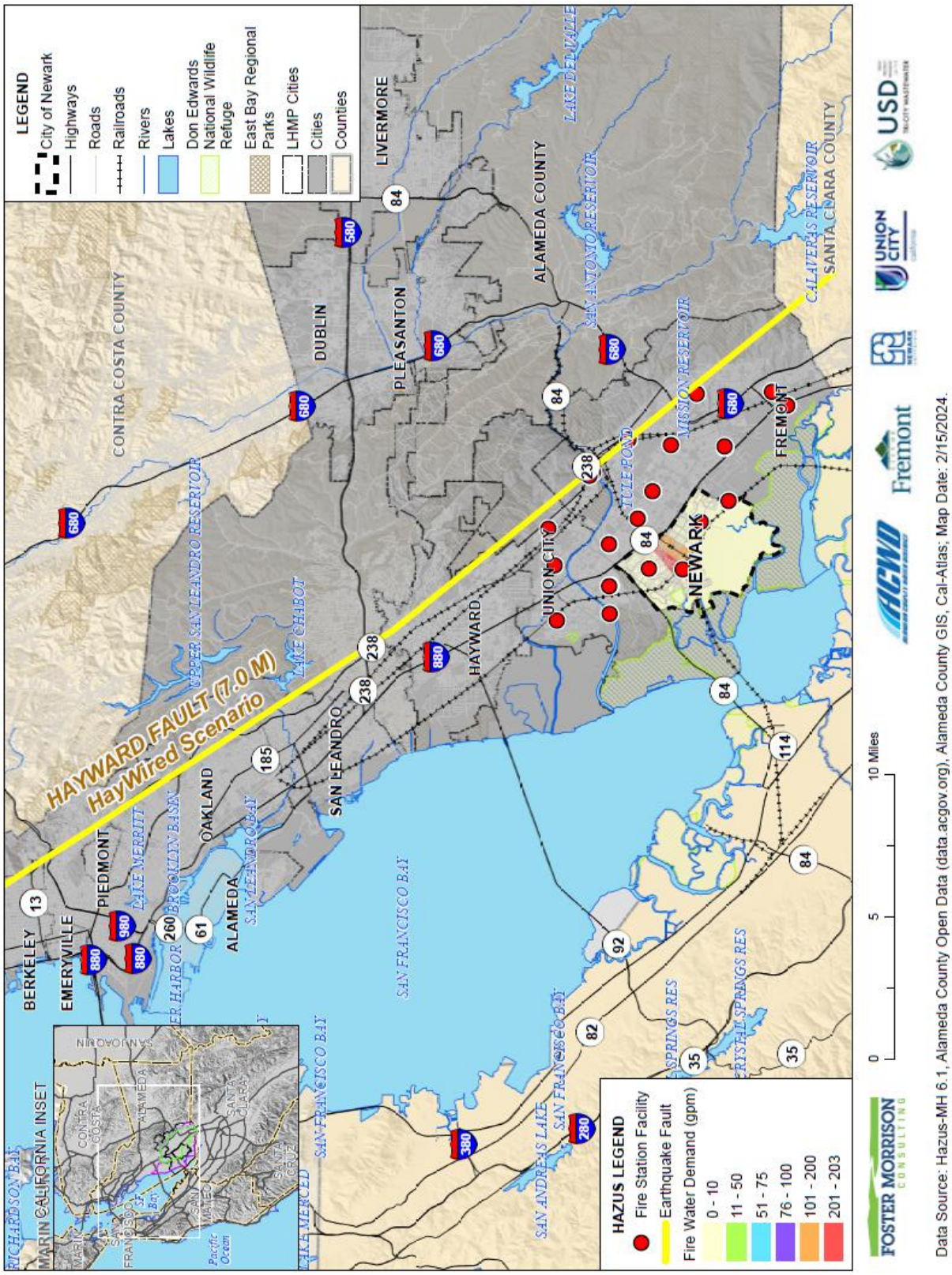


Figure B-59 Haywired (Hayward Fault) Scenario 7.0 Magnitude Number of Ignitions (50 MPH Winds)

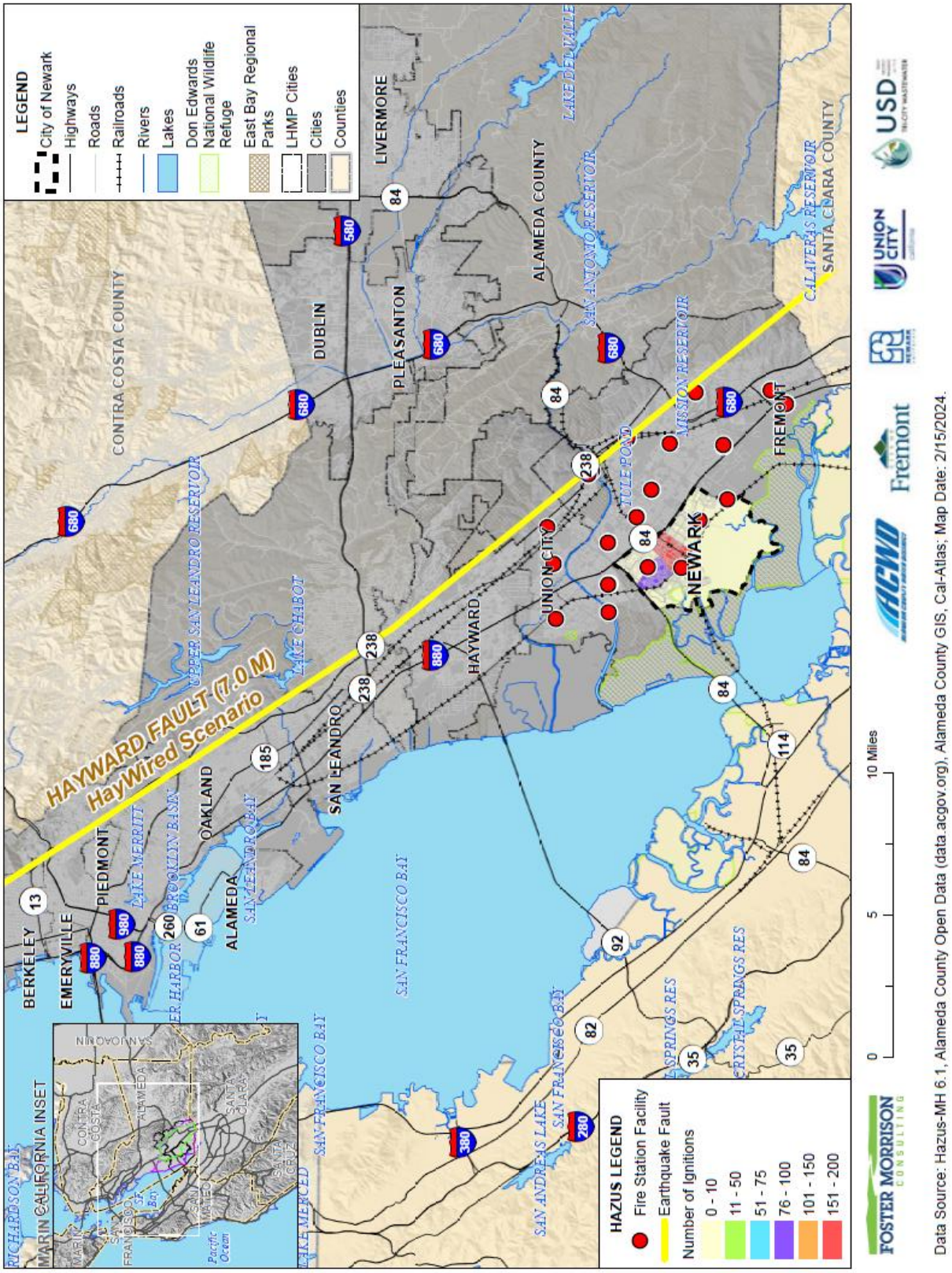


Figure B-60 Haywired (Hayward Fault) Scenario 7.0 Magnitude Population Exposure (50 MPH Winds)

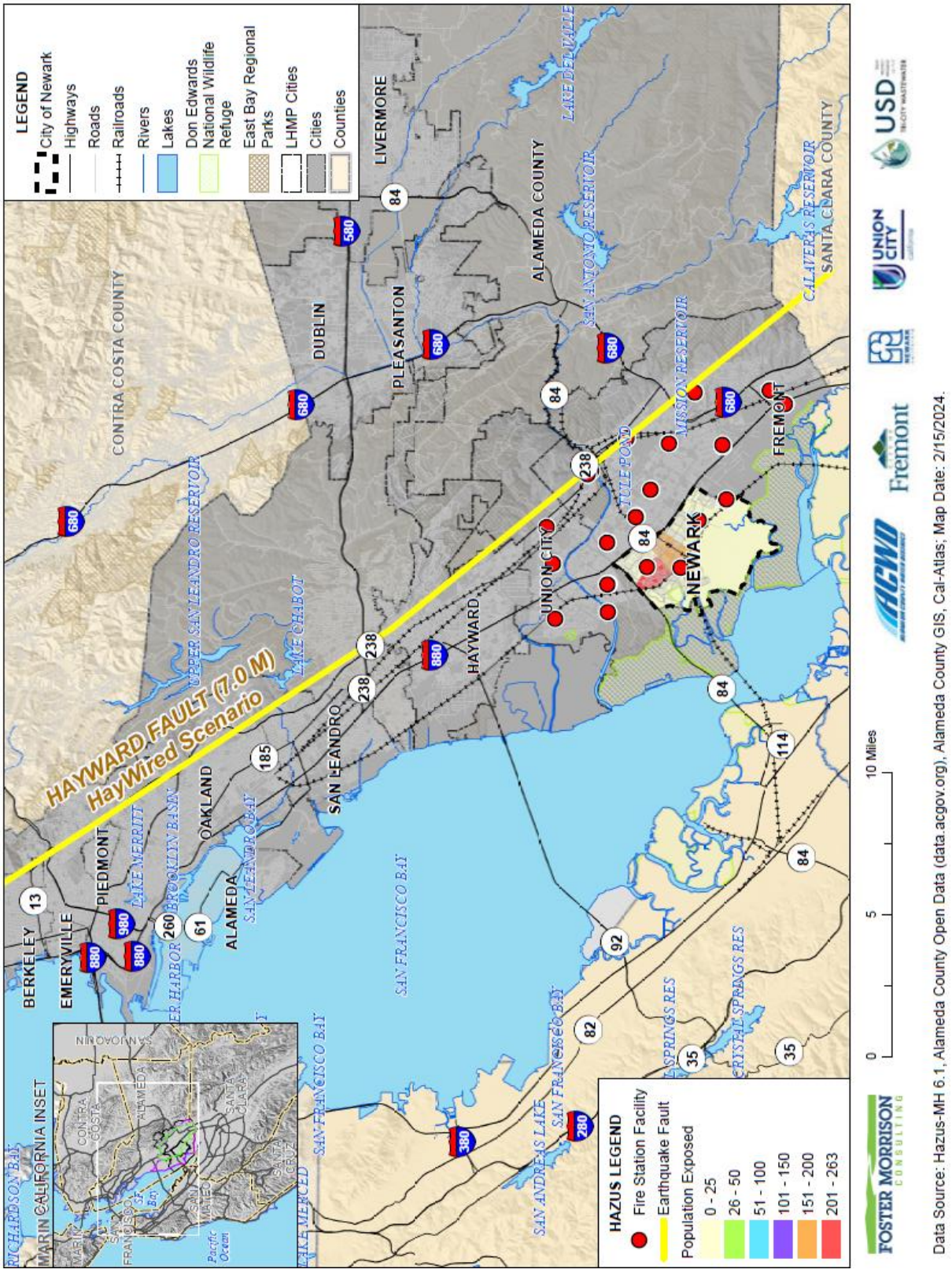


Figure B-61 Haywired (Hayward Fault) Scenario 7.0 Magnitude Exposed Values (50 MPH Winds)

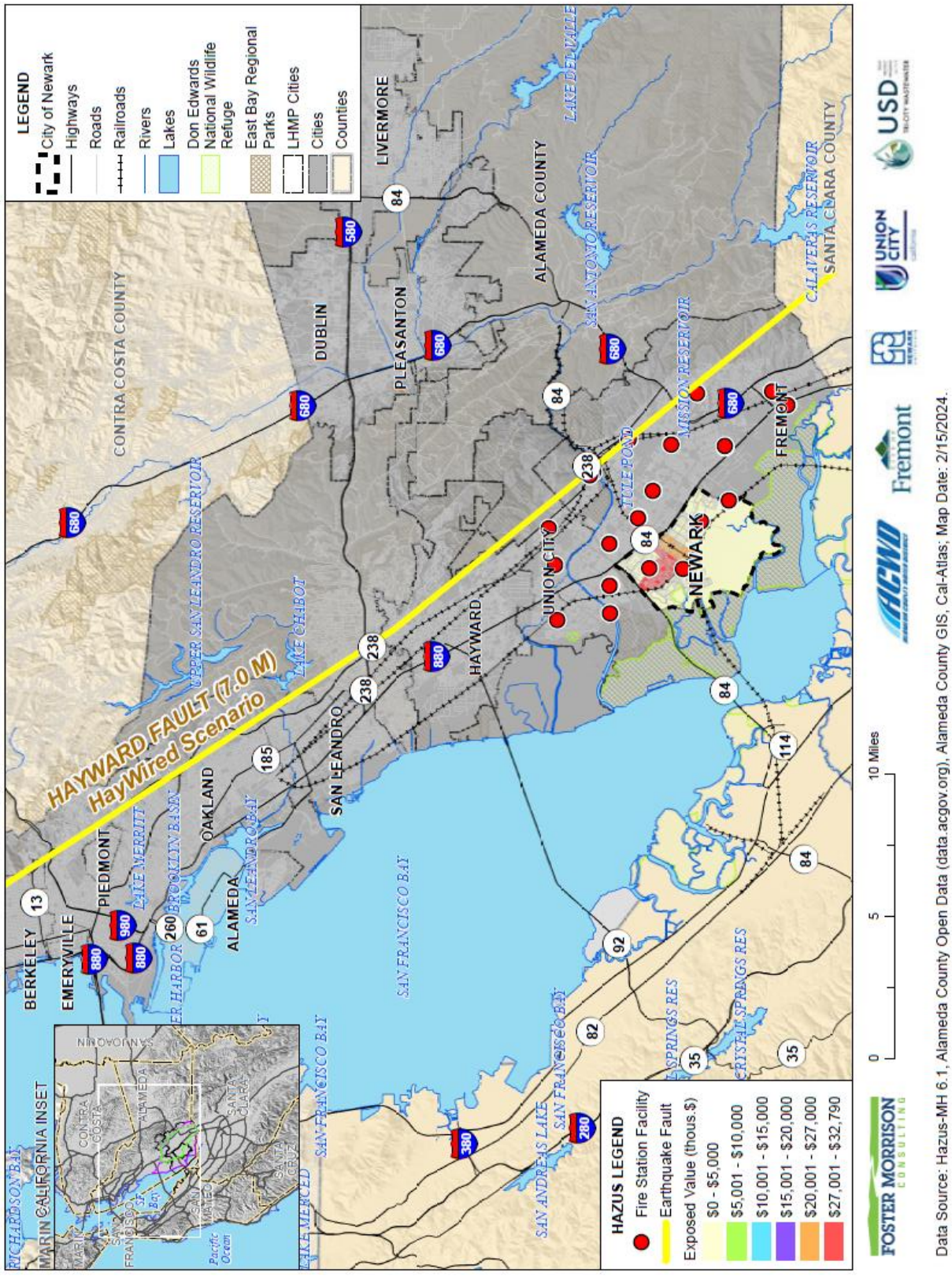
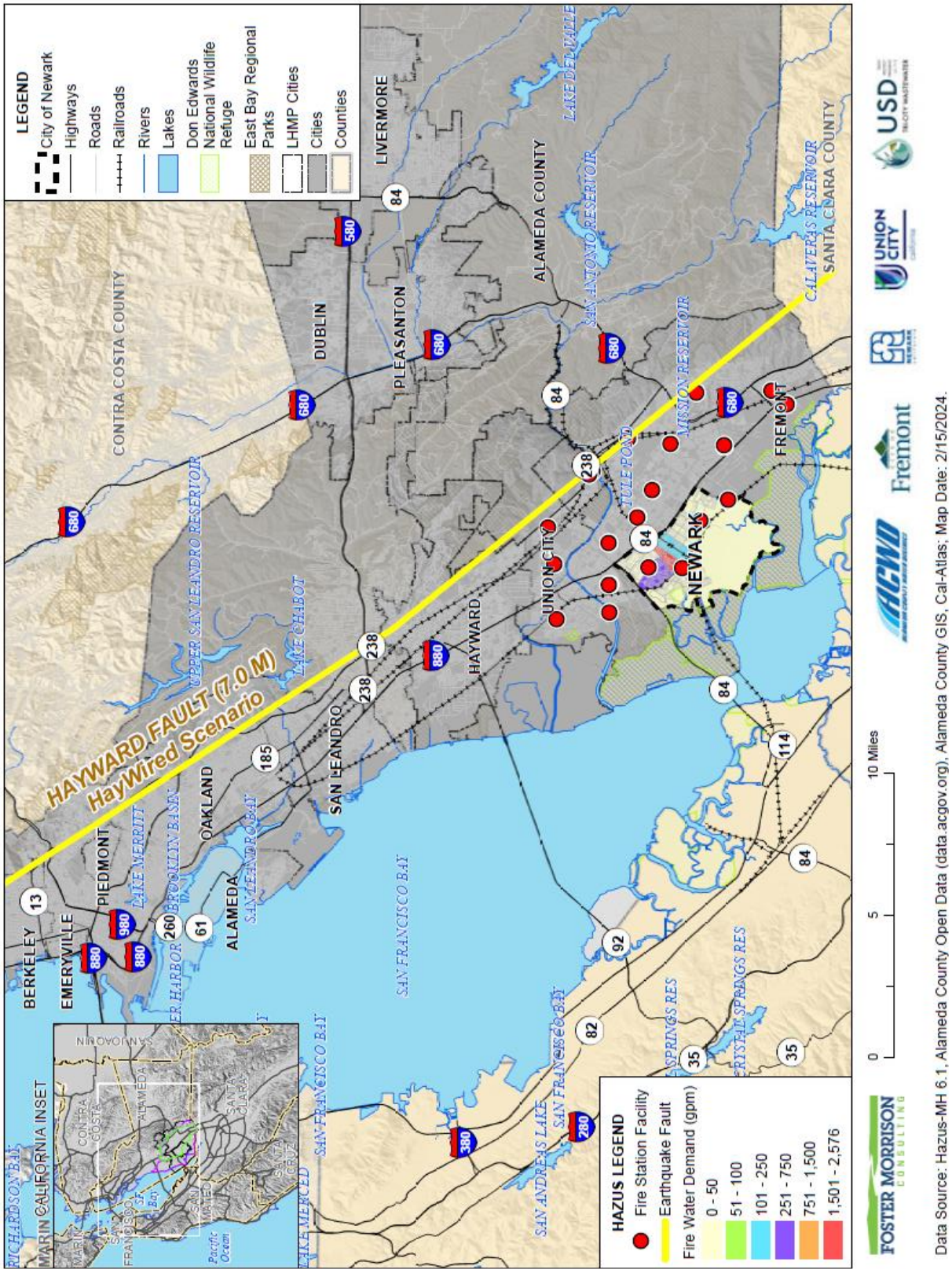


Figure B-62 Haywired (Hayward Fault) Scenario 7.0 Magnitude Fire Water Demand in GPM (50 MPH Winds)



San Andreas Fault Scenario (Epicenter: Bay Bridge; Magnitude: 8.04)

The Hazus results for the San Andreas Fault Hazus Scenario is summarized below in Table B-43. Appendix H includes the Earthquake Hazus Global Summary Risk Report for each Hazus defined study region where more detailed information can be obtained.

Table B-43 Tri-City Planning Area– San Andreas Fault HAZUS Earthquake Deterministic Results for 8.04 M Event

Type of Impact	Impacts to City from 7.9 Deterministic Earthquake	
Total Buildings Damaged (based on 14,000 buildings)	Slight: 3,977 Moderate: 959 Extensive: 259 Complete: 68	
Building and Income Related Losses	$604,370,000	
Total Economic Losses (Includes building, income and lifeline losses)	$640,180,000	
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 31 Requiring hospitalization: 5 Life threatening: 0 Fatalities: 1	
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 54 Requiring hospitalization: 12 Life threatening: 2 Fatalities: 3	
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 46 Requiring hospitalization: 15 Life threatening: 13 Fatalities: 4	
Damage to Transportation Systems	None with at least moderate damage	
Damage to Essential Facilities	None with at least moderate damage. 0 facilities with complete damage.	
Damage to Utility Systems	None with at least moderate damage. 103 potable water line breaks, 52 wastewater line breaks, and 4 natural gas line breaks.	
Households without Power/Water Service (Based on 14,946 total households)	Power loss, Day 1: 0 Power loss, Day 3: 0 Power loss, Day 7: 0 Power loss, Day 30: 0 Power loss, Day 90: 0	Water loss, Day 1: 13,529 Water loss, Day 3: 8,097 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	193 displaced households	
Shelter Requirements	95 persons	
Debris Generation	77,000 tons	

Hazus 6.1

Loss Estimates Highlights

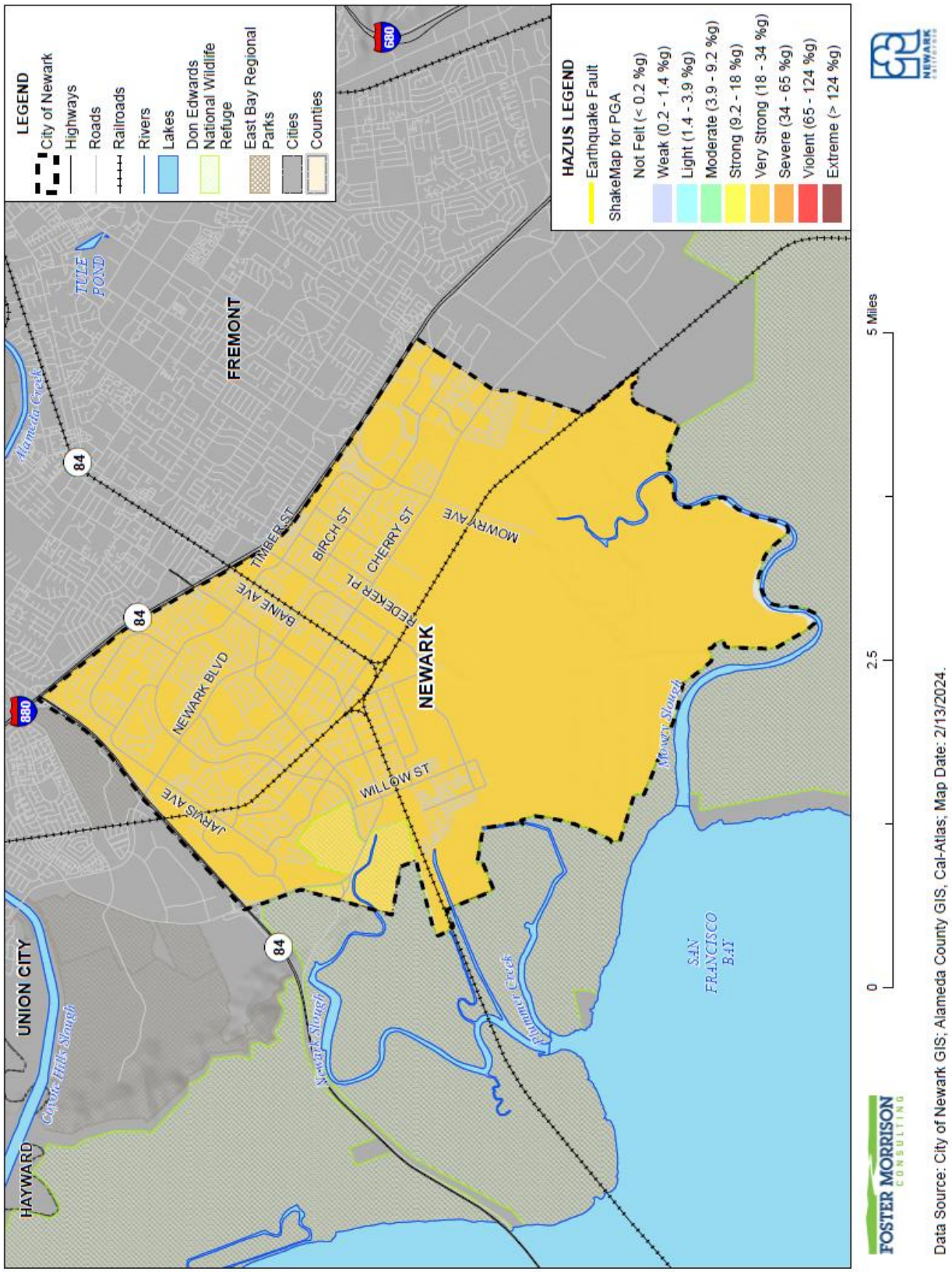
Hazus estimates that about 1,284 buildings will be at least moderately damaged. This is over 9.00 % of the buildings in the region. There are an estimated 67 buildings that will be damaged beyond repair.

The total building-related losses were 604.37 (millions of dollars); 11 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 40 % of the total loss.

Peak Ground Acceleration (Shaking)

Hazus evaluates the geographic distribution of ground shaking as a result of a specific earthquake scenario and expresses ground shaking using several quantitative parameters, including the peak ground acceleration. The peak ground acceleration map associated with this Hazus scenario can be seen on Figure B-63.

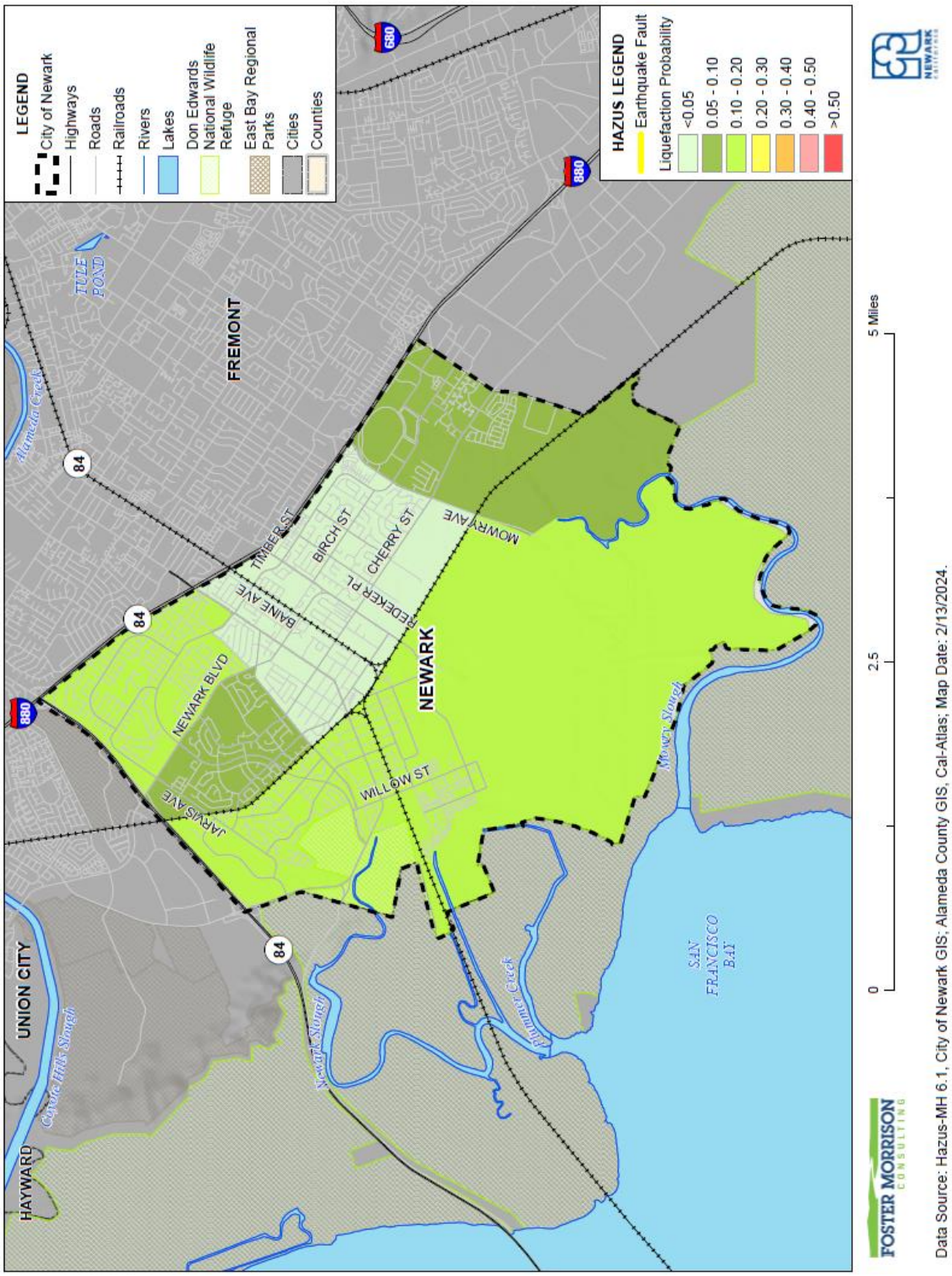
Figure B-63 San Andreas Fault – 8.04 Magnitude Peak Ground Acceleration



Liquefaction

Liquefaction occurs when loose, water-saturated soils are shaken strongly and causes sudden loss of strength and stiffness in soils. This shaking can lead to settlement and horizontal movements of the ground. The liquefaction probability associated with this Hazus scenario can be seen on Figure B-64.

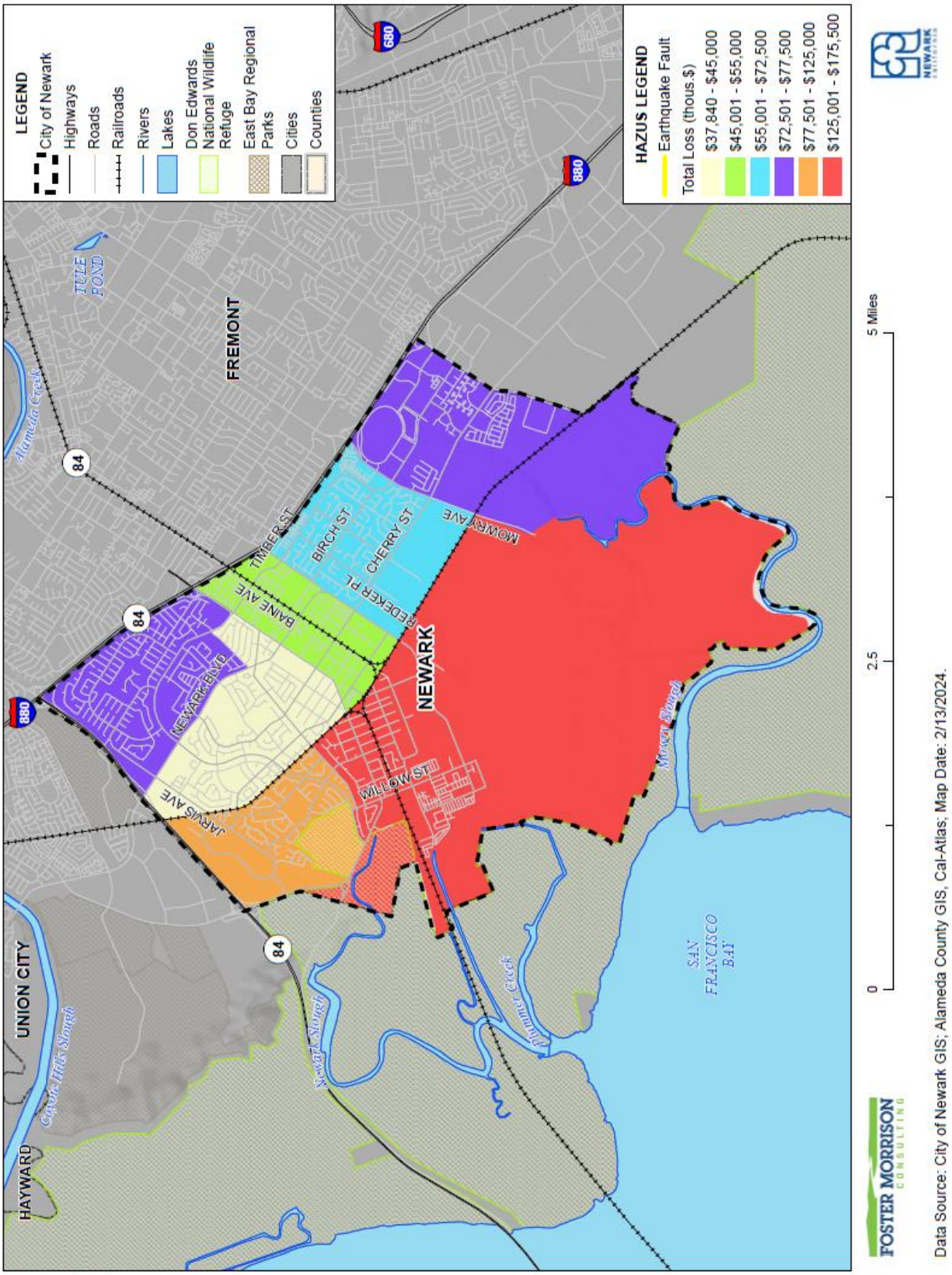
Figure B-64 San Andreas Fault 8.04 Magnitude Liquefaction Probability



Total Loss Estimates

For each study region, information on loss estimates is provided based on that study region's earthquake risk and general building stock value, which includes building and lifeline related losses on the study region's available inventory. The total loss estimates associated with this scenario can be seen on Figure B-65.

Figure B-65 San Andreas Fault 8.04 Total Loss



Fire Following Earthquake

As detailed in the above methodology, two iterations of the Fire Following Earthquake were conducted for each primary Hazus Scenario. The results for the two iterations for the San Andreas Scenario are included below.

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area.

- Four maps were created for the 10 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-66.
  - ✓ Population Exposure is shown on Figure B-67.
  - ✓ Value Exposure is shown on Figure B-68.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-69.
- Four maps were created for the 50 mph scenario:
  - ✓ Number of Ignitions is shown on Figure B-70.
  - ✓ Population Exposure is shown on Figure B-71.
  - ✓ Value Exposure is shown on Figure B-72.
  - ✓ Fire Water Demand (gpm) is shown on Figure B-73.

Figure B-66 San Andreas Fault 8.04 Magnitude Number of Ignitions (10 MPH Winds)

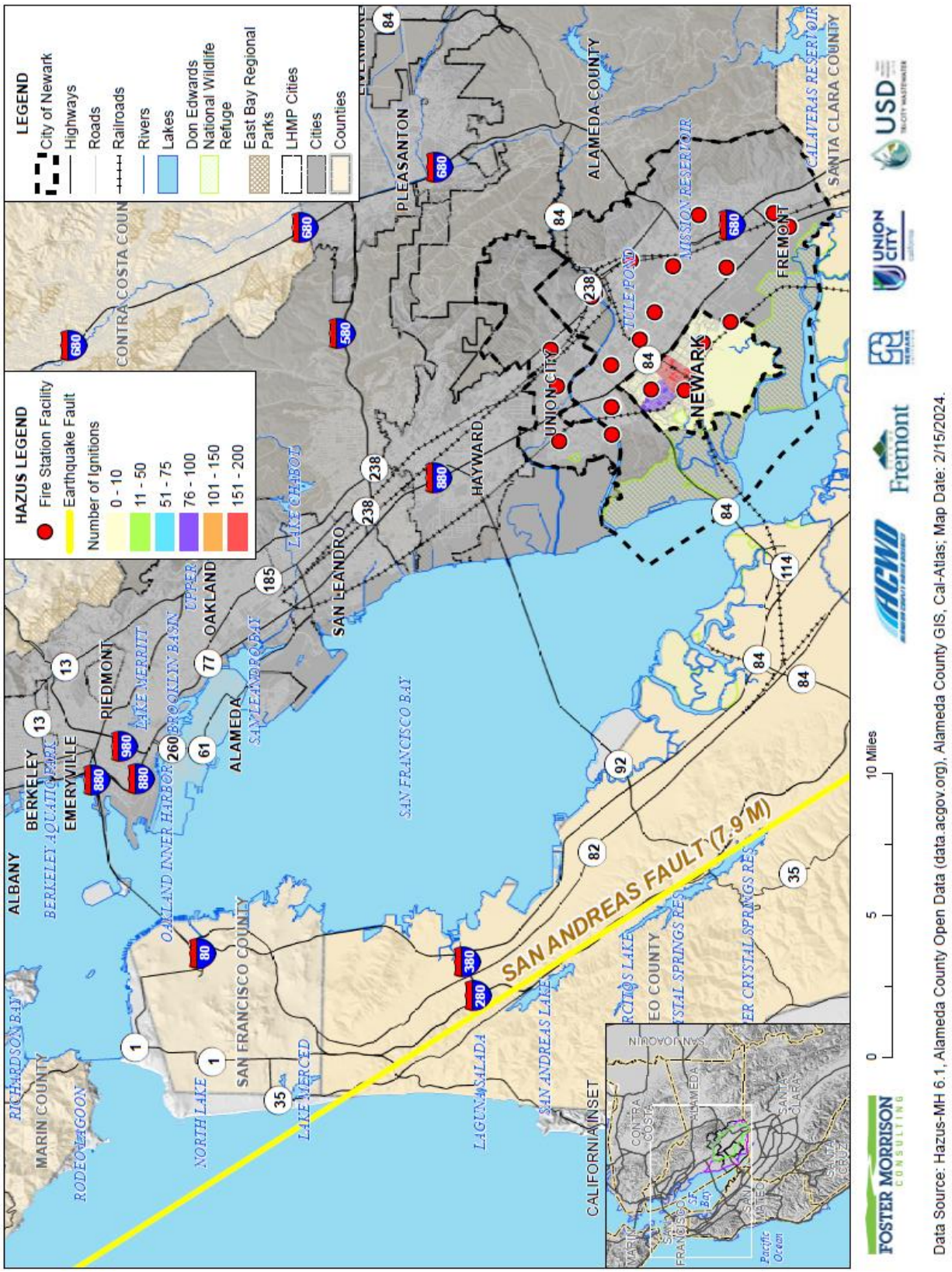


Figure B-67 San Andreas Fault 8.04 Magnitude Population Exposure (10 MPH Winds)

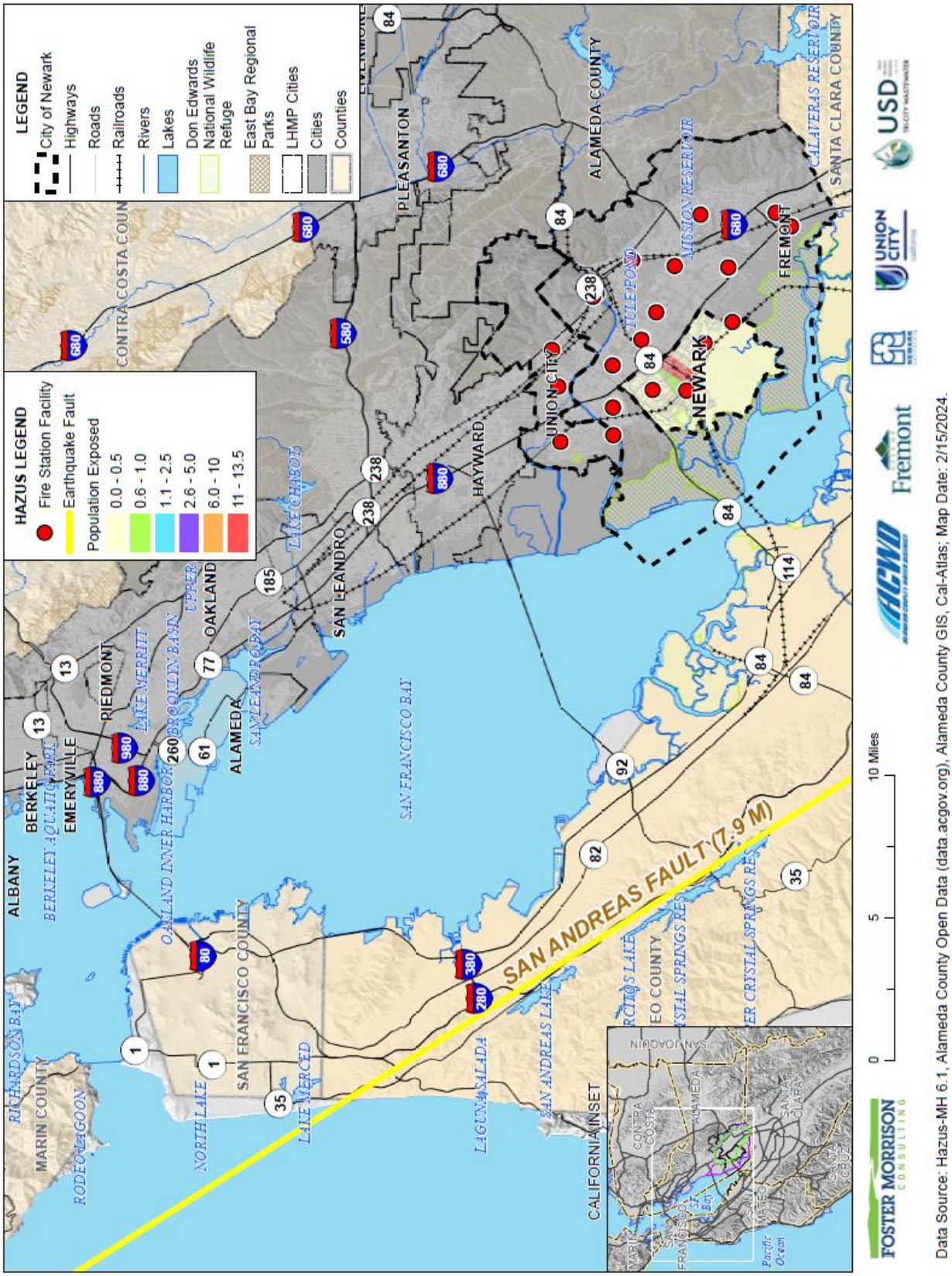


Figure B-68 San Andreas Fault 8.04 Magnitude Exposed Values (10 MPH Winds)

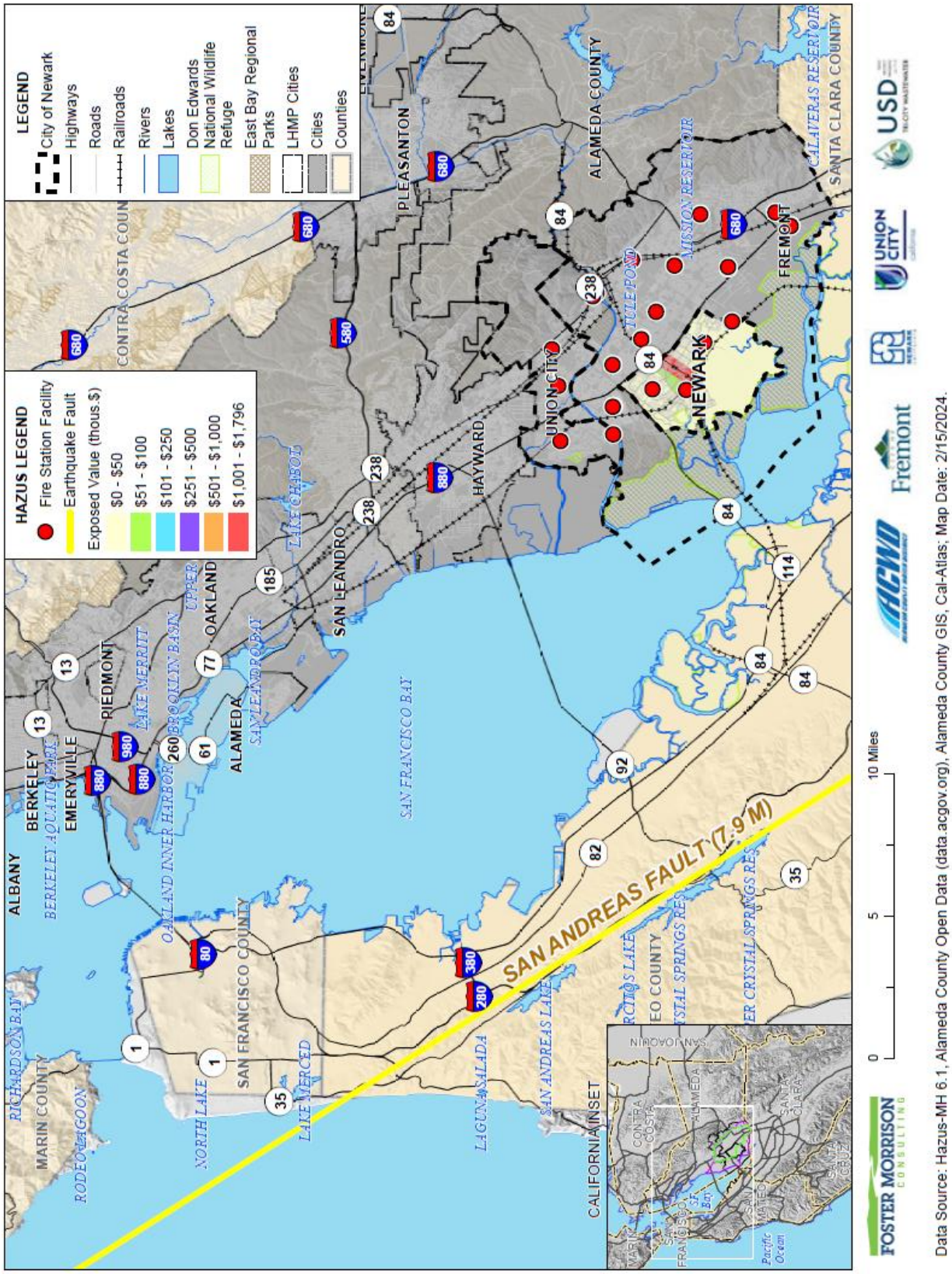


Figure B-69 San Andreas Fault 8.04 Magnitude Fire Water Demand in GPM (10 MPH Winds)

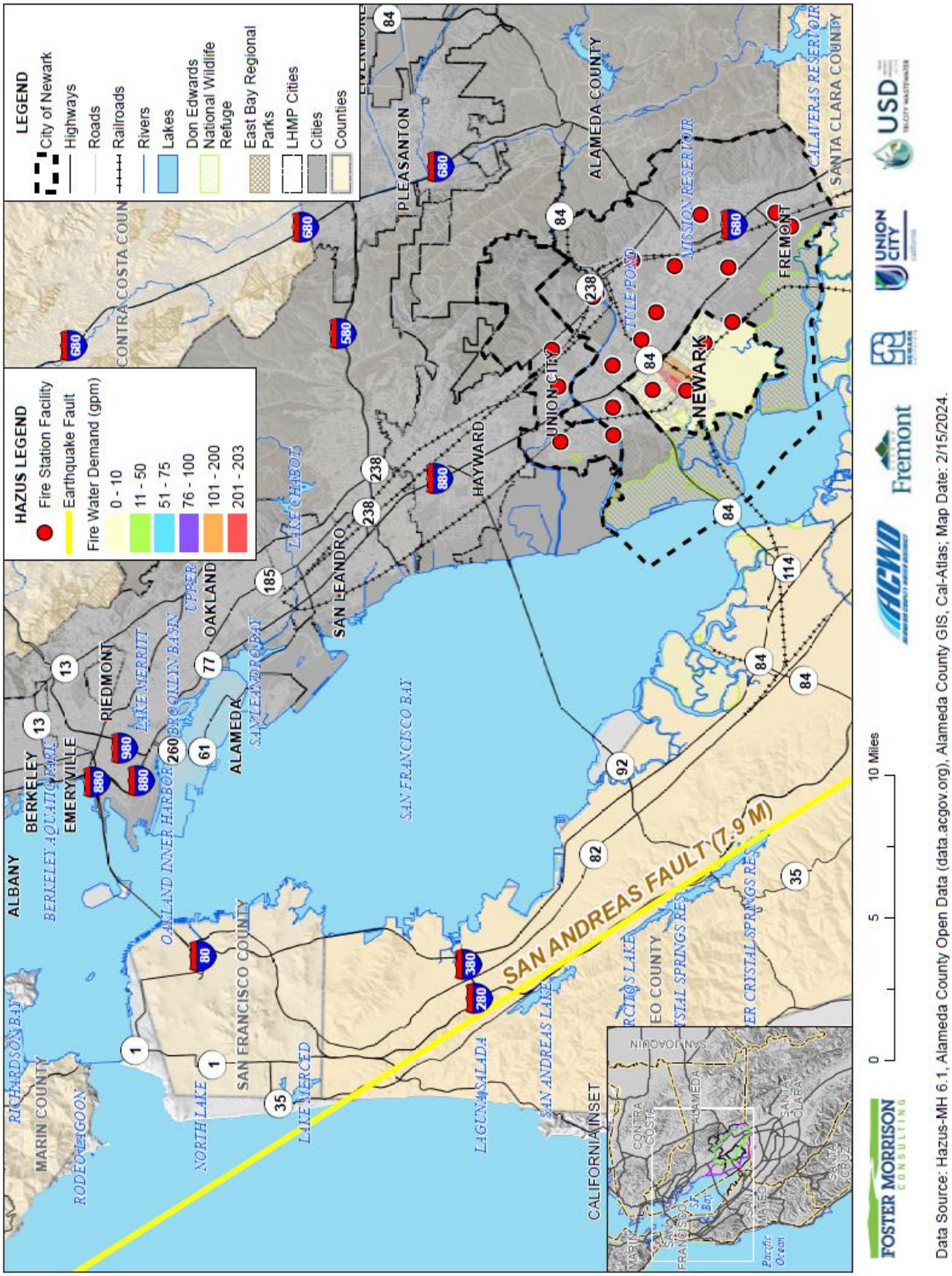


Figure B-70 San Andreas Fault 8.04 Magnitude Number of Ignitions (50 MPH Winds)

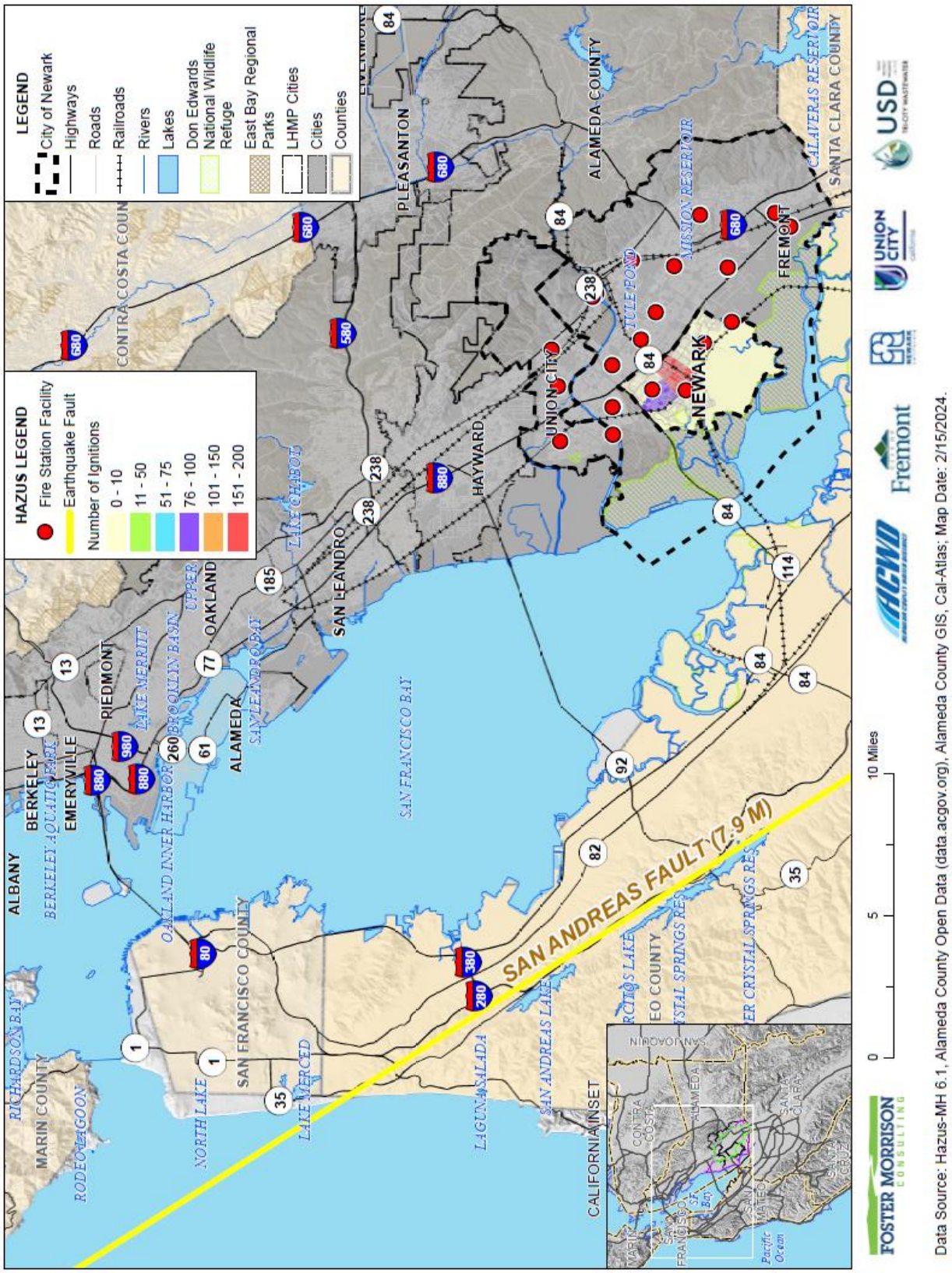


Figure B-71 San Andreas Fault 8.04 Magnitude Population Exposure (50 MPH Winds)

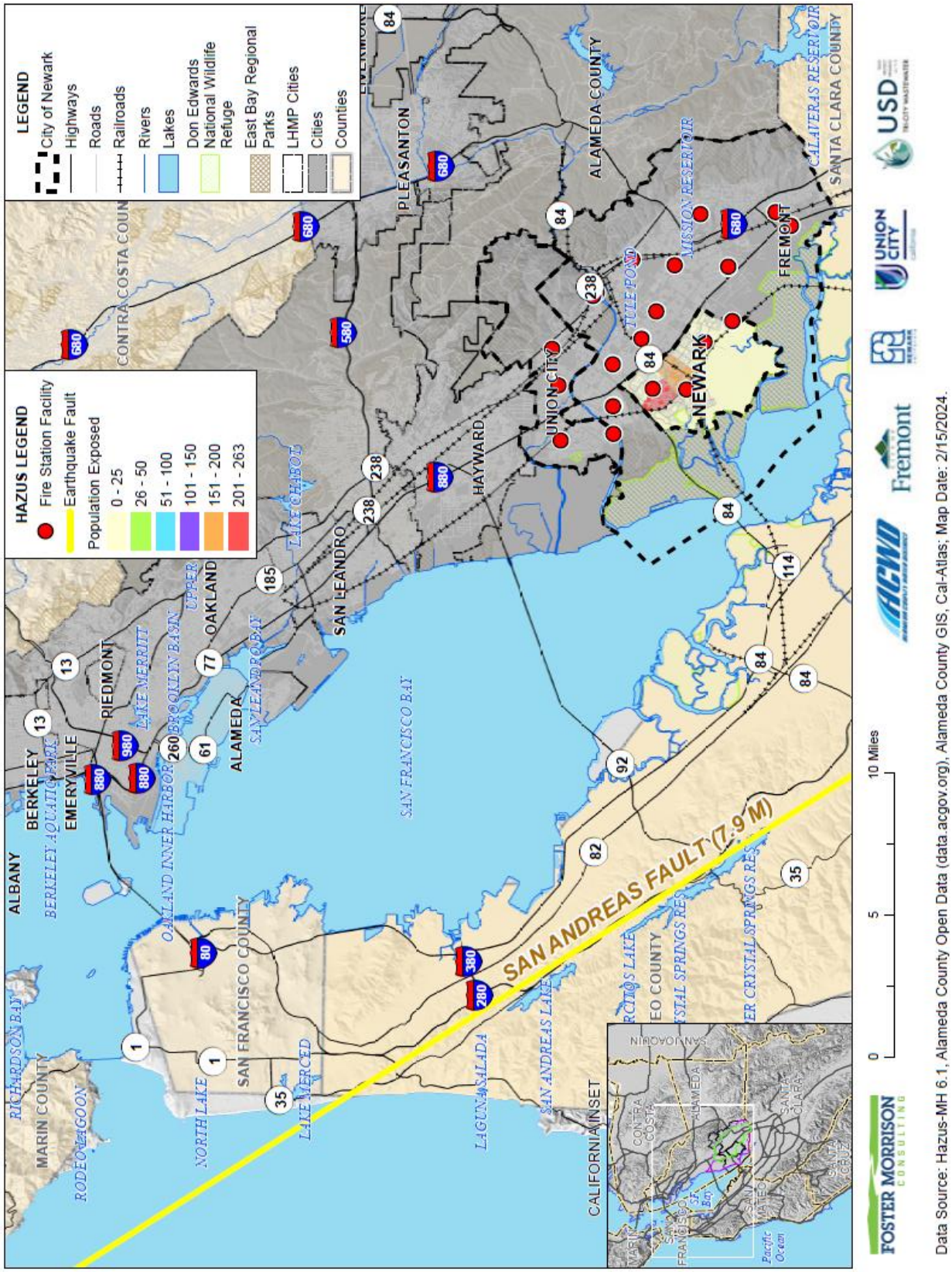


Figure B-72 San Andreas Fault 8.04 Magnitude Exposed Values (50 MPH Winds)

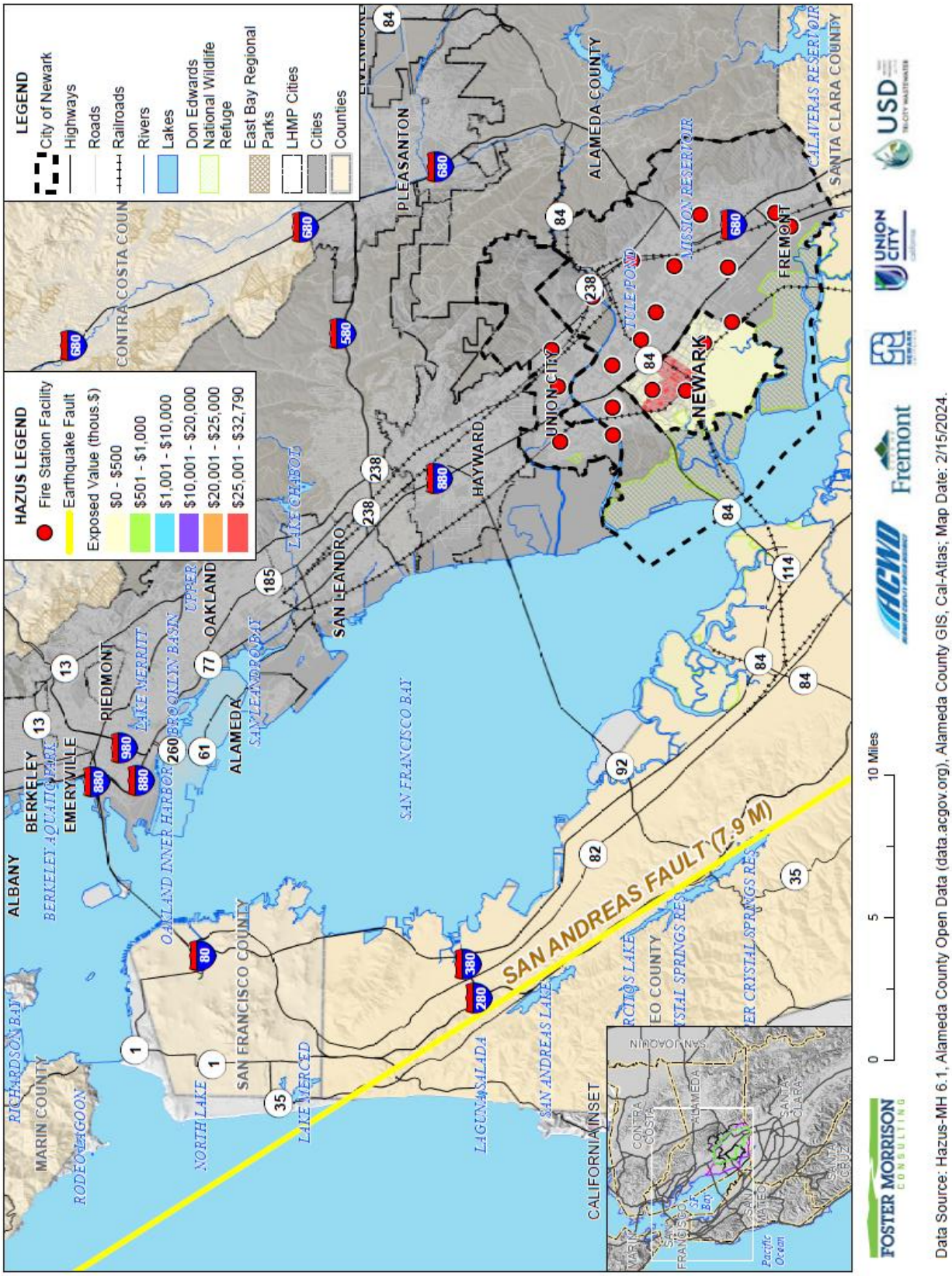


Figure B-73 San Andreas Fault 8.04 Magnitude Fire Water Demand in GPM (50 MPH Winds)

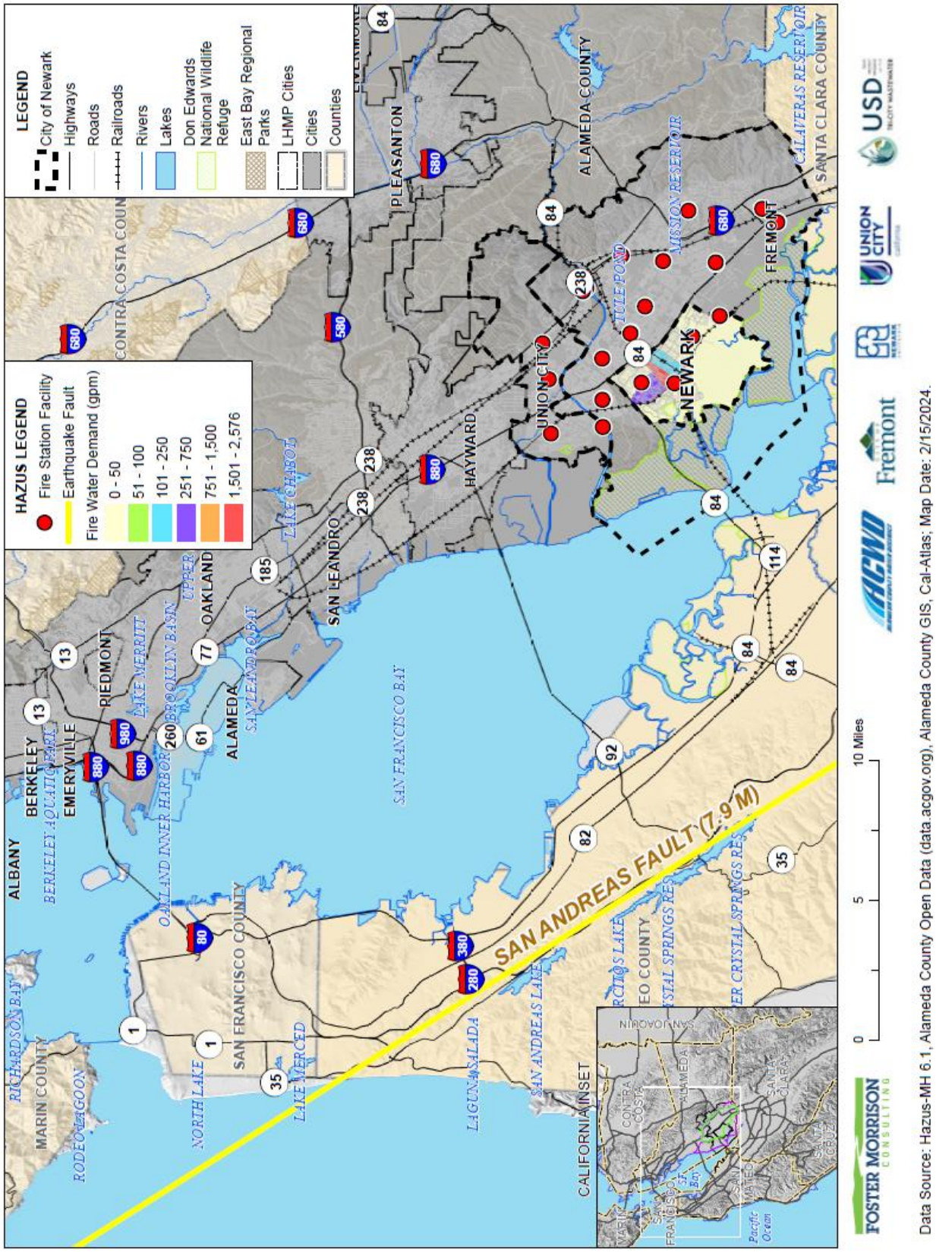


Table B-44 City of Newark – HAZUS-MH Earthquake Loss Estimation Scenario Comparison

Type of Impact	Calaveras Fault (CN+CC+CS+CE) Impacts to City from 7.43 Deterministic Earthquake	Hayward and Rodgers Creek Fault (RC+HN+HS) Impacts to City from 7.57 Deterministic Earthquake	Hayward Fault Haywired (HN+HS) Impacts to City from 7.0 Deterministic Earthquake	San Andreas Fault (SAO+SAN+SAP+SAS) Impacts to City from 8.04 Deterministic Earthquake
Total Buildings Damaged (based on 14,000 buildings)	Slight: 4,426 Moderate: 1,166 Extensive: 235 Complete: 55	Slight: 5,607 Moderate: 2,689 Extensive: 981 Complete: 285	Slight: 3,368 Moderate: 683 Extensive: 74 Complete: 15	Slight: 3,977 Moderate: 959 Extensive: 259 Complete: 68
Building and Income Related Losses	$601,240,000	$1,688,210,000	$311,810,000	$604,370,000
Total Economic Losses (Includes building, income and lifeline losses)	$657,320,000	$1,938,420,000	$325,900,000	$640,180,000
Casualties (Based on 2 a.m. time of occurrence)	Without requiring hospitalization: 30 Requiring hospitalization: 4 Life threatening: 0 Fatalities: 0	Without requiring hospitalization: 101 Requiring hospitalization: 18 Life threatening: 1 Fatalities: 2	Without requiring hospitalization: 14 Requiring hospitalization: 1 Life threatening: 0 Fatalities: 0	Without requiring hospitalization: 31 Requiring hospitalization: 5 Life threatening: 0 Fatalities: 1
Casualties (Based on 2 p.m. time of occurrence)	Without requiring hospitalization: 43 Requiring hospitalization: 8 Life threatening: 2 Fatalities: 2	Without requiring hospitalization: 195 Requiring hospitalization: 50 Life threatening: 8 Fatalities: 14	Without requiring hospitalization: 19 Requiring hospitalization: 3 Life threatening:1 Fatalities: 1	Without requiring hospitalization: 54 Requiring hospitalization: 12 Life threatening: 2 Fatalities: 3
Casualties (Based on 5 p.m. time of occurrence)	Without requiring hospitalization: 38 Requiring hospitalization: 12 Life threatening: 13 Fatalities: 4	Without requiring hospitalization: 153 Requiring hospitalization: 47 Life threatening: 26 Fatalities: 13	Without requiring hospitalization: 20 Requiring hospitalization: 8 Life threatening: 11 Fatalities: 2	Without requiring hospitalization: 46 Requiring hospitalization: 15 Life threatening: 13 Fatalities: 4
Damage to Transportation Systems	None with at least moderate damage	None with at least moderate damage	None with at least moderate damage	None with at least moderate damage
Damage to Essential Facilities	None with at least moderate damage. 0 facilities with complete damage.	11 schools and 1 fire station with at least moderate damage. 4 school facilities with complete damage.	None with at least moderate damage. 0 facilities with complete damage.	None with at least moderate damage. 0 facilities with complete damage.

Type of Impact	Calaveras Fault (CN+CC+CS+CE) Impacts to City from 7.43 Deterministic Earthquake		Hayward and Rodgers Creek Fault (RC+HN+HS) Impacts to City from 7.57 Deterministic Earthquake		Hayward Fault Haywired (HN+HS) Impacts to City from 7.0 Deterministic Earthquake		San Andreas Fault (SAO+SAN+SAP+SAS) Impacts to City from 8.04 Deterministic Earthquake	
Damage to Utility Systems	None with at least moderate damage. 99 potable water line breaks, 50 wastewater line breaks, and 4 natural gas line breaks.		None with at least moderate damage. None with complete damage. 231 potable water line breaks, 116 wastewater line breaks, and 11 natural gas line breaks.		None with at least moderate damage. 42 potable water line breaks, 21 wastewater line breaks, and 3 natural gas line breaks.		None with at least moderate damage. 103 potable water line breaks, 52 wastewater line breaks, and 4 natural gas line breaks.	
Households without Power/Water Service (Based on 14,946 total households)	Power loss, Day 1: 13,365 Power loss, Day 3: 7,006 Power loss, Day 7: 149 Power loss, Day 30: 8 Power loss, Day 90: 2	Water loss, Day 1: 13,365 Water loss, Day 3: 7,006 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0	Power loss, Day 1: 12,078 Power loss, Day 3: 8,556 Power loss, Day 7: 14,029 Power loss, Day 30: 454 Power loss, Day 90: 15	Water loss, Day 1: 14,839 Water loss, Day 3: 14,696 Water loss, Day 7: 12,279 Water loss, Day 30: 0 Water loss, Day 90: 0	Power loss, Day 1: 4,610 Power loss, Day 3: 0 Power loss, Day 7: 0 Power loss, Day 30: 0 Power loss, Day 90: 0	Water loss, Day 1: 0 Water loss, Day 3: 0 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0	Power loss, Day 1: 0 Power loss, Day 3: 0 Power loss, Day 7: 0 Power loss, Day 30: 0 Power loss, Day 90: 0	Water loss, Day 1: 13,529 Water loss, Day 3: 8,097 Water loss, Day 7: 0 Water loss, Day 30: 0 Water loss, Day 90: 0
Displaced Households	166 displaced households		773 displaced households		53 displaced households		193 displaced households	
Shelter Requirements	82 persons		384 persons		26 persons		95 persons	
Debris Generation	64,000 tons		238,000 tons		30,000 tons		77,000 tons	

Impacts from Earthquake (and its subhazards)

Earthquakes can strike without warning and cause dramatic changes to the landscape of an area that can have devastating impacts on the built environment. The greatest impact is to life safety of Newark residents and visitors. Other impacts to the City would include damages to infrastructure such as roads, bridges, and dams; damages and loss of services to utilities and critical infrastructure, including those related to gas, power, water, wastewater and communication systems; damages to structures and other development; and possible loss of life and injuries.

Earthquakes can also cause failure of dams, levees, and reservoirs. Facilities and land downslope from dams or water reservoirs or behind levees might be subject to flooding, if the dams, reservoirs, or levees fail as a result of an earthquake. The City has locations with significant flood risk that include facilities downslope from dams or reservoirs or behind levees.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

These losses may be worsened in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is not expected anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years,these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations. Since earthquake would affect the whole of the City, if these population patterns continue to show an increase in vulnerable populations, the vulnerability and potential impacts to City assets from earthquake may continue to increase in the future.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. If a large earthquake impacts the City, there is potential that all area (developed and undeveloped) in the City would be at risk. Future development that continues to occur in the City will increase possible impacts. However, the City has a development review process which includes the consideration of hazard constraints (like earthquake and its subhazards) and updated building codes that should further limit the impacts of these hazards on City assets.

A large nearby earthquake can also increase the probability of secondary earthquake hazards affecting the City, including a surface fault rupture, liquefaction, landslides, and fire following earthquakes. These cascading events compound the impacts to the City during an earthquake.

Surface Fault Rupture

When a fault rupture extends to the earth's surface, the displacement can catastrophically damage structures or utilities. Fissuring, settlement, and permanent horizontal and vertical ground shifting often accompany large earthquakes. Such ground failures can significantly increase damage and may be a contributing cause of damage. Studies after the 1994 Northridge Earthquake showed that when ground failure was involved, damage to residential dwellings was three to four times greater than average shake damage. Because of their geographic extent and their tendency to be buried, networked infrastructures such as water, power, communication, and transportation lines are particularly vulnerable to ground failures.

Fault rupture itself contributes very little to damage unless the structure or system element crosses the active fault. In general, newer construction is more earthquake resistant than older construction due to enforcement of improved building codes. Manufactured housing is very susceptible to damage because their foundation systems are rarely braced for earthquake motions. Locally generated earthquake motions and associated liquefaction, even from very moderate events, tend to be more damaging to smaller buildings, especially those constructed of URM and soft story buildings.

Earthquake Liquefaction

Ground settlement during liquefaction can cause damage when the amount of settlement varies significantly across the length of a structure. Liquefaction can occur in susceptible soils below bodies of water and can severely damage bridges, wharves, piers, and other structures at ports and harbors, as well as underwater utility lines.

Earthquake-Induced Landslides

Landslides caused by earthquakes can be widespread over the area of highest shaking intensity and also at greater distances if hillsides are in a susceptible condition. Earthquake landslides can significantly damage structures and transportation and utility lifelines. No areas of the City are expected to be impacted by this.

Fire Following Earthquake

Fires after earthquakes may severely strain fire departments that must respond to multiple simultaneous ignitions. Impaired communications, water supply, transportation, and other demands such as structural collapses, hazardous materials releases, or medical emergencies affect fire department response. A few characteristics can make specific facilities more vulnerable to fire following earthquake. If a building collapses, there is a high risk for gas or electrical lines to start "seed" fires that then impact undamaged neighboring structures or start wildfires. Areas of liquefaction, fault rupture, and landslide are more vulnerable to fire. There is a greater potential for underground gas mains to break due to ground displacements, and water lines in the area might also be damaged, which could prevent the ability to fight a fire with regular water resources. Areas that are largely built with wood frames or shingle roofs might be less prone to earthquake damage but are at a heightened risk for the spread of fires.

Future Development

The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The City of Newark is within the more hazardous Zone 4.

Although new growth and development corridors would fall in the area affected by earthquake, given the small chance of major earthquake and the building codes in effect, development in areas prone to earthquakes will continue to occur. The City enforces the state building code, which mandates construction techniques that minimize seismic hazards. Future development in the City is subject to these building codes.

Future development areas and their vulnerability to earthquake liquefaction and earthquake-induced landslides hazards are discussed further in the below GIS analysis. Future development and earthquake shaking is not included, as the Hazus earthquake module only analyzes the existing built environment, and not future development.

GIS Analysis

Earthquake Liquefaction

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure B-74 show the locations of the future development areas overlayed on the USGS/CGS Earthquake Liquefaction Susceptibility zones. Table B-45 shows the counts of each future development area in the City in the moderate or higher liquefaction zones. It should be noted that 27 of the 28 future development properties fall into the moderate or higher liquefaction zones. This was also noted in the 2023-2031 Housing Element in a discussion on development constraints. The City has a sandy loam soil type that is prone to liquefaction. The City of Newark could experience seismic shaking levels with the potential to cause liquefaction in areas where groundwater is generally shallower than 30 feet. Based on data provided by the California Geological Survey, the entire city is considered a liquefaction hazard zone.

Figure B-74 City of Newark – Future Development in Earthquake Liquefaction Zones

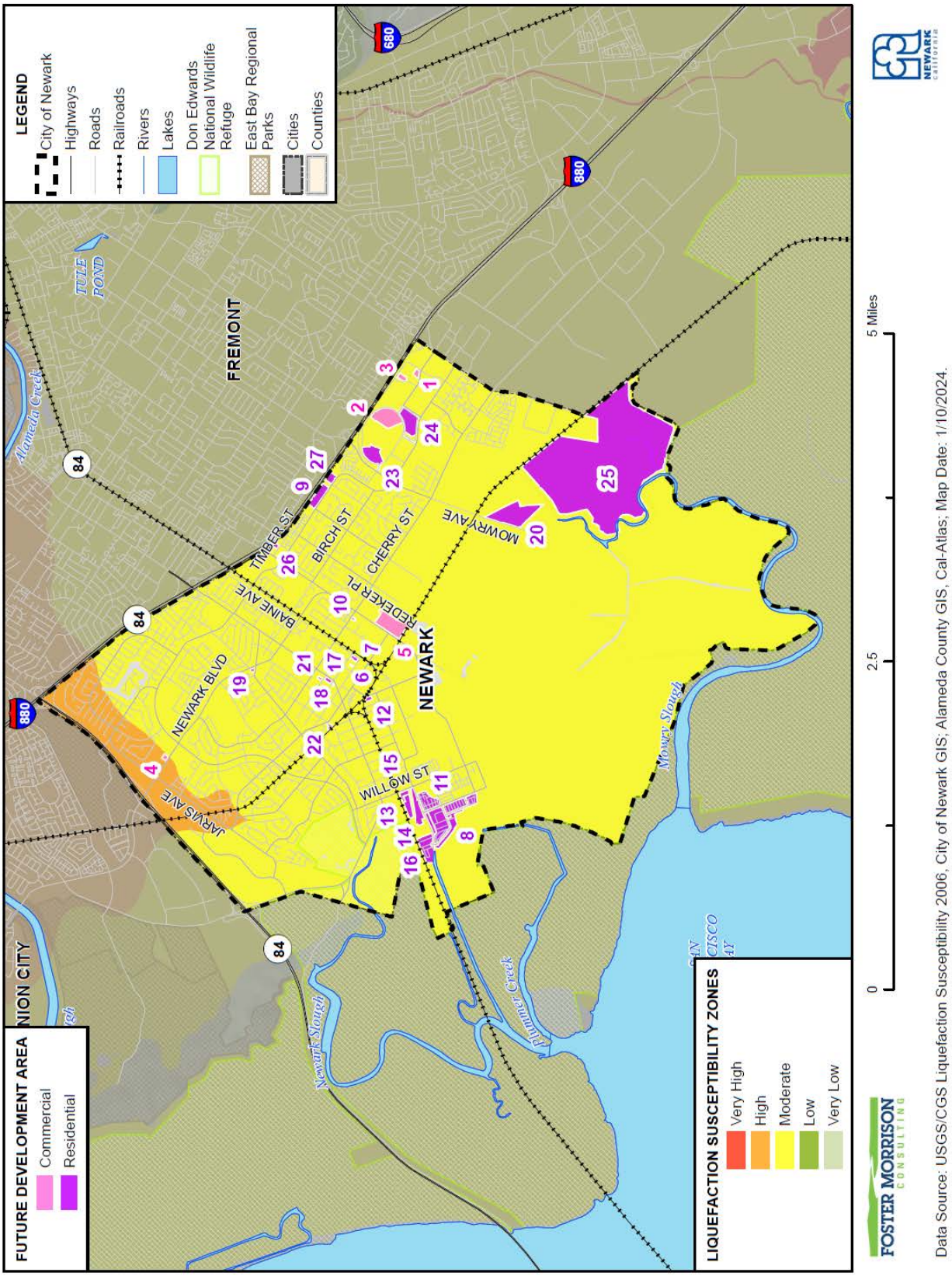


Table B-45 City of Newark – Future Development in Earthquake Liquefaction Zones

Liquefaction Susceptibility Zones / Property Type / Site Number	Future Development Name	Site Count
High		
Commercial		
4	McDonald's Replacement	1
Commercial Total		**1**
High Total		**1**
Moderate		
Commercial		
1	AC Marriott Hotel	1
2	Costco	1
3	Hyatt Place	1
5	Prologis	1
Commercial Total		**4**
Residential		
6	37136 Magnolia Street Duplex	1
7	Bain Avenue & Magnolia Street	1
9	Cedar Homes	1
10	Cherry Street Rowhouse Project	1
11	Compass Bay	1
12	Filbert Townhomes	1
13	FMC Willow- "North" of Hetch Hetchy	1
14	FMC Willow - "South" of Hetch Hetchy	1
15	FMC Willow - Affordable Family Units	1
16	Harbor Pointe	1
17	Lepakshi at Thornton "Site A" Prelim Review	1
18	Lepakshi at Thornton "Site B" Prelim Review	1
19	Mayhews Landing / Place	1
20	Mowry Village	1
21	Mulberry Residential	1
22	Muse Court	1
23	NewPark Phase A	1
24	Newpark Plaza- SB330	1
25	Sanctuary West	1
26	Timber Seniors	1
27	Waymark Homes on Cedar	1
Residential Total		**21**

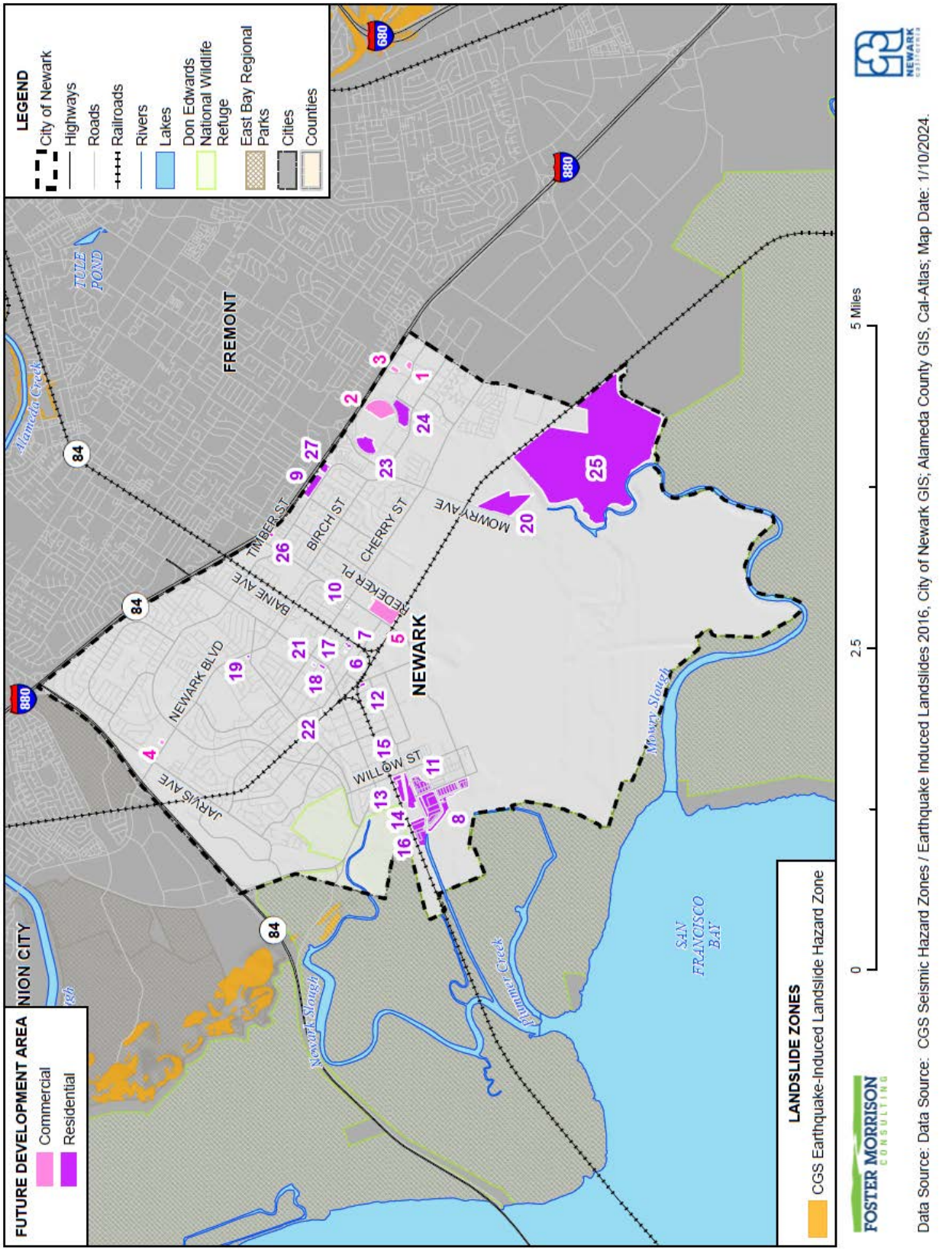
Liquefaction Susceptibility Zones / Property Type / Site Number	Future Development Name	Site Count
Moderate Total		**25**

Source: USGS/CS, City of Newark GIS

Earthquake-Induced Landslide

Figure B-75 shows the location of the future development areas overlayed on the CGS Earthquake-Induced Landslide zones. All future development areas in the City fall outside of the CGS Earthquake-Induced Landslide Zones. As such, no tabular analysis was performed.

Figure B-75 City of Newark – Future Development in Earthquake-Induced Landslide Zones



Flood: 1%/0.2% Annual Chance

Likelihood of Future Occurrence–Occasional/Unlikely
Vulnerability–High

Hazard Profile and Problem Description

This hazard analyzes the FEMA DFIRM 1% and 0.2% annual chance floods. These tend to be the larger floods that can occur in the Tri-City Planning Area or in the City and have caused damage in the past. Flooding is a significant problem in the City. Historically, the City has been at risk to flooding primarily during the winter and spring months when river systems in the City swell with heavy rainfall and snowmelt runoff. Normally, storm floodwaters are kept within defined limits by a variety of storm drainage and flood control measures. Occasionally, extended heavy rains result in floodwaters that exceed normal high-water boundaries and cause damage. Flooding has occurred both within the 1% and 0.2% annual chance floodplains and in other localized areas.

Location and Extent

The City of Newark has areas located in the 1% and 0.2% annual chance flood zones. This is seen in Figure B-76.

Figure B-76 City of Newark – FEMA DFIRM Flood Zones

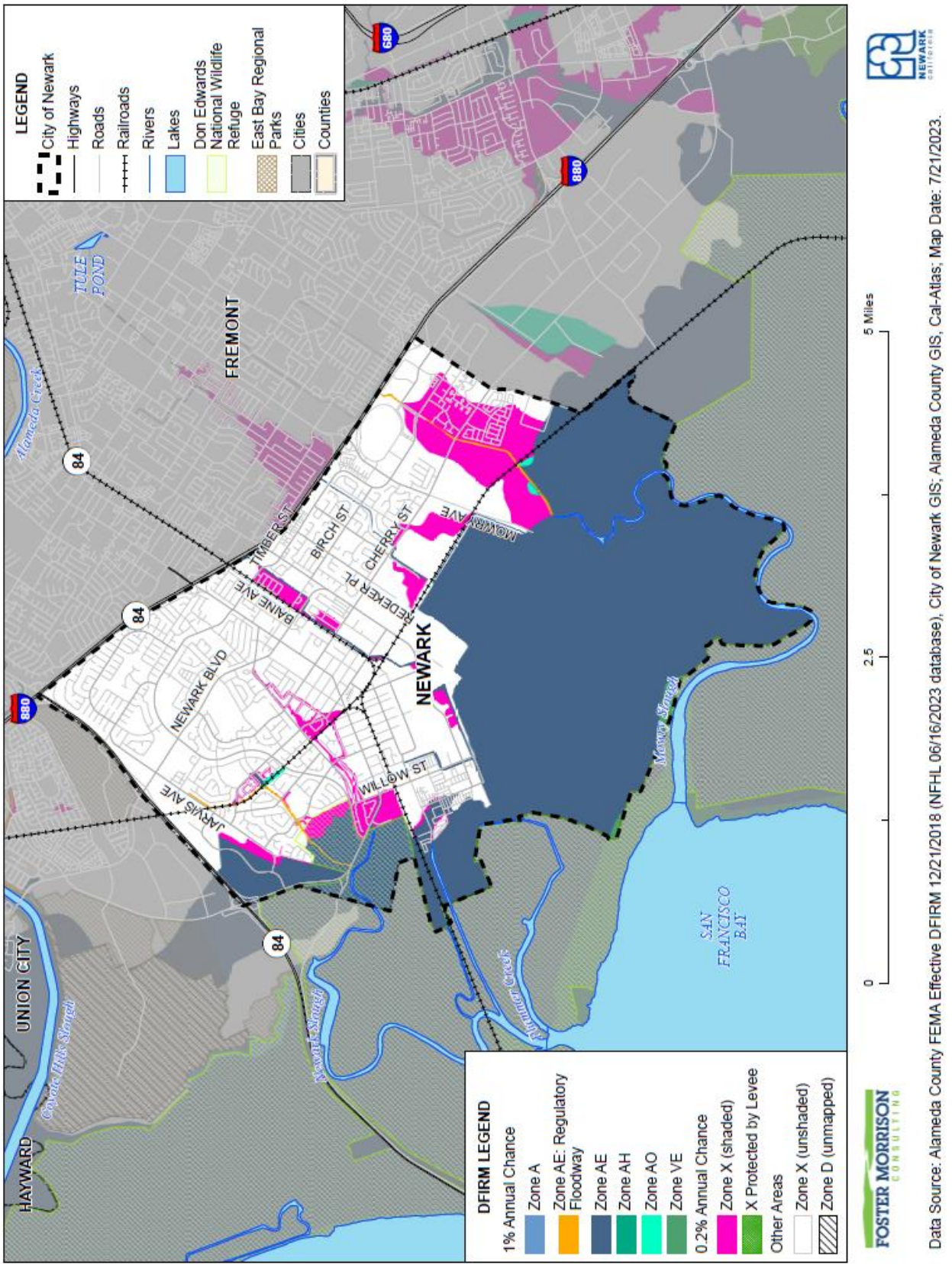


Table B-46 details the DFIRM mapped flood zones located within the City.

Table B-46 City of Newark– FEMA DFIRM Flood Hazard Zones

Flood Zone	Description	Flood Zone Present in City
A	1% annual chance flooding: No base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	
AE Regulatory Floodway	1% annual chance flood: Regulatory floodway; Base flood elevations provided	X
AE	1% annual chance flooding: Base flood elevations provided. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding) where average depths are between one and three feet. Base Flood Elevations (BFEs) derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between one and three feet. Average flood depths derived from detailed hydraulic analyses are shown in this zone. Mandatory flood insurance purchase requirements and floodplain management standards apply.	X
VE	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.	
Shaded X	0.2% annual chance flooding: The areas between the limits of the 1% annual chance flood and the 0.2-percent-annual-chance (or 500-year) flood. Flood insurance is not mandatory but is available.	X
X Protected by Levee	Areas protected by levees from 1% annual chance flood event. Levee protection places these areas in the 0.2% annual chance flood zone. Flood insurance is not mandatory but is available.	
D	Areas with possible but undetermined flood hazards. No flood hazard analysis has been conducted. Flood insurance rates are commensurate with the uncertainty of the flood risk.	
X (unshaded)	No flood hazard	X

Source: FEMA

Additionally, flood extents can generally be measured in volume, velocity, and depths of flooding. Expected flood depths in the City vary, depending on the nature and extent of a flood event; specific depths are unknown. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move downstream. Flooding in the City tends to have a shorter speed of onset, due to the amount of water that flows through the City.

Geographical flood extents for the City from the FEMA DFIRMs are shown in Table B-47.

Table B-47 City of Newark – Geographical Summary FEMA DFIRM Flood Zone Extents

Flood Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance	4,712	32.08%	687	7.20%	4,025	78.14%
0.2% Annual Chance	2,771	18.86%	2,452	25.71%	319	6.18%
Other Areas	7,205	49.06%	6,398	67.08%	807	15.67%

Source: FEMA DFIRM 12/21/2018

Flooded Acres

Also of interest is the land area affected by the various flood zones. The following is an analysis of flooded acres in the City in comparison to total area within the City limits. The same methodology, as discussed in Section 4.3.12 of the Base Plan, was used for the City of Newark. Table B-48 breaks down Table B-47 and presents a more detailed analysis of total acres for each FEMA DFIRM flood zone in the City.

Table B-48 City of Newark – Flooded Acres by FEMA DFIRM Flood Zone by Property Use

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
1% Annual Chance Flood Hazard						
Zone AE Floodway						
Agricultural	0	0.0%	0	0.0%	0	0.0%
Commercial	0	0.0%	0	0.0%	0	0.0%
Industrial	0	0.0%	0	0.0%	0	0.0%
Government / Institutional	18	0.120%	0	0.0%	18	0.342%
Recreational	0	0.0%	0	0.0%	0	0.0%
Residential	1	0.005%	1	0.007%	0	0.0%
Unknown	0	0.0%	0	0.0%	0	0.0%
Utilities	3	0.023%	0	0.0%	3	0.066%
Vacant	5	0.034%	0	0.0%	5	0.097%

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Zone AE Floodway Total	**27**	**0.182%**	**1**	**0.007%**	**26**	**0.505%**
Zone AE						
Agricultural	1,653	11.255%	260	2.731%	1,393	27.040%
Commercial	21	0.140%	19	0.203%	1	0.024%
Industrial	1,848	12.579%	332	3.483%	1,515	29.421%
Government / Institutional	502	3.419%	0	0.0%	502	9.750%
Recreational	0	0.0%	0	0.0%	0	0.0%
Residential	51	0.347%	36	0.373%	15	0.299%
Unknown	348	2.372%	35	0.368%	313	6.085%
Utilities	19	0.129%	0	0.0%	19	0.368%
Vacant	238	1.617%	1	0.007%	237	4.600%
Zone AE Total	***4,680***	***31.860%***	***683***	***7.165%***	***3,996***	***77.587%***
Zone AO						
Agricultural	0	0.0%	0	0.0%	0	0.0%
Commercial	0	0.0%	0	0.0%	0	0.0%
Industrial	0	0.0%	0	0.0%	0	0.0%
Government / Institutional	0	0.0%	0	0.0%	0	0.0%
Recreational	0	0.0%	0	0.0%	0	0.0%
Residential	3	0.021%	3	0.033%	0	0.0%
Unknown	0	0.0%	0	0.0%	0	0.0%
Utilities	3	0.018%	0	0.0%	3	0.051%
Vacant	0	0.0%	0	0.0%	0	0.0%
Zone AO Total	***6***	***0.039%***	***3***	***0.033%***	***3***	***0.051%***
1% Annual Chance Flood Hazard Total	**4,712**	**32.081%**	**687**	**7.205%**	**4,025**	**78.143%**
0.2% Annual Chance Flood Hazard						
Zone X (shaded)						
Agricultural	0	0.0%	0	0.0%	0	0.0%
Commercial	147	1.001%	131	1.375%	16	0.307%
Industrial	66	0.452%	66	0.687%	1	0.015%
Government / Institutional	219	1.489%	0	0.0%	219	4.245%

Flood Zone / Property Use	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Recreational	0	0.0%	0	0.0%	0	0.0%
Residential	2,296	15.630%	2,255	23.641%	41	0.794%
Unknown	0	0.001%	0	0.0%	0	0.002%
Utilities	28	0.188%	0	0.0%	28	0.536%
Vacant	15	0.105%	1	0.007%	15	0.285%
Zone X (shaded) Total	***2,771***	***18.864%***	***2,452***	***25.711%***	***319***	***6.185%***
0.2% Annual Chance Flood Hazard Total	**2,771**	**18.864%**	**2,452**	**25.711%**	**319**	**6.185%**
Other Areas						
Zone X (unshaded)						
Agricultural	11	0.076%	0	0.0%	11	0.218%
Commercial	701	4.772%	617	6.472%	84	1.624%
Industrial	345	2.347%	333	3.488%	12	0.234%
Government / Institutional	422	2.872%	31	0.321%	391	7.596%
Recreational	10	0.070%	10	0.109%	0	0.0%
Residential	5,473	37.262%	5,385	56.462%	88	1.709%
Unknown	59	0.403%	0	0.0%	59	1.149%
Utilities	78	0.531%	0	0.0%	78	1.515%
Vacant	106	0.721%	22	0.232%	84	1.627%
Zone X (unshaded) Total	***7,205***	***49.055%***	***6,398***	***67.084%***	***807***	***15.672%***
Other Areas Total	**7,205**	**49.055%**	**6,398**	**67.084%**	**807**	**15.672%**
Newark Total	**14,688**	**100.000%**	**9,537**	**100.000%**	**5,151**	**100.000%**

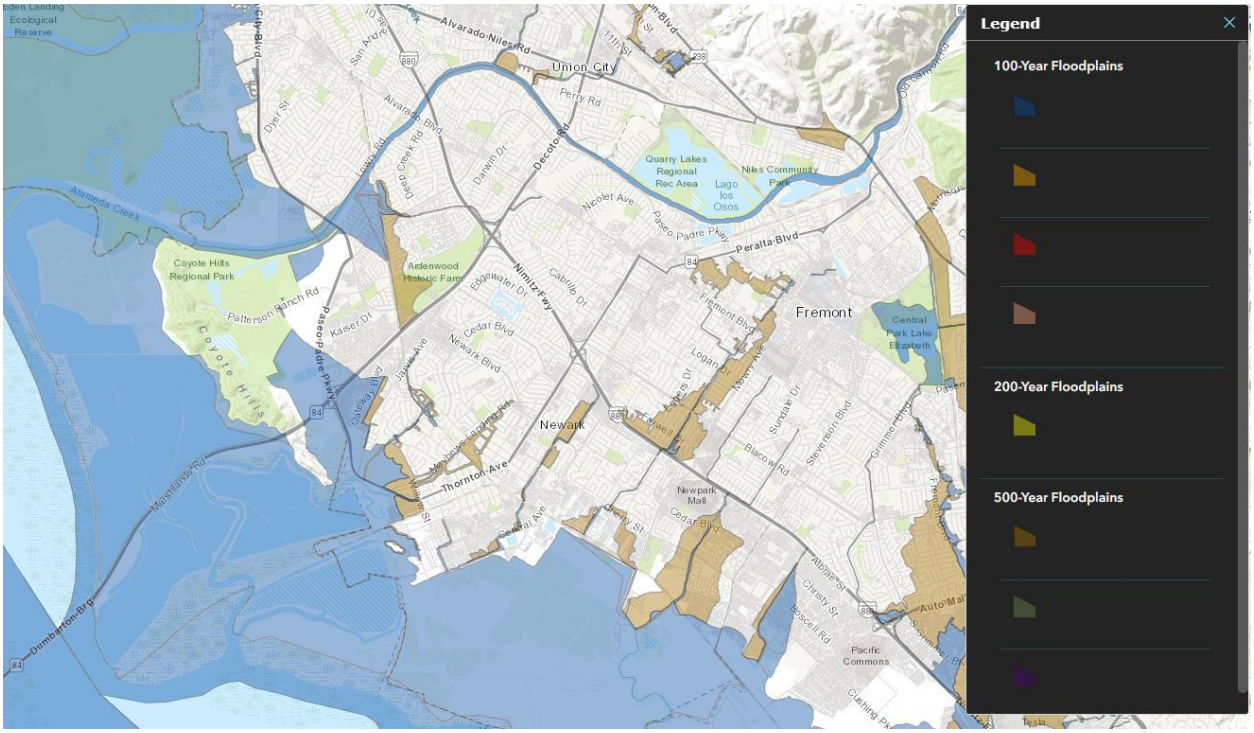
Source: FEMA 12/21/2018 DFIRM

California Department of Water Resources Best Available Maps (BAM)

The FEMA regulatory maps provide just one perspective on flood risks in Alameda County. Senate Bill 5 (SB 5), enacted in 2007, authorized the California DWR to develop the Best Available Maps (BAM) displaying 100- and 200-year floodplains for areas located within the Sacramento-San Joaquin (SAC-SJ) Valley watershed. This effort was completed by DWR in 2008. DWR has expanded the BAM to cover all counties in the State and to include 500-year floodplains.

Different than the FEMA DFIRMs which have been prepared to support the NFIP and reflect only the 100-year event risk, the BAMs are provided for informational purposes and are intended to reflect current 100-, 200-(as applicable), and 500-year event risks using the best available data. The 100-year floodplain limits on the BAM are a composite of multiple 100-year floodplain mapping sources. It is intended to show all currently identified areas at risk for a 100-year flood event, including FEMA's 100-year floodplains. The BAM are comprised of different engineering studies performed by FEMA, Corps, and DWR for assessment of potential 100-, 200-, and 500-year floodplain areas. These studies are used for different planning and/or regulatory applications, and for each flood frequency may use varied analytical and quality control criteria depending on the study type requirements. The value in the BAMs is that they provide a bigger picture view of potential flood risk to the City than that provided in the FEMA DFIRMs. The BAM map for Newark is shown in Figure B-77.

Figure B-77 City of Newark – Best Available Map



Source: California DWR

Legend explanation: Blue - FEMA 1%, Orange – Local 1% (developed from local agencies), Red – DWR 1%r (Awareness floodplains identify the 1% annual chance flood hazard areas using approximate assessment procedures.), Pink – USACE 1% (2002 Sac and San Joaquin River Basins Comp Study), Yellow – USACE 0.5% (2002 Sac and San Joaquin River Basins Comp Study), Tan – FEMA 0.2%, Grey – Local 0.2% (developed from local agencies), Purple – USACE 0.2%(2002 Sac and San Joaquin River Basins Comp Study).

Past Occurrences

Disaster Declarations

A list of state and federal disaster declarations for Alameda County from flooding is shown on Table B-49. These events also likely affected the City to some degree.

Table B-49 Alameda County – State and Federal Disaster Declarations from Flood 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	20	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (three)

Source: Cal OES, FEMA

City of Newark Events

1950s - 1960s. According to the 2018 Flood Insurance Study (FIS), prior to the 1950s, the City experienced recurring flooding during heavy rains. In the 1950s, the community participated in the creation of a flood control district and improvements were made to the City's drainage systems. As a result of these improvements, the City has not had damaging flooding since the 1960s.

2023 - The City had 2 major storm events in January & March 2023 that caused trees to go down, and debris to be deposited on the road. It also caused trees down impacting homes and streets. The City also had trouble with storm drains backing up and causing flooding in streets over time. The EOC was activated during this time:

- January 4, 2023 – Level 2 (winter storm)

Vulnerability to Flood: 1% and 0.2% Annual Chance

Floods have been a part of the City's historical past and will continue to be so in the future. During winter months, long periods of precipitation and the timing of that precipitation are critical in determining the threat of flood, and these characteristics further dictate the potential for widespread structural and property damage. Predominantly, the effects of flooding are generally confined to areas near the waterways of the City. As waterways grow in size from local drainages, so grows the threat of flood and dimensions of the threat.

The whole of the City is at some measure of vulnerability to floods. An assessment of a community's vulnerability to flood begins with an understanding of local exposure to flood. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The 2018 FIS for Alameda County noted the channels that flow through the City of Newark are affected at their outlets by the variation of tidal elevations in the San Francisco Bay. Thornton Avenue and the Southern Pacific Railroad embankments act as dikes to protect the City from high tides. The areas on the bay side of these dikes are subject to tidal flooding. The channels that flow under Thornton Avenue are cut off from the effects of tidal flooding by flap-gated culverts. These culverts are a major cause of flooding in the City of Newark at times of high water elevations of the Bay. Alameda County Flood Control District Lines H and I are particularly susceptible to flooding due to the design of these culverts.

Assets at Risk

Assets at risk from flood include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All people and populations located in the 1% and 0.2% annual chance floodplains are at some risk to flooding. Certain vulnerable populations located within areas prone to flooding may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unsheltered, those with limited mobility, and those that lack the resources to leave the area.

City residents that live in the 1% and 0.2% annual chance floodplains are often the most vulnerable. Not only are the residents at risk, but their homes and contents are all at risk, compounding the impacts associated with significant hazard events. To further evaluate the impact to Newark's residential population residing within these hazard areas, the DFIRM flood zones were overlayed on the parcel layer. Those residential parcel centroids that intersect the flood zones were counted and multiplied by the 2020 Census Bureau average household factors for Newark – 3.32. According to this analysis, there is a total population of 857 and 6,806 residents of the City at risk to flooding in the 1% and 0.2% annual chance floodplains, respectively. This is shown in Table B-50.

Table B-50 City of Newark – Improved Residential Parcels and Population by Summary FEMA DFIRM Flood Zone

Jurisdiction	1% Annual Chance		0.2% Annual Chance	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Newark	258	857	2,050	6,806

Source: FEMA DFIRM 12/21/2018, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau

Structures

Certain structures in the City are at risk of DFIRM flooding and primarily include those structures located within the 1% and 0.2% annual chance floodplains. GIS was used to determine the possible impacts of flooding on parcels and structures within the City of Newark. The methodology described in Section 4.3.11 of the Base Plan was followed in determining structures and values at risk to the 1% (100-year) and 0.2% (500-year) annual chance flood event. Table B-51 is a summary table for the City of Newark. Parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the City are shown for the 1% and 0.2% annual chance flood zones, as well as for those properties that fall outside of the mapped FEMA DFIRM flood zones. Table B-52 breaks down Table B-51 and shows the same analysis further broken out by detailed FEMA flood zone.

Table B-51 City of Newark – Count and Value of Parcels (and Structures) at Risk in Summary FEMA DFIRM Flood Zone

Flood Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard	850	285	$409,592,873	$591,325,221	$681,200,593	$1,682,118,687
0.2% Annual Chance Flood Hazard	2,301	2,080	$561,495,519	$1,263,386,061	$821,589,229	$2,646,470,809
Other Areas	14,007	13,021	$3,218,815,821	$6,369,551,848	$3,989,939,277	$13,578,306,946
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: FEMA 12/21/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table B-52 City of Newark – Count and Values of Parcels (and Structures) at Risk by Detailed FEMA DFIRM Flood Zone and Property Use

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
1% Annual Chance Flood Hazard						
Zone AE Floodway						
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	15	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	3	3	$429,806	$806,780	$403,390	$1,639,976
Unknown	0	0	$0	$0	$0	$0
Utilities	6	0	$0	$0	$0	$0
Vacant	2	0	$4,483,882	$0	$0	$4,483,882
Zone AE Floodway Total	***26***	***3***	***$4,913,688***	***$806,780***	***$403,390***	***$6,123,858***
Zone AE						
Agricultural	27	1	$2,332,806	$3,339,480	$3,339,480	$9,011,766
Commercial	17	3	$26,808,486	$42,055,937	$42,055,937	$110,920,360

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Government / Institutional	67	0	$6,817	$0	$0	$6,817
Industrial	21	15	$149,571,911	$366,188,361	$549,282,541	$1,065,042,813
Recreational	0	0	$0	$0	$0	$0
Residential	339	237	$90,527,039	$165,588,651	$82,794,326	$338,910,016
Unknown	4	1	$24,055,983	$42,970	$0	$24,098,953
Utilities	8	0	$0	$0	$0	$0
Vacant	322	7	$107,893,288	$6,653,210	$0	$114,546,498
Zone AE Total	***805***	***264***	***$401,196,330***	***$583,868,609***	***$677,472,284***	***$1,662,537,223***
Zone AO						
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	18	18	$3,482,855	$6,649,832	$3,324,919	$13,457,606
Unknown	0	0	$0	$0	$0	$0
Utilities	1	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
Zone AO Total	***19***	***18***	***$3,482,855***	***$6,649,832***	***$3,324,919***	***$13,457,606***
1% Annual Chance Flood Hazard Total	**850**	**285**	**$409,592,873**	**$591,325,221**	**$681,200,593**	**$1,682,118,687**
0.2% Annual Chance Flood Hazard						
Zone X (shaded)						
Agricultural	0	0	$0	$0	$0	$0
Commercial	25	18	$90,495,924	$223,071,066	$223,071,066	$536,638,056
Government / Institutional	30	0	$0	$0	$0	$0
Industrial	10	9	$36,614,128	$79,702,607	$119,553,912	$235,870,647
Recreational	0	0	$0	$0	$0	$0
Residential	2,181	2,050	$425,506,195	$957,928,525	$478,964,251	$1,862,398,971
Unknown	1	0	$0	$0	$0	$0
Utilities	11	0	$0	$0	$0	$0

Flood Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Vacant	43	3	$8,879,272	$2,683,863	$0	$11,563,135
Zone X (shaded) Total	***2,301***	***2,080***	***$561,495,519***	***$1,263,386,061***	***$821,589,229***	***$2,646,470,809***
0.2% Annual Chance Flood Hazard Total	**2,301**	**2,080**	**$561,495,519**	**$1,263,386,061**	**$821,589,229**	**$2,646,470,809**
Other Areas						
Zone X (unshaded)						
Agricultural	1	0	$435,538	$0	$0	$435,538
Commercial	377	296	$464,144,656	$783,186,362	$783,186,362	$2,030,517,380
Government / Institutional	231	17	$13,303,979	$15,447,837	$15,447,837	$44,199,653
Industrial	78	72	$207,665,855	$408,476,352	$612,714,529	$1,228,856,736
Recreational	3	3	$1,480,029	$1,214,920	$1,214,920	$3,909,869
Residential	13,055	12,620	$2,416,498,437	$5,154,751,305	$2,577,375,629	$10,148,625,371
Unknown	16	0	$0	$0	$0	$0
Utilities	61	0	$0	$0	$0	$0
Vacant	185	13	$115,287,327	$6,475,072	$0	$121,762,399
Zone X (unshaded) Total	***14,007***	***13,021***	***$3,218,815,821***	***$6,369,551,848***	***$3,989,939,277***	***$13,578,306,946***
Other Areas Total	**14,007**	**13,021**	**$3,218,815,821**	**$6,369,551,848**	**$3,989,939,277**	**$13,578,306,946**
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: FEMA 12/21/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone

**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Table B-53 summarizes Table B-52 and shows City of Newark loss estimates and improved values at risk by FEMA 1% and 0.2% annual chance flood zones. According to Table B-52 and Table B-53, the City of Newark has 406 parcels and $1.61 billion of structure and contents values or values in the 1% annual chance flood zone, and 4,161 improved parcels and $5.55 billion of structure and contents values in the 0.2% annual chance flood zone. These values can be refined a step further. Applying the 20 percent damage factor as previously described in Section 4.3.11 of the Base Plan, there is a 1% chance in any given year of a flood event causing $322 million in damage and a 0.2% chance in any given year of a flood event causing

$1.11 billion in damage in the City of Newark. The loss ratio of 0.52% indicates that flood losses for 1% annual chance flooding would be relatively minor and the City would be able recover. The loss ratio of 13.52% indicates that flood losses for 0.2% annual chance flooding would be relatively major and the City would have some difficulty in recovering.

Table B-53 City of Newark – Flood Loss Estimates

Jurisdiction/ Flood Zone	Total Parcel Count	Improved Parcel Count	Improved Structure Value	Estimated Contents Value	Total Value	Loss Estimate	Loss Ratio
1% Annual Chance Flood Hazard	850	285	$591,325,221	$681,200,593	$1,272,525,814	$254,505,163	2.05%
0.2% Annual Chance Flood Hazard	2,301	2,080	$1,263,386,061	$821,589,229	$2,084,975,290	$416,995,058	3.36%
Newark Total	**3,151**	**2,365**	**$1,854,711,282**	**$1,502,789,822**	**$3,357,501,104**	**$671,500,221**	**5.41%**

Source: FEMA 12/21/2018 DFIRM, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)
*With respect to improve parcels within the floodplain, the actual structures on the parcels may not be located within the actual floodplain, may be elevated and or otherwise outside of the identified flood zone
**This parcel count only includes those parcels in the 0.2% annual chance flood zone, exclusive of the 1% annual chance flood zone. The 0.2% annual chance flood, in actuality, also includes all parcels in the 1% annual chance flood zone.

Critical Facilities and Infrastructure, and Community Lifelines

Flooding presents a threat to threat to both critical facilities and infrastructure, as well as community lifelines. Critical infrastructure plays an immensely important role in our communities. As previously noted, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. The following GIS analysis identifies critical facilities and infrastructure at risk to flooding, followed by a discussion on vulnerability of community lifelines.

Critical Facilities and Infrastructure

Flooding presents a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities fall into DFIRM flood zones and, if so, which zone they fall into. Using GIS, the DFIRM flood zones were overlayed on the critical facility GIS layer. This is shown on Figure B-78 for the DFIRM flood zones. Table B-24 details which critical facilities fall in which flood zone. Details of critical facility categories, type, name, and address by FEMA DFIRM Flood Zone are listed in Appendix F.

Figure B-78 City of Newark – Critical Facilities in FEMA DFIRM Flood Zones

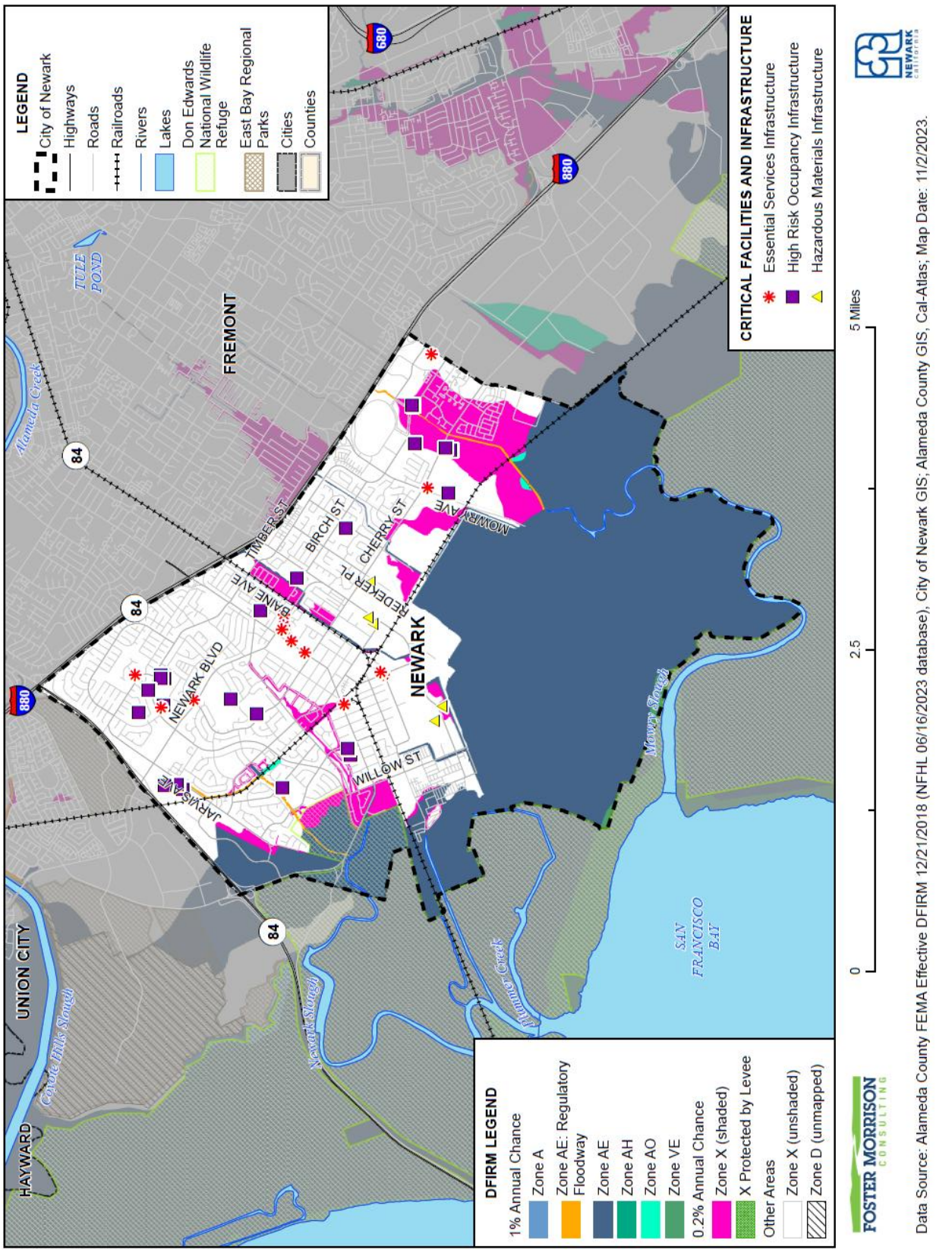


Table B-54 City of Newark – Critical Facilities by Category and Type in FEMA DFIRM Flood Zones

Flood Zone / Critical Infrastructure Category	Critical Infrastructure Type	Facility Count
0.2% Annual Chance Flood Hazard		
Zone X (Shaded)		
High Risk Occupancy Infrastructure	Day Care	1
	School	3
	Total	**4**
Hazardous Materials Infrastructure	Logistics Facility	1
	Total	**1**
Zone X (Shaded)Total		**1**
0.2% Annual Chance Flood Hazard Total		**5**
Other Areas		
Zone X (unshaded)		
Essential Services Infrastructure	Bridge	1
	City Facility	7
	Fire Station	3
	Hospital	3
	Police Station	1
	Total	**15**
High Risk Occupancy Infrastructure	Day Care Center	6
	School	13
	Total	**19**
Hazardous Materials Infrastructure	Chemical Facility	3
	Distribution Center	1
	Gas Facility	1
	Total	**5**
Zone X (unshaded) Total		**39**
Other Areas Total		**39**
Grand Total		**44**

Source: FEMA 12/21/2018 DFIRM, City of Newark GIS

Community Lifelines

1% and 0.2% annual chance flooding presents a threat to life and property, including community lifelines in the City. Community lifelines that would be vulnerable to flooding include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. During large events, these services may become stretched.
- **Food, Hydration, Shelter** – Public health can also be at risk from flooding. Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water.
- **Health and Medical** – Loss of life and injuries can occur during significant flood events. Flooding may complicate the ability to transport the injured possibly requiring rerouting of injured to other facilities.
- **Energy** – Floods can cause power grid issues and lead to power outages. During extreme flood events gas lines may break or otherwise be damaged from erosion and debris in floodwaters.
- **Communications** – Communication infrastructure can be inundated by a flood event causing damage and disruption in service. As well an influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about lane and road closures, washouts, debris on roads, and requirements for evacuations or sheltering.
- **Transportation** – Transport networks can be affected, such as flood damage to bridges, railways and roads. This can cause lane and road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents and impact evacuation routes. Life safety can also be an issue on flooded roads.
- **Hazardous Material** – Hazardous material facilities can be affected by flooding. Releases during these times can be comingles with flood waters, contaminate drinking water, as well as create additional exposures to the environment.
- **Water Systems** – Floods can affect the ability for water and wastewater systems to operate, since many are located near flood zones.

Generally, even major flood events are temporary events with flood waters receding back to pre-storm levels at the conclusion of the storm. However, depending on the location, duration, and magnitude and severity of any given flood event, some of these community lifelines may be overwhelmed in the short term.

Natural, Historic, and Cultural Resources

Large flood events can affect natural, historic, and cultural resources. There are a number of ways floodwaters can impact natural resources and the environment: Wildlife habitats can be destroyed by floodwaters. Contaminated floodwater can pollute rivers and habitats. Silt and sediment can destroy natural areas. Riverbanks and natural levées can be eliminated as rivers reach bankfull capacity. Rivers can be widened, and deposition can increase downstream. Trees can be uprooted by high-velocity water flow. Plants that survive the initial flood may die due to being inundated with water. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures within the flooded areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme flood events. Any of these that fall in the flood zones shown on Figure B-76 would be vulnerable. This is especially true if a 0.2% annual chance flood event occurs.

Economic Assets and Community Activities of Value

Major flood events could affect any economic asset that lies in the floodplain and can have long lasting effects. This could cause those businesses and economic assets within these areas to close or relocate. This could cause temporary or permanent loss of sales tax revenue. Cargill Salt is in this area. The facility doesn't generate a significant amount of sales tax. The Silliman Center and the Sr. Center are also in these areas. Impacts to the City would be more connected to loss of employment.

These events can also affect those economic assets outside of the floodplain, at least in the short term until the City has sufficiently recovered.

Impacts from Flood: 1% and 0.2% Annual Chance

Floods are among the costliest natural disasters in terms of human hardship and economic loss nationwide. Large flood events, including those associated with 1% and 0.2% annual chance floods, can cause substantial damage to structures, landscapes, and utilities as well as life safety issues. People may be swept away in floodwaters, causing injuries or deaths. Floods can be extremely dangerous, and even six inches of moving water can knock over a person given a strong current. During a flood, people can also suffer heart attacks or electrocution due to electrical equipment short outs. Direct impacts, such as drowning, can be limited with adequate warning and public education about what to do during floods. Floodwaters can transport large objects downstream which can damage or remove stationary structures. Structures can be damaged directly from floodwaters and can also be damaged from trees falling as a result of water-saturated soils. Ground saturation can result in instability, collapse, or other damage. Objects can also be buried or destroyed through sediment deposition. Floodwaters can also break utility lines and interrupt services causing power outages. The interruption of power causes major problems and can result in the closure of governmental offices and community businesses. Public schools may also be required to close or be placed on a delayed start schedule. Roads can be damaged and closed, causing safety and evacuation issues.

Standing water can cause damage to crops, roads, foundations, and electrical circuits. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, loss of environmental resources, and economic impacts.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. If a large flood impacts the City, there is potential that those facilities closer to the floodplain may be impacted more severely than those located further from the floodplain. Future development that continues to occur in these areas (like those shown in Table B-56) will increase possible impacts. However, the City has a development review process which includes the consideration of hazard constraints and updated building codes that should further limit the impacts of these hazards on City assets.

Health Hazards from Flooding

According to FEMA, certain health hazards are also common to flood events. Three general types of health hazards accompany floods. The first comes from the water itself. Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm, and industrial chemicals. Pastures and areas where cattle and other livestock are kept or their wastes are stored can contribute polluted waters to the receiving streams.

Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as e. coli and other disease-causing agents.

The second type of health problem arise after most of the water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet areas of a building that have not been properly cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children, the elderly, and those that are medically vulnerable.

Another health hazard occurs when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If a water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

The third problem is the long-term psychological impact of having been through a flood and seeing one's home damaged and irreplaceable keepsakes destroyed. The cost and labor needed to repair a flood-damaged structure puts a severe strain on people, especially the unprepared and uninsured. There is also a long-term problem for those who know that their homes can be flooded again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems.

Insurance Coverage, Claims Paid, and Repetitive Losses

Standard property insurance does not include flood coverage because of the relatively high risk. The National Flood Insurance Program (NFIP) provides flood insurance to residents in those communities that participate in the NFIP. Federal financial assistance requires the purchase of flood for structures located within a 100-year floodplain – a requirement that affects nearly all mortgages financed through commercial lending institutions. Flood insurance is also recommended for all structures protected by levees, even if not mapped within a floodplain.

The City of Newark joined the NFIP as an Emergency Entry on April 22, 1974, and as a Regular Entry on December 1, 1978. The City does not participate in the CRS program. NFIP data indicates that as of July 2, 2023, there were 43 flood insurance policies in force in the City with $13,671,000 of coverage. Of the 43 policies: 38 were for single family homes were residential (single-family homes), 1 was for a multi-family home, and 4 were for non-residential properties. Of the 43 policies in force, 29 were in A Zones, 13 were in B, C, and X zones, and 1 was in some other zone. The GIS parcel analysis detailed above identified 285 improved parcels in the 1% annual chance flood zone. There have been 5 historical claims for flood losses totaling $0.00. NFIP data further indicates that there are no repetitive loss (RL) or severe repetitive loss (SRL) buildings in Newark. There have been no substantial damage claims since 1978 in the City.

Based on this analysis of insurance coverage, the City has values at risk to the 1% annual chance and greater floods. Of the 285 improved parcels within the 1% annual chance flood zone, only 13 (or 4.6 percent) of those parcels maintain flood insurance. This can be seen on Table B-55.

Table B-55 City of Newark – Percentage of Policy Holders to Improved Parcels in the 1% Annual Chance Floodplain

Jurisdiction	Improved Parcels in SFHA (1% Annual Chance) Floodplain*	Insurance Policies in the SFHA (1% Annual Chance) Floodplain	Percentage of 1% Annual Chance Floodplain Parcels Currently Insured
City of Newark	285	13	4.6%

Source: FEMA DFIRM 12/21/2018, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), NFIP CIS data 7/2023.

Future Development

The potential for flooding may increase as floodwaters are channeled due to land development. Such changes can exacerbate flooding problems inside and outside of natural floodplains by altering or confining natural drainage channels. Floodplain modeling and master planning should be based on built out property use to ensure that all new development remains safe from future flooding. While local floodplain management, stormwater management, and water quality regulations and policies address these changes on a site-by-site basis, their cumulative effects can have a negative impact on the overall floodplain.

The City's Housing Element noted that the Municipal Code sets standards to minimize flood hazard risks, including anchoring and flood-proofing and a requirement that the lowest floor, including basements, is at or above the 100-year flood elevation. While not yet codified in City Code, the following is planned to be

adopted. Development within the 100-year flood zone is limited, with requirements for building at least 1 foot above the flood elevation. The City requires non-residential development to be elevated at least 8 feet above mean high tide and 11.25 feet for residential development.

The City enforces its floodplain management ordinance. More detail on the specifics of the floodplain ordinance can be found in the Capability section below. A discussion of general considerations follows.

Future Development: General Considerations

Communities that participate in the NFIP adopt regulations and codes that govern development in special flood hazard areas (SFHAs) and enforce those requirements through their local floodplain management ordinances through the issuance of permits. The City of Newark's floodplain management ordinance provides standards for development, subdivision of land, construction of buildings, and improvements and repairs to buildings that meet the minimum requirements of the NFIP and also the requirements of the City's current adopted version of the California Building Code (and International Building Code), which in some areas exceed the base requirements of the NFIP. While not yet codified, there is a plan to meet these requirements.

The International Residential Code and International Building Code, by reference to American Society of Civil Engineers (ASCE) 24, include requirements that govern the design and construction of buildings and structures in flood hazard areas. FEMA has determined that the flood provisions of the I-Codes are consistent with the requirements of the NFIP (the I-Code requirements shown either meet or exceed NFIP requirements). ASCE 24, a design standard developed by the American Society of Civil Engineers, expands on the minimum NFIP requirements with more specificity, additional requirements, and some limitations.

With the adoption of the International Codes, communities will be moving towards a more stringent approach to regulatory floodplain management, beyond the minimum requirements of the NFIP. The adoption and enforcement of disaster-resistant building codes is a core community action to promote effective mitigation. When communities ensure that new buildings and infrastructure are designed and constructed in accordance with national building codes and construction standards, they significantly increase local resilience now and in the future. With continued advancements in building codes, local ordinances should be reviewed and updated to meet and exceed standards as practicable to protect new development from future flood events and to further promote disaster resiliency.

One of the most effective ways to reduce vulnerability to potential flood damage is through careful land use planning that fully considers applicable flood management information and practices. Master planning will also be necessary to assure that open channel flood flow conveyances serving the smaller internal streams and drainage areas are adequately prepared to accommodate the flows. Preservation and maintenance of natural and riparian areas should also be an ongoing priority to realize the flood control benefits of the natural and beneficial functions of these areas.

Future development in the City may be built in the floodplain, in conformance to the standards of the floodplain ordinance, as updated. The City enforces the floodplain ordinance on new development in Newark.

Future development areas and their vulnerability to FEMA DFIRM flooding is discussed further in the below GIS analysis.

GIS Analysis

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Utilizing the future development area spatial layer, the parcel centroid data was intersected to determine the future development areas within each FEMA DFIRM flood zone. Figure B-79 show the locations of the future development areas overlayed on the FEMA DFIRM flood zones. Table B-56 shows each future development area in the City in these zones.

Figure B-79 City of Newark – Future Development Areas in FEMA DFIRM Flood Zones

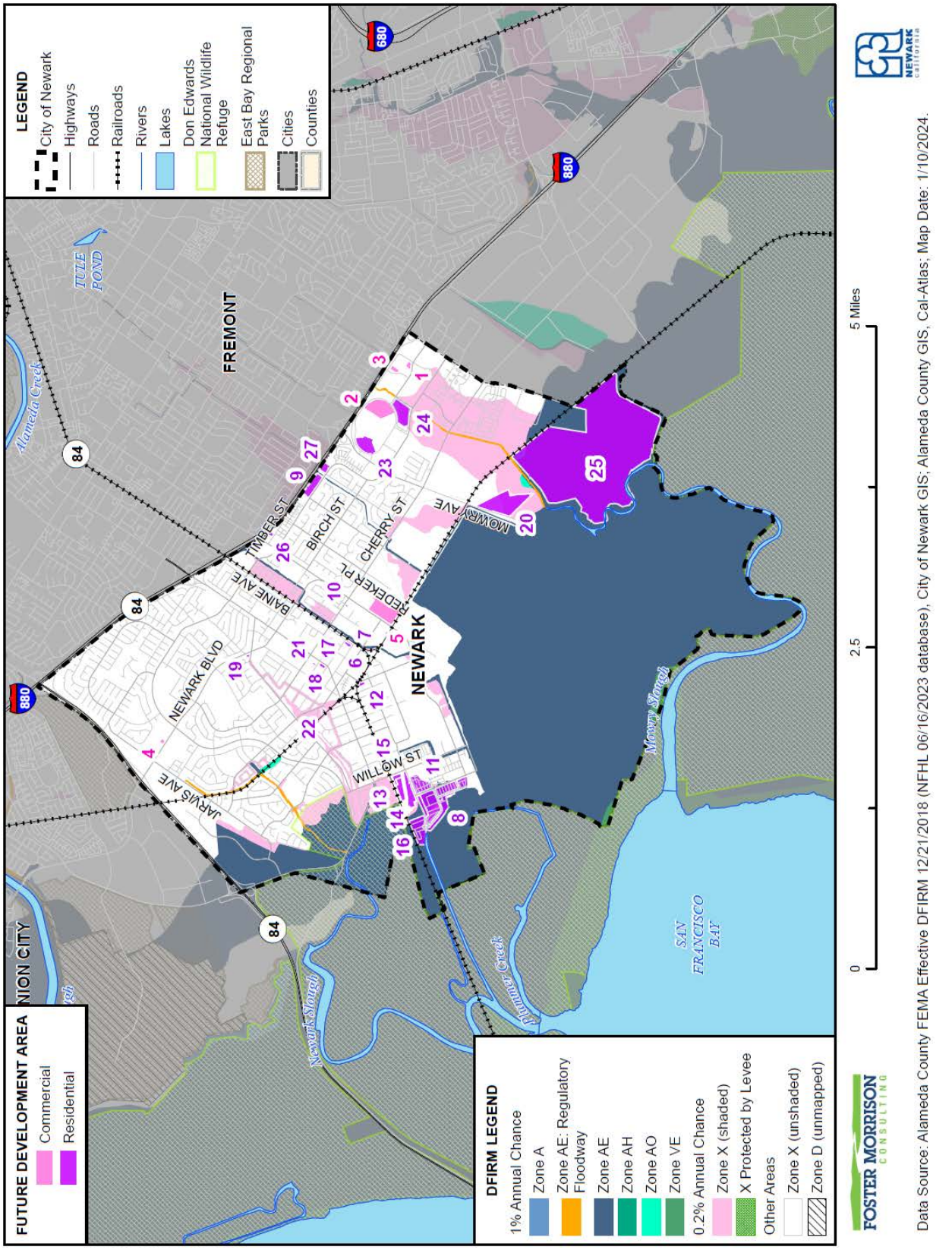


Table B-56 City of Newark – Future Development in FEMA DFIRM Flood Zones

Flood Zone / Property Type / Site Number	Future Development Name	Site Count
1% Annual Chance Flood Hazard		
Zone AE		
Residential		
16	Harbor Pointe	1
25	Sanctuary West	1
Residential Total		**2**
Zone AE Total		**2**
1% Annual Chance Flood Hazard Total		**2**
0.2% Annual Chance Flood Hazard		
Zone X (shaded)		
Residential		
20	Mowry Village	1
22	Muse Court	1
24	Newpark Plaza- SB330	1
Residential Total		**3**
Zone X (shaded) Total		**3**
0.2% Annual Chance Flood Hazard Total		**3**

Source: FEMA 12/21/2018 DFIRM, City of Newark GIS

Flood: Localized Stormwater Flooding

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Flooding occurs in areas other than the FEMA mapped 1% and 0.2% annual chance floodplains. Flooding may be from drainages not studied by FEMA, lack of or inadequate drainage infrastructure, or inadequate maintenance. Localized, stormwater flooding occurs throughout the City during the rainy season from November through April. Prolonged heavy rainfall contributes to a large volume of runoff resulting in high peak flows of moderate duration.

Location and Extent

The City of Newark is subject to localized flooding throughout the City. This is discussed in Table B-57 below. There is also localized flooding potential along the urban fringe near the base of the hills and in scattered flatland areas. Flood extents are usually measured in areas affected, velocity of flooding, and depths of flooding. Expected flood depths in the City vary by location. Flood durations in the City tend to be short to medium term, or until either the storm drainage system can catch up or flood waters move

downstream. Localized flooding in the City tends to have a shorter speed of onset, especially when antecedent rainfall has soaked the ground and reduced its capacity to absorb additional moisture.

Past Occurrences

Disaster Declarations

No disaster declarations occurred from localized flooding.

City of Newark Events

The City noted the following past occurrences of localized flooding:

November and December 2012 - The May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum noted a series of significant winter storms impacted the area between November and December of 2012. The storms brought gusty winds, heavy rain, high surf and flooding. During the November 30 event, 13,800 customers experienced power outages in the Bay Area. In Newark, Highway 84 was flooded between Decoto Road and Newark Boulevard and between Mission Boulevard and Main Street.

In the **December 2022 - January 2023** storms it was reported that significant short-term flooding occurred upstream of Alameda County Flood Control District Lines H and I. It was also reported that there was minor flooding due to t debris covering drain grates and/or clogged storm drain lines.

Vulnerability to Localized Flood

Flood vulnerability and their impacts vary by location and severity of any given flood event and will likely only affect certain areas of the City during specific times. Based on the risk assessment, it is evident that floods will continue to have potentially significant economic impacts to certain areas of the City. However, while flooding can cause significant impacts depending on the duration and volume of precipitation and the drainage in any given area, many of the floods in the City are minor, localized flood events that are more of a nuisance than a disaster.

Many areas of the City are at some measure of vulnerability to localized flooding. An assessment of a community's vulnerability to localized flood begins with an understanding of local exposure to localized flooding. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

Historically, the City has been affected by flooding of streams and creeks occurring during heavy rain and storm events. Additional development in the City and in the watersheds of these streams affects both the frequency and duration of damaging floods through an increase in stormwater runoff and contributes to localized flooding occurring in areas throughout the City.

Newark water and wastewater systems can also be vulnerable to heavy rains and flood events. Rainfall creates a high water table, surging streams and creeks, and saturates soil. Infiltration of stormwater into water and wastewater systems may occur and presents a threat to public health and safety, when the infrastructure is no longer able to meet demands.

The City tracks localized flooding areas. Localized flood problem areas identified by the City of Newark are summarized in Table B-57. Some of the problem areas from heavy rains in the City were shown in the Local Concerns of the Flood: Localized Stormwater Flood discussion above.

Table B-57 City of Newark – List of Localized Flooding Problem Areas

Road/Area Name	Flooding	Pavement Deterioration	Washouts	High Water/ Creek Crossing	Landslides/ Mudslides	Debris	Downed Trees
Willow St./Roundabout	X						X
Cedar Blvd-Forbes Ave	X					X	X
Cherry St/Thornton Ave	X					X	
Larkspur Ct.	X					X	
Newark Lake				X/HW			
West end of Mowry	X						
Bettencourt Street Area	X						X
ACFCD Lines H and I	X			X		X	

Source: City of Newark

Assets at Risk

Assets at risk from localized flood include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

People and populations are traditionally not highly vulnerable to localized flooding, but their structures and contents can be at risk. Localized flooding may also cause transportation issues as roads and lanes are impacted or closed and affect the ability for people to travel throughout the City.

Structures

Structures in areas with localized flooding can be affected if floodwaters intrude into the structure. Structures in low lying areas, or those with basements can be at greater risk. Buildings with older

foundations that are prone to water intrusion are also at greater risk. Once water finds its way into a structure, it tends to continue to do so until the path that brings water into a structure is mitigated.

Critical Facilities and Infrastructure, and Community Lifelines

Localized flooding, while often more of a nuisance, can cause damage to critical facilities and infrastructure during a heavy rain and storm event. Any facility that experiences localized flooding can be impacted. Utilities and other critical infrastructure can all be affected, causing interruptions in service until repairs can be made. For example, water and wastewater systems can be vulnerable to heavy rains and flood events. Rainfall creates a high water table, surging streams and creeks, and saturates soil. Infiltration of stormwater into water and wastewater systems may occur and presents a threat to public health and safety, when the infrastructure is no longer able to meet operational needs and local demands.

Due to the relatively minor nature of localized flooding, community lifelines are unlikely to be overwhelmed. There may be minor vulnerabilities to the following:

- **Safety and Security** – Law Enforcement/Security, Fire Service, and Community Safety officials may be needed to close roads and redirect traffic during localized flood events. These agencies may also experience flooded roads when responding to emergencies.
- **Communications** – Unless directly affected by flooding, communication systems are not likely to be impacted. Warnings and Messaging may be required to reroute traffic away from localized flooding areas.
- **Transportation** – Highways, roads, and bridges may be temporarily blocked until localized floodwaters recede.
- **Water Systems** – Water and wastewater systems can be infiltrated during localized flooding events. Stormwater drainage systems are often undersized and inadequate to convey the volume of flood waters.

Natural, Historic, and Cultural Resources

Natural resource assets may have some vulnerabilities to localized flood during major storm events, but can benefit from floodwaters, often by design. Many parks and green spaces are designed to take overflow water and release it into the underlying soils and natural areas. Wetlands areas in the City actually help reduce the risk of flooding, as they can absorb excess rainfall that would have to be drained away from impervious surfaces. Flooding can provide many benefits to the natural environment, including recharging wetlands and groundwater, increasing fish production, creating wildlife habitat, and rejuvenating soil fertility. These smaller localized flooding events often provide more benefits to the environment in comparison to negative impacts associated with large flood events. Historic and cultural resources may be at some measure of vulnerability if they are located in areas subject to repeated localized flooding.

Economic Assets and Community Activities of Value

Localized flooding occurs on an annual basis throughout the City during storm events. Most of these events have limited impacts and include those associated with localized flooding due to undersized drainage systems, affecting nearby roads, structures, and other nearby assets. Unless directly affected by localized flooding, these events are unlikely to affect the City's key economic assets.

Community activities of value may have minor vulnerabilities if a localized flood event were to occur during the activity. This may cause the activity to be relocated, cancelled, or rescheduled.

Impacts from Localized Flood

Primary concerns associated with stormwater flooding include impacts to infrastructure that provides a means of ingress and egress throughout the community. Ground saturation can result in instability, collapse, or other damage to trees, structures, roadways and other critical infrastructure. Objects can also be buried or destroyed through sediment deposition. Floodwaters can break utility lines and interrupt services. Standing water can cause damage to crops, roads, and foundations. Other problems connected with flooding and stormwater runoff include erosion, sedimentation, degradation of water quality, losses of environmental resources, and certain health hazards.

Life safety issues from localized flooding would be more limited. The amount and type of damage or flooding that occurs varies from year to year and from storm to storm, depending on the quantity of precipitation and runoff. Localized flooding impacts may be exacerbated in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

Impacts may be exacerbated in the future due to the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. While future development within hazard areas generally contributes to some increase of impacts on City assets, given the limited potential for significant future growth in the City and that localized flooding is a Citywide problem, future changes in land use and development are unlikely to contribute to any notable change in the vulnerability and impacts to the City from this hazard.

Future Development

Future development in the City will add more impervious surfaces causing an increase in stormwater runoff and the continued need to drain these waters. The City will need to be proactive to ensure that increased development has proper siting and drainage for stormwaters. The risk of localized flooding to future development can also be minimized by accurate recordkeeping of repetitive localized storm activity. Mitigating the root causes of the localized stormwater flooding will reduce future risks of losses.

Severe Weather: Extreme Heat

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

According to FEMA, extreme heat is defined as temperatures that hover 10 degrees or more above the average high temperature for the region and lasts for several weeks. Heat kills by taxing the human body beyond its abilities. In extreme heat and high humidity, evaporation is slowed, and the body must work extra hard to maintain a normal temperature." Most heat disorders occur because the victim has been overexposed to heat or has over-exercised for his or her age and physical condition. Older adults, young children, those who are sick or overweight, and those that work or recreate outdoors are more likely to experience heat exhaustion or succumb to extreme heat.

In addition to the risks faced by citizens of the City, there are risks to the built environment from extreme heat. While extreme heat on its own does not usually affect structures, extreme heat during times of drought can cause wildfire risk to heighten. Extreme heat can lead to interruptions in power, power outages, and when combined with high winds, to PSPS events, creating significant issues in the City.

Location and Extent

Heat is a regional phenomenon and affects the whole of the City. Heat emergencies are often slower to develop, taking several days of continuous, oppressive heat before a significant or quantifiable impact is seen. Heat waves do not strike victims immediately, but rather their cumulative effects slowly affect vulnerable populations and communities. Heat waves do not generally cause damage or elicit the immediate response of floods, fires, earthquakes, or other more "typical" disaster scenarios.

The National Weather Service (NWS) has in place a system to initiate alert procedures (advisories or warnings) when extreme heat is expected to have a significant impact on public safety. The expected severity of the heat determines whether advisories or warnings are issued. The NWS HeatRisk forecast provides a quick view of heat risk potential over the upcoming seven days. The heat risk is portrayed in a numeric (0-4) and color (green/yellow/orange/red/magenta) scale which is similar in approach to the Air Quality Index (AQI) or the UV Index. This can be seen in Section 4.3.3 of the Base Plan.

Past Occurrences

Disaster Declarations

There have been no federal or state disaster declarations from extreme heat.

City of Newark Events

The City noted that heat occurs every year, but specific events causing damages could not be recalled. It was noted that noted that the City has averaged 4 extreme heat days per year since 1950, which are classified

as being greater than 89°F. The most number of extreme heat days observed in a calendar year occurred in 2007, when there were 26 extreme heat days.

Vulnerability to Severe Weather: Extreme Heat

Extreme heat is becoming more frequent, intense, longer lasting and geographically widespread. Extreme heat occurs on an annual basis in the Tri-City Planning Area and the City. In recent years, compounded by climate change conditions, summer months continue to get a bit hotter. The whole of the City is at some measure of vulnerability to extreme heat. An assessment of a community's vulnerability to extreme heat begins with an understanding of local exposure to extreme heat. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City lies in an urban heat island. Large, urbanized areas can experience higher temperatures, greater pollution and more negative health impacts during hot summer months when compared to more rural communities. This phenomenon is known as an urban heat island. Heat islands are created by a combination of heat-absorptive surfaces (such as dark pavement and roofing), heat-generating activities (such as engines and generators) and the absence of vegetation (which provides evaporative cooling). According to the U.S. Environmental Protection Agency, daytime temperatures in urban areas are on average 1-6° F higher than in rural areas, while nighttime temperatures can be as much as 22° F higher as the heat is gradually released from buildings and pavement. The Urban Heat Island Index, developed by the California Environmental Protection Agency, quantifies the extent and severity of urban heat islands for individual cities, including urban heat island interactive maps that show the urban heat island effect for each census tract in and around most urban areas throughout the State. This is shown on Figure B-80. Though there is no legend to the map, any area covered by green indicates the urban heat island effect. The darker colors indicate areas with greater effect.

Figure B-80 City of Newark – Urban Heat Island



Source: Cal EPA. Map retrieved 9/29/2023.

US Census Data from the American Housing Survey tracks people in the San Francisco Metropolitan Statistical Area (which includes Union City). According to their data, all occupied housing units have a heat source. However, people may have inadequate heat in their homes because of power interruptions, inadequate heating systems, or because the household cannot afford to run the heat. The use of space heaters and fireplaces to keep warm increases the risk of household fires and carbon monoxide poisoning.

Assets at Risk

Assets at risk from extreme heat include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All populations within the City are vulnerable to extreme heat, but it generally affects people spending large amounts of time outside or without means of cooling indoor structures. During extended periods of high temperatures, extreme heat may overload the demands for electricity to run air conditioners and can present health concerns to individuals. When interruptions in power occur during extreme heat, the risk of heat related illnesses and deaths increases. Extreme heat is a significant concern to vulnerable populations. The unhoused; individuals who exercise or train outdoors; outdoor workers; individuals that lack the resources to afford heat; and the young, old, or medically fragile individuals that are more susceptible to heat related impacts. In addition to vulnerable populations, pets and livestock are at risk to extreme heat conditions.

Structures

Extreme heat normally does not generally impact structures, but individuals working in structures may be affected during periods of extended heat, especially in structures that might not be equipped with air conditioning or other means of cooling. The City noted that extreme heat has caused interruptions to power in the past. Also depending on the structure, sensitive contents such as IT equipment can be impacted, especially if a power outage occurs.

Critical Facilities and Infrastructure, and Community Lifelines

Depending on their type and function, critical facilities and infrastructure can also be affected by extreme heat. Interruptions in power caused by extreme heat can lead to system failures. Schools without air conditioning may have to close or operate on a reduced schedule.

Community lifelines are likely to be affected to some degree by extreme heat events. Impacts to these lifelines include:

- **Safety and Security** – Police and fire personnel may see additional demand during periods of extreme heat. This may also cause emergency responders to be exposed to the effects of higher heat.
- **Food, Hydration, Shelter** – Water distribution may need to occur during extreme heat events. Cooling centers and other public shelters will need to be open and staffed.
- **Health and Medical** – Heat stroke and exhaustion may occur with greater frequency. This can cause EMS and medical personnel to have a large influx of those needing medical attention.
- **Energy** – Power outages can occur in extreme heat situations. Power outages during extreme heat can cause air conditioning systems to go offline, causing injuries or deaths. PSPS events can also occur during times of extreme heat, causing the electric grid to temporarily go offline.
- **Communication**s – Communication infrastructure may be impacted during extreme heat events. Alert warnings and messages may need to be given to the general public. These systems can be temporarily overloaded during emergency events. They also could be affected during related power outages. Communications and IT equipment located inside these facilities may also be at risk to extreme heat.
- **Water Systems** – Water and wastewater systems can be taxed during extreme heat events.

While community lifelines can be affected by extreme heat events, they are not likely to be overwhelmed with the exception of the power grid. As discussed above, extreme heat can contribute to power interruptions and outages that can lead to additional impacts and concerns. Backup power sources should be in place to keep critical facilities and community lifelines online and functioning.

Natural, Historic, and Cultural Resources

City park areas and natural resource assets may be vulnerable during periods of extreme heat. These include turfed areas; landscapes, City trees, wildlife and habitat areas, and wetlands and marsh lands. Recently, trees were lost in areas of the City that were weakened by drought and extreme heat. Extreme heat may also cause drought-like conditions, contributing to other issues. For example, several weeks of extreme heat increases evapotranspiration and reduces moisture content in vegetation, leading to higher wildfire vulnerability in the region for that time period, even if the rest of the season is relatively moist. Historic and cultural resources are not expected to be affected by extreme heat.

Economic Assets and Community Activities of Value

Most economic assets within the City are not vulnerable to extreme heat events. However, during periods of extreme heat, the economy may slow as people stay home or inside. Commercial business revenue, including taxable shopping revenue may be lost during periods of extreme heat. Additionally, extreme heat causes power costs borne by individuals and businesses in the City to increase, which reduces the amount of money available to circulate inside the local economy.

Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors.

Impacts from Severe Weather: Extreme Heat

The City experiences temperatures in excess of 100°F during the summer and fall months. The temperature moves to 105-110°F in rather extreme situations. During these times, drought conditions may worsen, and the City may see an increase in dry fuels. Also, power outage and PSPS events may occur during these times as well. Health issues are the primary concern with this hazard, although economic impacts can also be an issue.

Wildfires strip slopes of vegetation, exposing them to greater amounts of runoff. This in turn can weaken soils and cause failures on slopes. Major landslides can occur several years after a wildfire. Most wildfires burn hot and for long durations that can bake soils, especially those high in clay content, thus increasing the imperviousness of the ground. This increases the runoff generated by storm events, thus increasing the chance of flood. Flooding after fire is often more severe, as debris and ash left from the fire can form mudflows. As rainwater moves across charred and denuded ground, it can also pick up soil and sediment and carry it in a stream of floodwaters. These mudflows can cause significant damage.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. While future development within hazard areas generally contributes to some increase of impacts on City assets, given the limited potential for significant future growth in the City, and that extreme heat affects the whole of the City, future changes in land use and development are unlikely to contribute to any notable change in the vulnerability and impacts to the City from this hazard.

Future Development

Future development of new buildings in the City will likely not be affected by extreme heat. Extreme heat is more likely to affect vulnerable populations. Vulnerability to extreme heat will increase as the average age of the population shifts. It is encouraged that nursing homes and elder care facilities have emergency plans or backup power to address power failure during times of extreme heat and in the event of a PSPS. Low-income residents and unhoused populations are also more vulnerable and should be considered in future growth plans for the City.

Severe Weather: Heavy Rains and Storms

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Storms in the City occur annually and are generally characterized by heavy rain often accompanied by strong winds and sometimes lightning and hail. Approximately 10 percent of the thunderstorms that occur each year in the United States are classified as severe. A thunderstorm is classified as severe when it contains one or more of the following phenomena: hail that is three-quarters of an inch or greater, winds in excess of 50 knots (57.5 mph), or a tornado. Heavy precipitation in the City falls mainly in the fall, winter, and spring months. Wind often accompanies these storms; hail and lightning are rare in the City.

Location and Extent

Heavy rain events occur on a regional basis. Rains and storms can occur in any location of the City. All portions of the City are at risk to heavy rains. Some of the problem areas from heavy rains in the City were shown in the Location and Extent of the Flood: Localized Stormwater Flood discussion above. Most of the severe rains occur during the fall, winter, and spring months in the City. There is no scale by which heavy rains and severe storms are measured. Magnitude of storms is measured often in rainfall and damages. The speed of onset of heavy rains can be short, but accurate weather prediction mechanisms often let the public know of upcoming events. Hail and lightning are rare in the City and Alameda County. Duration of severe storms in the City can range from minutes to hours to days. Information on precipitation extremes can be found in Section 4.3.4 of the Base Plan. It shows that temperature can be below freezing, but that it is rare in the City.

Past Occurrences

Disaster Declarations

According to historical hazard data, severe weather, including heavy rains and storms, is an annual occurrence in the City. This is the cause of many of the federal disaster declarations related to flooding. Disaster declarations from flooding are shown on Table B-58.

Table B-58 Alameda County Disaster Declarations from Flood (Heavy Rain and Storms) 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	20	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (three)

Source: Cal OES, FEMA

City of Newark Events

The City noted that heavy atmospheric river rains fell in the winter of 2022/2023 as well as the winter of 2023/2024. More information on those events can be found in the Past Occurrences section of Flood: 1%/0.2% Annual Chance above.

Vulnerability to Heavy Rain and Storms

Heavy rain and severe storms are the most frequent type of severe weather occurrences in the City. These events can cause both significant and localized flooding. Flooding can be worse during times where the ground is already saturated. Wind often accompanies these storms and has caused damage in the past. Hail and lightning are rare in the City, but also can cause damage, with lightning occasionally igniting wildfires.

The whole of the City is at some measure of vulnerability to heavy rain and storms. An assessment of a community's vulnerability to heavy rains and storms begins with an understanding of local exposure to heavy rain and storms. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City noted that heavy rains can cause both localized flooding and flooding in the floodplains. Atmospheric river storms are of great concern as they can dump large amounts of water in single storms, or in back-to-back storms as seen in the winter of 2022/2023.

Assets at Risk

Assets at risk from heavy rain and storms include people and populations; structures; critical facilities and infrastructure and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All populations in the City have some measure of risk to heavy rains and storms. Those populations that work or recreate outside and unhoused individuals are more vulnerable to impacts from heavy storm events. Heavy rains and storms occur every year and do not generally cause significant adverse impacts to individuals; it is the secondary hazard, flooding, that poses the biggest impact to people. Populations at

risk to flooding resulting from heavy rains and storm events include those who live in floodplains (discussed in further detail in the Flood: 1%/0.2% Annual Chance section above) and those who live in and near localized flooding areas floodplains (discussed in further detail in the Flood: Localized Stormwater Flooding section above).

Structures

Structures in the City have some risk to heavy rains and storms. Structures built to modern building codes are built to withstand heavy rains and storms (including high winds and lightning). During a heavy storm, localized flooding may cause water intrusion into buildings from the outside. Trees can be downed causing impacts to structures. Older homes and buildings may be at increased risk to heavy rains and storms. Power outages during severe storm events can occur, impacting the use of structures until the power is back online.

Critical Facilities and Infrastructure, and Community Lifelines

Heavy rain and storms can affect critical facilities and infrastructure and community lifelines during large events. Power outages may occur taking facilities offline. High winds can down power lines and trees impacting facilities. Water intrusion into facilities and infrastructure can impact operations. City roads, streets, and bridges can be impacted resulting in closures restricting traffic flow in the City. In certain areas, large storms can cause erosion and localized landslides which can impact affected facilities. Many critical facilities are built to modern design standards that take heavy rains and storms into account when siting and building these structures, and others may need to be retrofitted to better withstand these events.

Community lifelines likely to have some vulnerability to heavy rains and storms include:

- **Safety and Security** – Search and rescue and swiftwater teams may be called on to perform riskier duties during times of heavy rains and flooding. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies taxing these resources.
- **Food, Hydration and Shelter** – Those displaced by flooding and the unsheltered may have needs for food and water.
- **Health and Medical** – Injuries can occur during storm events. Patient movement from accident scenes by EMS may have to be rerouted around inundated and closed streets. Public health can be at risk from contaminated floodwaters caused by heavy rains.
- **Energy** –Significant storms can cause power outages throughout the City. Downed trees can fall on electric lines in the City, causing power outages. High winds and other lightning strikes can cause transformers and other infrastructure to be damaged. Fuel supplies can be temporarily cut off, until flooding subsides.
- **Communications** – Communication systems may be damaged during severe storm events. An influx of service calls to dispatch centers for reporting of flooding, power outages, downed trees, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about road and closures, washouts, and debris or flooding on roads.
- **Transportation** – Highways, local roads, and bridges may be impacted by heavy rains and flooding causing road closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents.
- **Hazardous Material** – Hazardous material facilities can be affected by heavy rains and flooding. Releases during these times can contaminate the environment, affecting drinking water and natural systems.

- **Water Systems** – Water, drainage, and wastewater systems can experience storm related impacts, including excessive water intrusion which can affect the operations of these systems.

Short-term, heavy rains and storms can cause both widespread flooding as well as extensive localized drainage issues throughout the City. As storms continue to increase in intensity, existing drainage and stormwater systems may be overwhelmed at least temporarily contributing to an increase in flooding related impacts. While components of these lifelines may be damaged or otherwise impacted, it is unlikely that large storm events would overwhelm and take out any of these lifelines in the City as a whole.

Natural, Historic, and Cultural Resources

Large storm events and associated flooding can affect natural, historic, and cultural resources. Silt and sediment can damage natural areas. Trees can be uprooted and downed by high winds. Extended periods of rainfall can erode natural banks along waterways and degrade soil stability for terrestrial species. While some natural systems can be adversely impacted during these large storms, heavy rain events can also provide benefits. Groundwater and wetland areas can be recharged and water supplies replenished. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to structures affected by large storm events, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged, and lost during extreme storm and flood events.

Economic Assets and Community Activities of Value

Heavy rain and storm events can cause direct damage to economic assets such as businesses and commercial centers. During extreme events, the economy may slow as people stay home or inside. Business revenue may be reduced during extended storm events. Community activities of value may see a reduction in attendance, impacting revenues associated with these events, especially those that occur outdoors. Events may be cancelled or rescheduled.

Impacts from Heavy Rain and Storms

Impacts from heavy rains and storms include damage to property, critical facilities and infrastructure, and the natural landscape. This includes: erosion; downed trees; damaged utility structures and infrastructure; power outages; road damage and blockages; and even lightning strikes to critical infrastructure and people. Lightning can also cause wildfires and urban fires to occur. Landslides occur when the soil on slopes becomes oversaturated and fails. Climate change may cause these impacts to worsen.

Actual damage associated with the primary effects of severe storms and heavy rains has been somewhat limited. It is the secondary hazards caused by these severe weather events, such as floods and erosion that would likely have the greatest impact.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of

about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. While future development within hazard areas generally contributes to some increase of impacts on City assets, given the limited potential for significant future growth in the City and that heavy rains and storms affect the whole of the City, future changes in land use and development are unlikely to contribute to any notable change in the vulnerability and impacts to the City from this hazard. In addition, the City has a development review process which includes the consideration of hazard constraints and updated building codes that should further limit the impacts of these hazards on City assets.

Future Development

Building codes in the City ensure that new development is built to current building standards, which should reduce the risk to future development in the City from heavy rains and storms. New critical facilities such as communications towers and others should be built to withstand hail damage, lightning, and thunderstorm winds. With adherence to development standards, future losses to new development should be minimal. Changes in population could increase the number of people impacted by heavy rains and storms. Changes in land use may also amplify the impacts of heavy rains and storms, as additional impervious surfaces can cause additional runoff and localized flooding throughout the City.

Tsunami

Likelihood of Future Occurrence–Unlikely
Vulnerability–Medium

Hazard Profile and Problem Description

The 2023 State of California Hazard Mitigation Plan defines a tsunami as a wave triggered by any form of land displacement along the edge or bottom of an ocean or lake. This can be submarine landslides or submarine dip slip fault ruptures that result in seafloor uplift or down-drop. This mass movement often translates to a tsunami or gravity wave within the overlying water. In the Tri-City Planning Area, earthquake events, many of these originating in Alaska or Japan, have been the cause of most historic tsunami events. The coastline of California and the San Francisco Bay are predominantly at risk to tsunamis from earthquake events occurring many miles away.

Tsunamis can travel at speeds of over 600 miles per hour in the open ocean and can grow to over 50 feet in height when they approach a shallow shoreline, causing severe damage to coastal development. Recent studies of the continental shelf off the California coast indicate a potential for underwater landslides capable of generating damaging tsunamis that could threaten coastal communities. As well, tsunami events originating as far away as Alaska and Japan can also trigger events that could be damaging to California coastal areas as already experienced in the Bay Area.

Location and Extent

Tsunamis can affect lower lying areas coastal areas of the City adjacent to the Bay or tidally influenced rivers. There is no scientific scale for tsunami, only depth of inundation and measure of the water penetration inland. Speed of onset can be short (minutes to hours). The CGS has done an analysis of areas along the California coast that would be necessary to evacuate in case of a tsunami. These areas in the City are shown on Figure B-81 and detailed in Table B-59.

Figure B-81 City of Newark – Tsunami Coastal Evacuation Zones

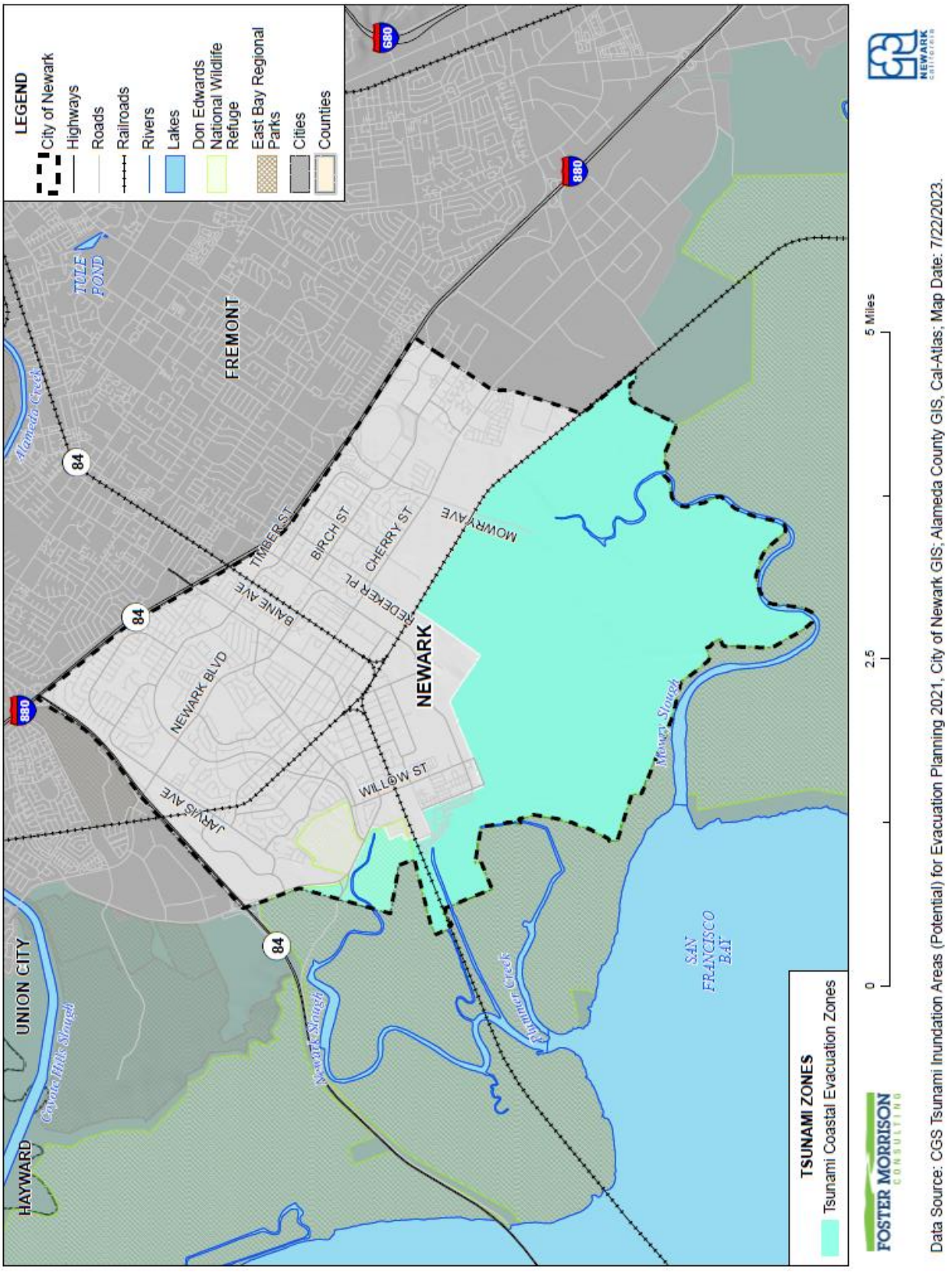


Table B-59 City of Newark –Tsunami Coastal Evacuation Zone Geographical Extents

Jurisdiction	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Newark	4,210.69	28.7%	363.71	3.8%	3,846.98	74.8%

Source: CGS Tsunami Inundation Areas

Past Occurrences

Disaster Declarations

There have been no past federal or state disaster declarations due to tsunami.

City of Newark Events

The 2021 Alameda County LHMP reported that more than 71 tsunamis have been recorded in San Francisco Bay since 1854. Most of these tsunamis were generated by earthquakes in distant subduction zones near Russia, Japan, or Alaska. The worst tsunami to hit the Bay Area was generated in Alaska by a M 9.2 earthquake on March 27, 1964. This event produced a 2-foot runup in the nearby City of Alameda and a 4-foot runup in the City of Oakland. On March 11, 2011, a tsunami generated in Japan from the Fukushima earthquake resulted in a 2-foot runup in the nearby cities of Alameda and Berkeley. Minor damage to docks and piles was reported. No damages were reported in Newark.

Vulnerability from Tsunami

Tsunamis arrive as a series of successive crests (high water levels) and troughs (low water levels). These successive crests and troughs can occur anywhere from 5 to 90 minutes apart; however, they usually occur 10 to 45 minutes apart. As a tsunami enters the shoaling waters near a coastline, its speed diminishes, its wavelength decreases, and its height increases greatly. The first wave usually is not the largest. Several larger and more destructive waves often follow the first one. As tsunamis reach the shoreline, they may take the form of a fast-rising tide, a cresting wave, or a bore (a large, turbulent wall-like wave). The bore phenomenon resembles a step-like change in the water level that advances rapidly (from 10 to 60 miles per hour).

Portions of the City are at some measure of vulnerability to tsunami. An assessment of a community's vulnerability to tsunami begins with an understanding of local exposure to tsunami. This is included in the Local Concerns section below followed by a discussion of the City's Assets at Risk to this hazard.

Local Concerns

The City is concerned with the new bayside buildings and their proximity to the San Francisco Bay. This could cause direct economic impacts. Indirect economic costs (such as lost business) and adverse socio-psychological impacts have the potential to negatively affect people and their communities.

Assts at Risk

Assets at risk from tsunami include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

People and populations in the tsunami evacuation zones are at risk to high velocity wave or flood inundation. Certain vulnerable populations within areas prone to a tsunami event may be at increased risk to this hazard, especially during a large event with minimal advance notice. These vulnerable populations include: the unhoused, those with limited mobility, and those that lack the resources to leave the area. Given the coastal location of a potential tsunami, people that recreate in these areas would also be at risk. Risks to people include drowning as well as being injured or killed by debris that gets added to the floodwaters in this type of event.

City residents that live in the tsunami evacuation zones would be the most vulnerable. To further evaluate the impact to the residential populations within the City, the CGS Tsunami Coastal Evacuation Zone was overlayed on the parcel layer and linked to the Assessor data to identify parcels with a residential property use. Those residential parcel centroids that intersect the evacuation zone were counted and multiplied by the 2020 Census Bureau average household factors for Newark – 3.32. Analysis results are shown in Table B-60.

Table B-60 City of Newark – Improved Residential Parcels and Population in the Coastal Evacuation Zone

Jurisdiction	Improved Residential Parcels	Population at Risk
City of Newark	309	1,026

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), US Census Bureau

Structures

Certain structures in the City are at risk from tsunami. GIS was used to determine the possible impacts of tsunami inundation within the City of Newark. The CGS Tsunami Coastal Evacuation Zone was overlaid with the 2022 Alameda County Parcel/Assessor database. Table B-61 shows the parcel counts, land and improved values (i.e., those with a structure improvement on the parcel), estimated content replacement values, and total values in the City by property use that fall in the CGS Tsunami Coastal Evacuation Zone.

Table B-61 City of Newark – Count and Value of Parcels (and Structures) in Tsunami Coastal Evacuation Zone by Property Use

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Agricultural	27	1	$2,749,511	$3,339,480	$3,339,480	$9,428,471

Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Commercial	17	2	$12,453,202	$131,804	$131,804	$12,716,810
Government / Institutional	37	0	$6,817	$0	$0	$6,817
Industrial	3	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	514	309	$140,302,750	$218,651,300	$109,325,650	$468,279,700
Unknown	4	1	$24,055,983	$42,970	$0	$24,098,953
Utilities	5	0	$0	$0	$0	$0
Vacant	328	7	$101,833,942	$6,653,210	$0	$108,487,152
Newark Total	**935**	**320**	**$281,402,205**	**$228,818,764**	**$112,796,934**	**$623,017,903**

Source: CGS, Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023),

Critical Facilities and Infrastructure, and Community Lifelines

As previously noted, communities rely on roads, rail corridors, and related biking and pedestrian routes for transportation, and on water infrastructure for drinking water, wastewater service, and draining streets of rainwater. Damage to any one of these systems can threaten public safety, wreak havoc on daily life, impact properties far from flood zones, and result in economic impacts that cascade throughout California. These can be affected by a tsunami. Tsunami inundation presents a threat to both critical facilities and infrastructure, as well as community lifelines as discussed in the following sections.

Critical Facilities and Infrastructure

Tsunami inundation flooding presents a risk to the critical facilities and infrastructure in the City. A separate analysis was performed on the critical facility inventory in the City to determine critical facilities fall into the tsunami coastal evacuation zones and, if so, which zone they fall into. Using GIS, the tsunami coastal evacuation zones were overlayed on the critical facility GIS layer. No facilities fall in the tsunami zone in the City; as such no maps or tabular analysis is presented.

Community Lifelines

Tsunami inundation presents a threat to life and property in the City, including impacts to community lifelines. Community lifelines that would be vulnerable to flooding include:

- **Safety and Security** – Search and rescue teams may be called on to perform riskier duties during a tsunami event. Police, Fire, EMS, and Public Works personnel are often called on to respond during flood emergencies. During large events, these services may become stretched.
- **Food, Hydration, Shelter –**Floodwater is often contaminated with sewage, which can lead to illness and affect clean drinking water. Those who are displaced by tsunami may need to be provided with both clean drinking water, as well as food.
- **Health and Medical** – Loss of life and injuries can occur during significant tsunami events. A large tsunami flood event may make locating and rescuing affected individuals extremely difficult; many

may we washed out to the Bay. As well associated flooding may complicate the ability to transport the injured possibly requiring workarounds or rerouting of injured to other facilities. Public health can also be at risk. Floodwaters generated from a tsunami can become contaminated, which can lead to illness and affect clean drinking water. Floodwaters can also pick up large amounts of debris which can further injure those that get caught up in the floodwaters.

- **Energy** – Floods can cause power grid issues and lead to power outages. During tsunami flood events gas lines may break or otherwise be damaged from erosion and debris in floodwaters.
- **Communications** – Communication systems in these areas can be damaged. An influx of service calls to dispatch centers for reporting of flooding, power outages, or other issues can occur. Messaging systems need to be deployed during these times to let the public know about closures of roads, beaches, and coastal areas as well as any requirements for evacuations or sheltering.
- **Transportation** – Transportation networks can be affected, such as flood and debris damage to bridges, railways and roads. This can cause road closures and cut off entire areas. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Life safety can also be an issue on roads flooded by a tsunami.
- **Hazardous Material** – Hazardous material facilities can be affected by tsunami flooding. Releases during these times can cause public health concerns, contaminate drinking water, and can cause impacts to natural systems and the environment.
- **Water Systems** – Tsunami flooding can affect the ability for water and wastewater systems to operate, especially in areas where pipes and critical infrastructure are located within tsunami evacuation zones.

During a tsunami event, many community lifelines in the City have some level of vulnerability, but it is unlikely that any of these lifelines would be overwhelmed.

Natural, Historic, and Cultural Resources

A tsunami event can affect natural, historic and cultural resources located within the coastal areas of the City within the Tsunami Coastal Evacuation Zone. Wildlife habitats and wetland areas can be damaged or destroyed by floodwaters. Contaminated floodwaters can pollute rivers and habitats. Silt and sediment can destroy natural areas. Trees can be uprooted by high-velocity water flow. Historic and cultural resources may also be affected. Generally, the impacts are associated with damage to historic structures within the tsunami inundation areas, but other cultural resources such as those associated with Native Americans and old tribal areas can also be disturbed, damaged and lost during extreme tsunami events.

Economic Assets and Community Activities of Value

Tsunami events can cause direct damage to economic assets such as businesses and commercial centers located in affected areas. Based on the hazard parcel analysis, numerous commercial and industrial parcels as well as government/institutional use parcels are located in these coastal areas. Cargill Salt is in this area. The facility doesn't generate a significant amount of sales tax. The Silliman Center and the Sr. Center are also in these areas. Impacts to the City would be more connected to loss of employment.

During extreme events, the economy may slow while recovery efforts are prioritized. Business revenue may be reduced during extended events. Community activities and events in these coastal areas may be cancelled or rescheduled.

Impacts from Tsunami

Coastal areas located within Tsunami Coastal Evacuation Zones could be significantly affected by a tsunami. Tsunamis can cause loss of life, damage to property and critical facilities and infrastructure, and adversely impact the environment and local economies. Tsunami inundation can result in flooding, erosion and scouring, water contamination, and spread of disease due to standing water.

Natural resource areas, marsh areas, and wetlands lie along the coastal areas, and could be negatively impacted by tsunami inundation. Water quality issues can also occur due to contamination of floodwaters. Loss of wetlands and marsh lands from erosion and wetland migration due to tsunami inundation can reduce the natural filtration provided by wetland plants, also increasing contributing to water quality issues. Healthy coastal ecosystems can be degraded or lost.

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual t0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. If a tsunami impacts the City, there is potential that those facilities closer to shore may be impacted more severely than those located outside of tsunami evacuation areas. Future development that continues to occur in tsunami evacuation areas will increase possible impacts to the City.

Future Development

The City considers tsunami coastal evacuation zones in their future land use planning and in the siting, designing and construction of new public or private developments.

Future development areas and their vulnerability to tsunami are discussed further in the below GIS analysis.

GIS Analysis

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure B-82 show the locations of the future development areas overlayed on the CGS Tsunami Coastal Evacuation Zones. Table B-46 shows the details of the future development areas that are located in these zones.

Figure B-82 City of Newark – Future Development Areas in Tsunami Coastal Evacuation Zones

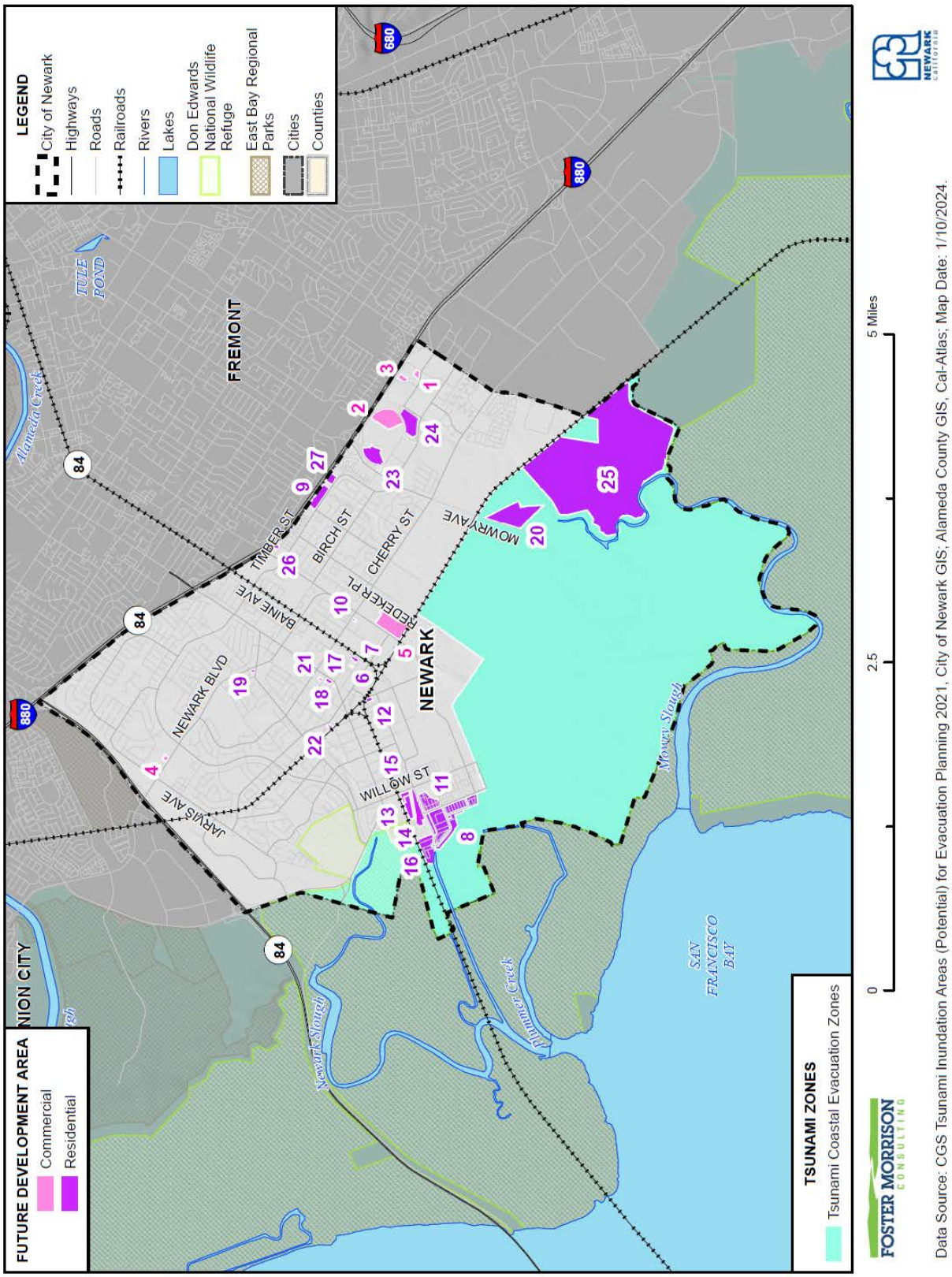


Figure B-83 City of Newark – Future Development Areas in Tsunami Coastal Evacuation Zones

Property Type / Site Number	Future Development Name	Site Count
Residential		
8	Bridgeway / Gateway	1
16	Harbor Pointe	1
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**4**
Tsunami Coastal Evacuation Zone Total		**4**

Source: CGS, City of Union City GIS

Wildfire

Likelihood of Future Occurrence–Highly Likely
Vulnerability–Medium

Hazard Profile and Problem Description

Wildland fire and the risk of a conflagration is an ongoing concern for the City of Newark. Throughout California, communities are increasingly concerned about wildfire safety as increased development in the foothills and mountain areas and subsequent fire control practices have affected the natural cycle of fire regimes. Wildland fires affect grass, forest, and brushlands, as well as structures. Where there is human access to wildland areas the risk of fire increases due to a greater chance for human carelessness and historical fire management practices. Historically, the fire season extends from early spring through late fall of each year during the hotter, dryer months; however, in recent years, the risk of wildfire has become a year around concern. Fire conditions arise from a combination of high temperatures, low moisture content in the air and fuel, accumulation of vegetation, and high winds. These weather conditions can result in red flag (e.g., fire weather) days, and can result in PSPS events in the City. While wildfire risk has predominantly been associated with more remote forested areas and wildland urban interface (WUI) areas, significant wildfires can also occur in more populated, urban areas.

Wildfire Smoke and Air Quality

Smoke from wildfires is made up of gas and particulate matter, which can be easily observed in the air. Air quality standards have been established to protect human health with the pollutant referred to as PM2.5 which consists of particles 2.5 microns or less in diameter. These smaller sizes of particles are responsible for adverse health effects because of their ability to reach the lower regions of the respiratory tract.

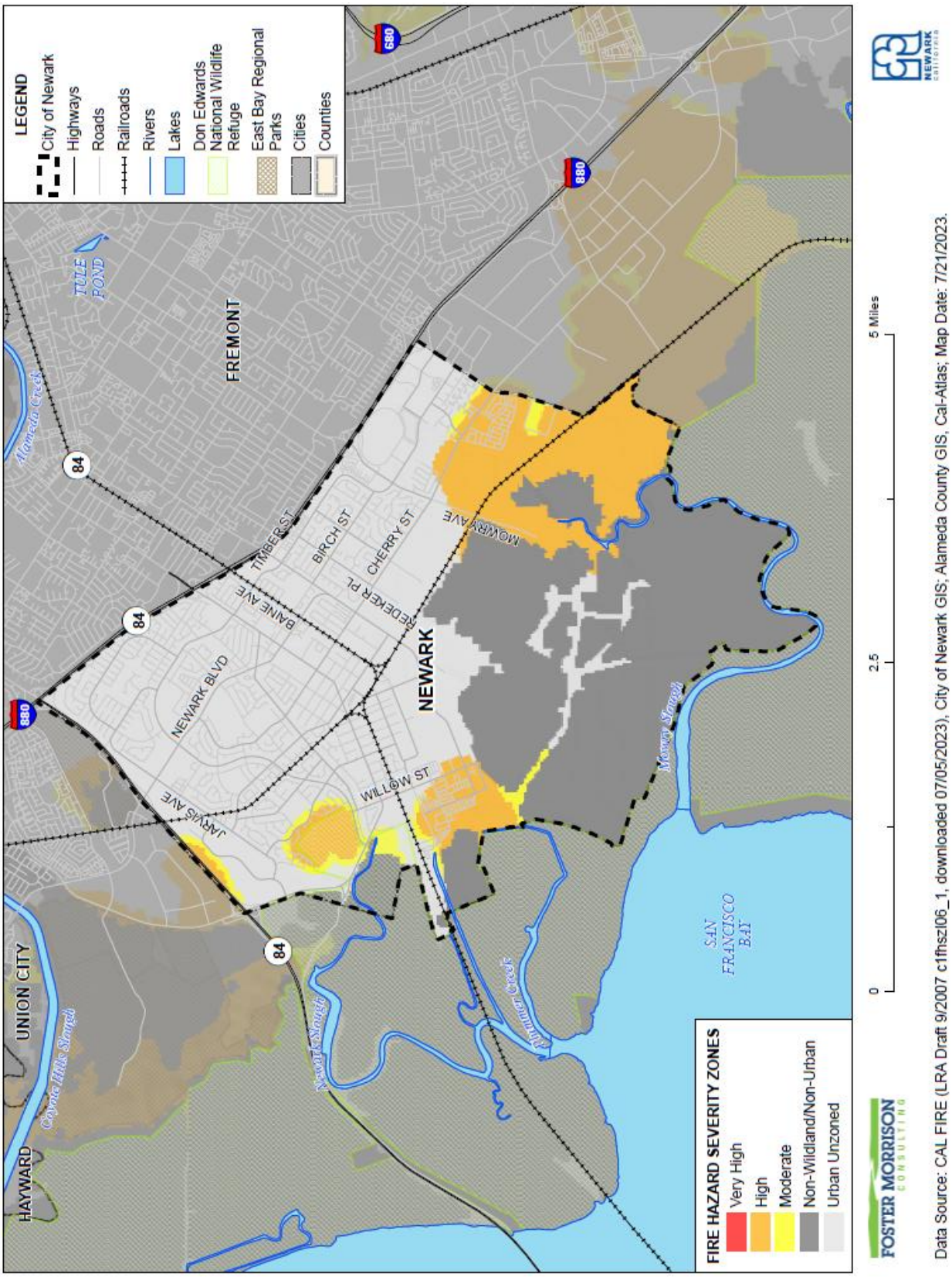
Wildfire smoke can have negative effects to those who live in or near a fire burn area. Smoke and air pollution from wildfires can be a severe health hazard. Significant wildfires occurring in nearby northern California communities since the 2017 LHMP Update have created significant air pollution affecting area residents. City residents have been affected by wildfire smoke and poor air quality, from fires both within the East Bay area and from those much further away. During 2018 during the Camp Fire in Butte County,

the City experienced 13 days of the worst air quality previously experienced in the region. It was reported that during this period, residents could not see to drive or bike or hike as one could not see the trails, or trees, or cars, or other people. This in part contributed to rare, offshore winds bringing smoke into the area where it settled.

Location and Extent

Wildfire can affect all areas of the City. CAL FIRE has estimated that the risk varies across the City and has created maps showing risk variance. Following the methodology described in Section 4.3.19 of the Base Plan, wildfire maps for the City of Newark were created. Figure B-84 shows the CAL FIRE Fire Hazard Severity Zone (FHSZ) in the City. As shown on the maps, FHSZs within the City range from Urban Unzoned to High.

Figure B-84 City of Newark – CAL FIRE Fire Hazard Severity Zones



Wildfires tend to be measured in structure damages, injuries, and loss of life as well as on acres burned. Fires can have a quick speed of onset, especially during periods of drought or during hot dry summer months. Fires can burn for a short period of time or may have durations lasting for a week or more. Geographical FHSZ extent from CAL FIRE is shown in Table B-62.

Table B-62 City of Newark – CAL FIRE Fire Hazard Severity Zone Geographical Extents

Fire Hazard Severity Zone	Total Acres	% of Total Acres	Improved Acres	% of Total Improved Acres	Unimproved Acres	% of Total Unimproved Acres
Very High	0	0.0%	0	0.0%	0	0.0%
High	2,478.89	16.9%	1,530.64	16.0%	948.25	18.4%
Moderate	935.49	6.4%	844.18	8.9%	91.31	1.8%
Non-Wildland/Non-Urban	3,120.03	21.2%	240.25	2.5%	2,879.78	55.9%
Urban Unzoned	8,153.84	55.5%	6,922.42	72.6%	1,231.42	23.9%

Source: CAL FIRE

Past Occurrences

Disaster Declarations

There has been one state and two federal disaster declaration due to fire, as shown in Table B-63. These were from an unnamed California Forest and Brush Fire in 1970, and the Tunnel Fire in 1991.

Table B-63 Alameda County – State and Federal Wildfire Disaster Declarations 1950-2020

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Wildfire	1	1970	2	1970, 1991

Source: Cal OES, FEMA

City of Newark Events

Other City wildfire related events include the following those listed below:

2017 – The City noted an event in 2017. While it did not burn in the City, smoke from North Bay & Wine Country Fire created poor air quality throughout the City. This impacted the whole city and was critical that lasted beyond a week.

2018 – The City also noted the Camp Fire in Butte County in 2018. Though Butte County is a fair distance away from Newark (over 150 miles to the northeast), smoke from the Camp Fire created poor air quality throughout the City. This impacted the whole city and was critical that lasted beyond a week.

2020 – The City noted an event in August and September of 2020. Smoke from the SCU Complex fire created poor air quality throughout the City. With the increase of winds, the smoke from the different fires caused multiple days of unhealthy air conditions for City of Newark. This impacted the whole city and was critical that lasted beyond a week. Smoke from the August Complex and LNU Lightning Complex fires also affected the City during this time. In addition, the Coyoted Hills Area fire burned in August. This fire burned in the Coyote Hills Regional Park. Fremont Fire Department crews were able to put out the fire after it burned 4 acres. This affected air quality in the City. So much smoke blew in to Newark, people went home early and many City facilities, such as recreational facilities, were shut down.

2023 – Members of the public noted a fire event at Mayhew's Landing on July 15, 2023. A fire started near the silo at Don Edwards Mayhew Landing. The day was hot and dry, but fortunately little wind occurred. The fire was started by either fireworks or from unsheltered individuals. The fire was burning foliage at the tall silo, only a short distance from many houses adjacent to the Refuge, along Bridgepoint Drive. Due to small bridges in the area, only a smaller fire truck was able to immediately respond. A gate had to be pushed over (as it was locked and keys were not quickly available) to get larger firefighting equipment to the blaze. An image of the fire can be seen in Figure B-85.

Figure B-85 Fire near Silo at Mayhew Landing



Source: Wayne Miller, Newark Resident.

The Alameda County Fire Department noted the number of fire responses in the City since 2017:

- 2017 – 122
- 2018 – 141
- 2019 – 120
- 2020 – 140
- 2021 – 118
- 2022 – 164
- 2023* – 99

*2023 is through 8/1/2023.

Vulnerability to Wildfire

Risk and vulnerability to the City from wildfire is of concern. Wildfires that occur in the City occur from a variety of both natural and manmade causes. The City can be affected both by fires that start on or near City lands as well as those that start elsewhere and move into the City. In addition to burning large areas of land, air quality can be affected in the City by fires occurring inside the City as well as those from many miles away. As growth continues and populations increase in the City, the potential for wildfires will also increase.

The whole of the City is at some measure of vulnerability to wildfire. An assessment of a community's vulnerability to wildfire begins with an understanding of local exposure to wildfire. This is included in the Local Concerns section below. After that section, assets at risk are discussed.

Local Concerns

There is a risk of wildfire in the adjacent hills due to the interface of residential and open space land uses. These factors, combined with natural weather conditions common to the area, including periods of drought, high temperatures, low relative humidity, and periodic winds, can result in frequent and sometimes catastrophic fires. Any fire, once ignited, has the potential to quickly become a large, out-of-control fire. However, the City has kept the areas to the north and east of the City as Open Space, which helps reduce the risk of wildfire.

Assets at Risk

Assets at risk from wildfire include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources; and economic assets and community activities of value. These are discussed in the following sections.

People and Populations

All populations are at some vulnerability to wildfire. Certain vulnerable populations are at greater risk to the effects of wildfire as well as smoke and air quality issues that wildfires bring. Vulnerable populations include:

- Unhoused
- Infants and children under age five and their caregivers

- Elderly (65 and older)
- Individuals with disabilities
- Individuals' dependent on medical equipment
- Individuals who exercise or recreate outdoors
- Individuals who work outdoors
- Individuals with impaired mobility

To further evaluate the impact to the residential population within the City the CAL FIRE FHSZ dataset was overlayed on the parcel layer. Those residential parcel centroids that intersect the FHSZs were counted and multiplied by the 2020 Census Bureau average household factors for the City of Newark – 2.99. According to this analysis, there is a total population of 22,972 residents of Newark at risk to moderate or higher FHSZs. This is shown in Table B-64.

Table B-64 City of Newark – Improved Residential Parcels and Population by CAL FIRE Fire Hazard Severity Zone

Jurisdiction	Very High		High		Moderate	
	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk	Improved Residential Parcels	Population at Risk
City of Newark	0	0	1,782	5,916	472	1,567

Source: CAL FIRE, US Census Bureau Average Household Sizes

Structures

All structures in the City have some risk to wildfire. GIS was used to determine the possible impacts of wildfire within the City of Newark. The methodology described in Section 4.3.17 of the Base Plan was followed in determining structures and values at risk in CAL FIRE's Fire Hazard Severity Zone layer. Summary analysis results for Newark are shown in Table B-65, which summarizes total parcel counts, improved parcel counts and their structure values by fire hazard severity zone. Table B-66 breaks out the Table B-65 by adding the property use details by fire hazard severity zone for the City.

Table B-65 City of Newark – Count and Value of Parcels (and Structures) by CAL FIRE Fire Hazard Severity Zone

Fire Hazard Severity Zone	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Very High	0	0	$0	$0	$0	$0
High	2,441	1,819	$780,191,541	$1,507,491,007	$917,426,257	$3,205,108,805
Moderate	574	477	$141,642,095	$224,772,940	$149,092,441	$515,507,476
Non-Wildland/Non-Urban	33	1	$8,044,636	$3,339,480	$3,339,480	$14,723,596
Urban Unzoned	14,110	13,089	$3,260,025,941	$6,488,659,703	$4,422,870,921	$14,171,556,565
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), CAL FIRE

Table B-66 City of Newark – Count and Value of Parcels (and Structures) by CAL FIRE Fire Hazard Severity Zone and Property Use

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Very High						
Agricultural	0	0	$0	$0	$0	$0
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	0	0	$0	$0	$0	$0
Industrial	0	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Unknown	0	0	$0	$0	$0	$0
Utilities	0	0	$0	$0	$0	$0
Vacant	0	0	$0	$0	$0	$0
Very High Total	**0**	**0**	**$0**	**$0**	**$0**	**$0**
High						
Agricultural	8	0	$1,190,880	$0	$0	$1,190,880
Commercial	19	4	$29,382,260	$63,754,574	$63,754,574	$156,891,408
Government / Institutional	30	0	$0	$0	$0	$0
Industrial	19	16	$73,442,833	$138,528,936	$207,793,404	$419,765,173
Recreational	0	0	$0	$0	$0	$0
Residential	2,117	1,782	$603,496,653	$1,291,756,552	$645,878,279	$2,541,131,484
Unknown	3	1	$21,533,134	$42,970	$0	$21,576,104
Utilities	8	0	$0	$0	$0	$0
Vacant	237	16	$51,145,781	$13,407,975	$0	$64,553,756
High Total	**2,441**	**1,819**	**$780,191,541**	**$1,507,491,007**	**$917,426,257**	**$3,205,108,805**
Moderate						
Agricultural	4	0	$516,054	$0	$0	$516,054
Commercial	4	0	$0	$0	$0	$0
Government / Institutional	10	0	$27,955	$0	$0	$27,955
Industrial	5	5	$21,825,824	$36,705,968	$55,058,952	$113,590,744
Recreational	0	0	$0	$0	$0	$0
Residential	496	472	$86,428,299	$188,066,972	$94,033,489	$368,528,760

Fire Hazard Severity Zone / Property Use	Total Parcel Count	Improved Parcel Count	Total Land Value	Improved Structure Value	Estimated Contents Value	Total Value
Unknown	0	0	$0	$0	$0	$0
Utilities	0	0	$0	$0	$0	$0
Vacant	55	0	$32,843,963	$0	$0	$32,843,963
Moderate Total	**574**	**477**	**$141,642,095**	**$224,772,940**	**$149,092,441**	**$515,507,476**
Non-Wildland/Non-Urban						
Agricultural	10	1	$990,946	$3,339,480	$3,339,480	$7,669,906
Commercial	0	0	$0	$0	$0	$0
Government / Institutional	15	0	$0	$0	$0	$0
Industrial	2	0	$0	$0	$0	$0
Recreational	0	0	$0	$0	$0	$0
Residential	0	0	$0	$0	$0	$0
Unknown	1	0	$2,522,849	$0	$0	$2,522,849
Utilities	2	0	$0	$0	$0	$0
Vacant	3	0	$4,530,841	$0	$0	$4,530,841
Non-Wildland/Non-Urban Total	**33**	**1**	**$8,044,636**	**$3,339,480**	**$3,339,480**	**$14,723,596**
Urban Unzoned						
Agricultural	6	0	$70,464	$0	$0	$70,464
Commercial	396	313	$552,066,806	$984,558,791	$984,558,791	$2,521,184,388
Government / Institutional	288	17	$13,282,841	$15,447,837	$15,447,837	$44,178,515
Industrial	83	75	$298,583,237	$679,132,416	$1,018,698,626	$1,996,414,279
Recreational	3	3	$1,480,029	$1,214,920	$1,214,920	$3,909,869
Residential	12,983	12,674	$2,246,519,380	$4,805,901,569	$2,402,950,747	$9,455,371,696
Unknown	17	0	$0	$0	$0	$0
Utilities	77	0	$0	$0	$0	$0
Vacant	257	7	$148,023,184	$2,404,170	$0	$150,427,354
Urban Unzoned Total	**14,110**	**13,089**	**$3,260,025,941**	**$6,488,659,703**	**$4,422,870,921**	**$14,171,556,565**
Newark Total	**17,158**	**15,386**	**$4,189,904,213**	**$8,224,263,130**	**$5,492,729,099**	**$17,906,896,442**

Source: Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023), CAL FIRE

Critical Facilities and Infrastructure, and Community Lifelines

Wildfire presents a threat to both critical facilities and infrastructure, as well as community lifelines. The following analysis identifies critical facilities and infrastructure at risk to wildfire, followed by a discussion of vulnerability of community lifelines.

Critical Facilities and Infrastructure

Many critical facilities in the City are at risk to wildfire. An analysis was performed on the critical facility inventory in Newark in identified Cal Fire's FHSZ mapping. Critical facilities in CAL FIRE FHSZs in the City of Newark are shown in Figure B-86 and detailed in Table B-67. Details of critical facility definition, type, name and address and jurisdiction by fire hazard severity zone are listed in Appendix F.

Figure B-86 City of Newark – Critical Facilities in CAL FIRE Fire Hazard Severity Zones

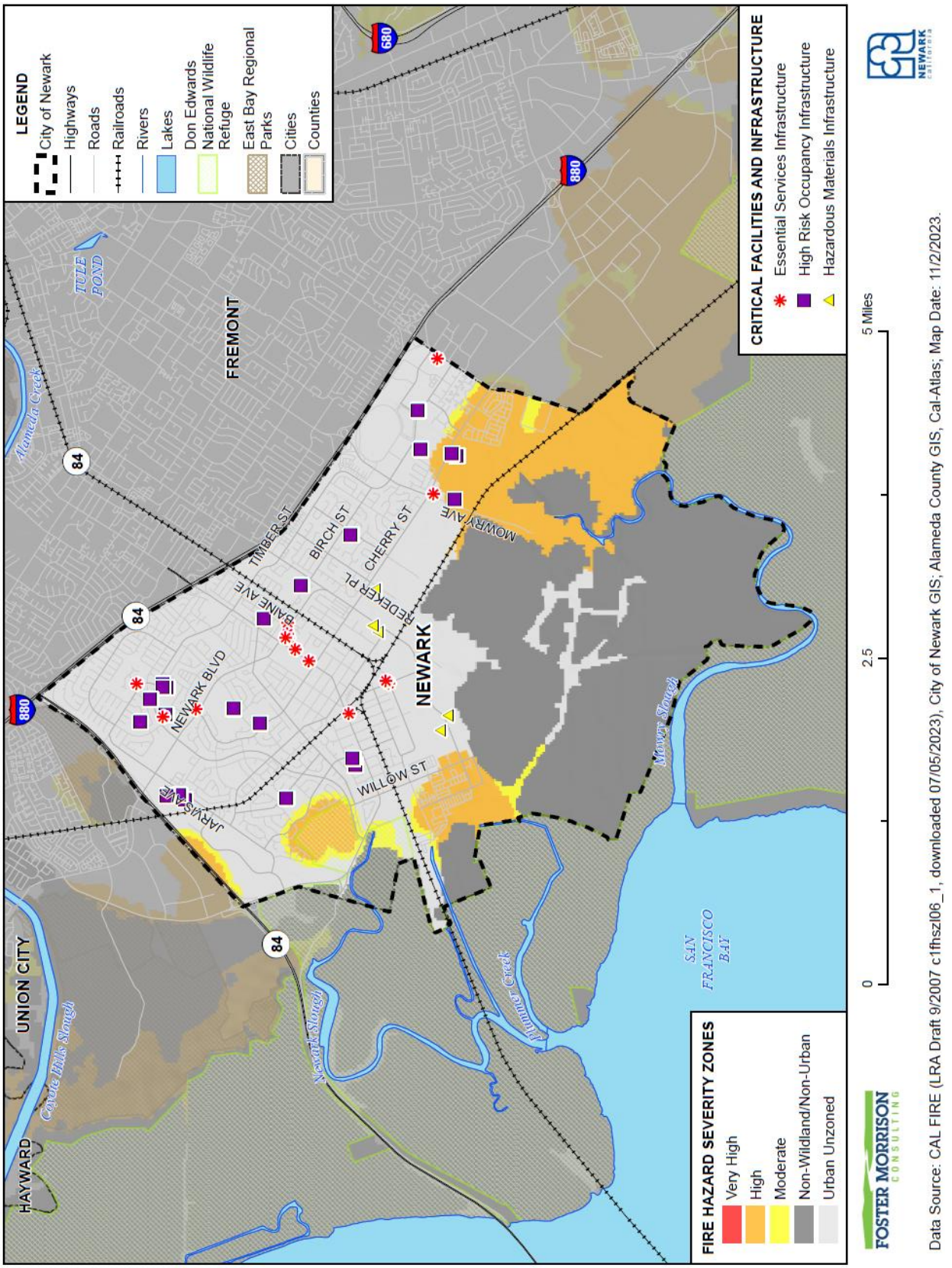


Table B-67 City of Newark – Critical Facilities by Category and Type in CAL FIRE Fire Hazard Severity Zone

Critical Infrastructure Category / Fire Hazard Severity Zone	Critical Infrastructure Type	Facility Count
High		
Essential Services Infrastructure	City Facility	1
	Total	**1**
High Risk Occupancy Infrastructure	Day Care	1
	School	2
	Total	**3**
High Total		**4**
Urban Unzoned		
Essential Services Infrastructure	Bridge	1
	City Facility	6
	Fire Station	3
	Hospital	3
	Police Station	1
	Total	14
High Risk Occupancy Infrastructure	Day Care	6
	School	14
	Total	20
Hazardous Materials Infrastructure	Chemical Facility	3
	Distribution Center	1
	Gas Facility	1
	Paper Facility	1
	Total	6
Urban Unzoned Total		**40**
Grand Total		44

Source: CAL FIRE, City of Newark GIS

Community Lifelines

Wildfire presents a threat to life and property, including to community lifelines in the City. Community lifelines that would be vulnerable to wildfire include:

- **Safety and Security** –Police, Fire, and EMS personnel are often called on to respond during fire emergencies. This would be especially true if a wildfire occurred in or near the City. Emergency resources may be stretched during a large event.
- **Food, Hydration, Shelter** – Shelters may need to be opened to handle those displaced by a wildfire. Food and water would need to be provided.

- **Health and Medical** – There may be injuries and deaths from wildfire. Patient movement from accident scenes by EMS may have to be rerouted due to fire or smoke issues. Hospitals could see an influx of injured. Public health can be at risk from air quality issues from smoke.
- **Energy** – Wildfires could impact large areas of above ground electric infrastructure, causing widespread power outages. Even the threat of wildfire can cause power outages when fire weather conditions lead to PSPS events. Fire may cause fuel transportation to be delayed, causing local shortages.
- **Communications** – Communication systems can be damaged during a wildfire. An influx of service calls to dispatch centers for reporting of wildfire, power outages, or other issues can occur. Calls to and from family and friends during a wildfire can further overwhelm communication systems such as cell towers and other infrastructure. Demand may exceed the capacity of these systems to remain operational during response efforts. Messaging systems need to be deployed during these times to let the public know about road closures or evacuation routes.
- **Transportation** – Highways and local roads may see closures. These closures can affect response personnel (EMS, Fire, Police) as well as cause additional traffic issues for residents. Evacuation routes may be affected and overwhelmed during a large event.
- **Hazardous Material** – hazardous material facilities can be affected by wildfire. A release during these times can cause additional risk to responders, as well as additional exposure to the environment.
- **Water Systems** – Water systems may be taxed during wildfires. Access to water for firefighting can also be a challenge if power outages occur in affected areas. Wastewater systems can also be affected by an increase in silt, debris ash, and other materials entering the systems.

A large wildfire event could temporarily overwhelm many facilities and community lifelines in the City.

Natural, Historic, and Cultural Resources

Natural, historic, and cultural resources located within areas at risk to wildfire would be vulnerable. Should a wildfire occur in the City, the impacts to natural, historic and cultural resources could be extensive and include air pollution, contamination from water runoff containing toxic products, and other environmental discharges or releases from burned materials affecting soils, habitat areas, wildlife, and aquatic resources. Historic and cultural resources can be affected and are often more vulnerable due to their older age, construction type, and lack of fire prevention infrastructure such as sprinklers.

Economic Assets and Community Activities of Value

Wildfires in the City can cause direct damage to economic assets such as businesses and commercial centers located in affected areas. Assets at risk likely include the Silliman Center, NewPark Mall, Senior Center, and Cargill Salt. During extreme events, the economy may slow while recovery efforts are prioritized. Business revenue may be reduced during extended events. Community activities and events in areas affected by wildfire (and smoke and air quality issues) may be cancelled or rescheduled.

Impacts from Wildfire

Potential impacts from wildfire include loss of life and injuries; damage to structures (commercial, industrial, and residential) and other improvements, natural and cultural resources, croplands, and timber; and loss of recreational opportunities. Wildfires can cause short-term and long-term disruption to the City. Fires can have devastating effects on watersheds through loss of vegetation and soil erosion, which may impact the City by changing runoff patterns, increasing sedimentation, reducing natural and reservoir water

storage capacity, and degrading water quality. Fires can also affect air quality in the City; smoke and air pollution from wildfires can be a severe health hazard. Smoke impacts may come from wildfires outside the City, as well as from within.

Although the physical damages and casualties arising from WUI fires may be severe, it is important to recognize that they also cause significant economic impacts by resulting in a loss of function of buildings and infrastructure. Economic impacts of loss of transportation and utility services may include traffic delays/detours from road and bridge closures and loss of electric power, potable water, and wastewater services. Schools and businesses can be forced to close for extended periods of time. Recently, the threat of wildfire, combined with the potential for high winds, heat, and low humidity, has caused PG&E to initiate a PSPS which can also significantly impact a community through loss of services, business closures, and other impacts associated with loss of power for an extended period. In addition, catastrophic wildfire can create favorable conditions for other hazards such as flooding, landslides, and erosion during the rainy season.

The impacts of a fire are felt long after the fire is extinguished. In addition to the loss of property in fires, the loss in vegetation and changes in surface soils alters the environment. When supporting vegetation is burned, hillsides become destabilized and prone to erosion. The burnt surface soils are harder and absorb less water. When winter rains come, this leads to increased runoff, erosion, and landslides in hilly areas.

Impacts that are not quantified, but can be anticipated in large future events, include:

- Injury and loss of life;
- Commercial and residential structural and property damage;
- Disruption of and damage to public infrastructure, utilities, and services;
- Damage to roads/bridges resulting in loss of mobility;
- Significant economic impact (jobs, sales, tax revenue) to the community; and
- Negative impact on commercial and residential property values

These impacts may be exacerbated by the effects of climate change, changes in population patterns (migration, density, or the makeup of socially vulnerable populations), and changes in land use and development.

As discussed in the hazard profile section, climate change is anticipated to exacerbate this hazard over time. While population projections for the City (as shown on Table B-14) show average annual growth rates of about 0.65% over the next 25 years, these anticipated changes in population are relatively small, which limits additional impacts. Vulnerable populations are consistent across the City (as shown on Figure B-2 to Figure B-7 above), which indicates that there will be limited additional impacts to vulnerable populations.

As described in the land use discussion at the end of Section B.4.1, the land use map from the General Plan shows very little vacant land. Future development within hazard areas generally contributes to some increase of impacts on City assets, as can be seen on Table B-68. However, the City has a development review process which includes the consideration of hazard constraints and updated building codes that should further limit the impacts of these hazards on City assets.

Future Development

Additional growth and development within moderate or higher fire hazard severity zones in the City would place additional values at risk to wildfire. City building codes are in effect and should continue to be updated as appropriate to reduce this risk.

Future development areas and their vulnerability to wildfire are discussed further in the below GIS analysis.

GIS Analysis

The City provided 28 future development areas which were used as the basis for the inventory of future development for the City. These were mapped in GIS. Where multiple parcels are listed, the parcels are merged to form one polygon, and the hazards assigned are based on the centroid of the polygon. Figure B-87 show the locations of the future development areas overlayed on the CAL FIRE FHSZs. Table B-68 shows the details of the future development areas that are located in the moderate or higher FHSZs.

Figure B-87 City of Newark – Future Development Areas in CAL FIRE Fire Hazard Severity Zones

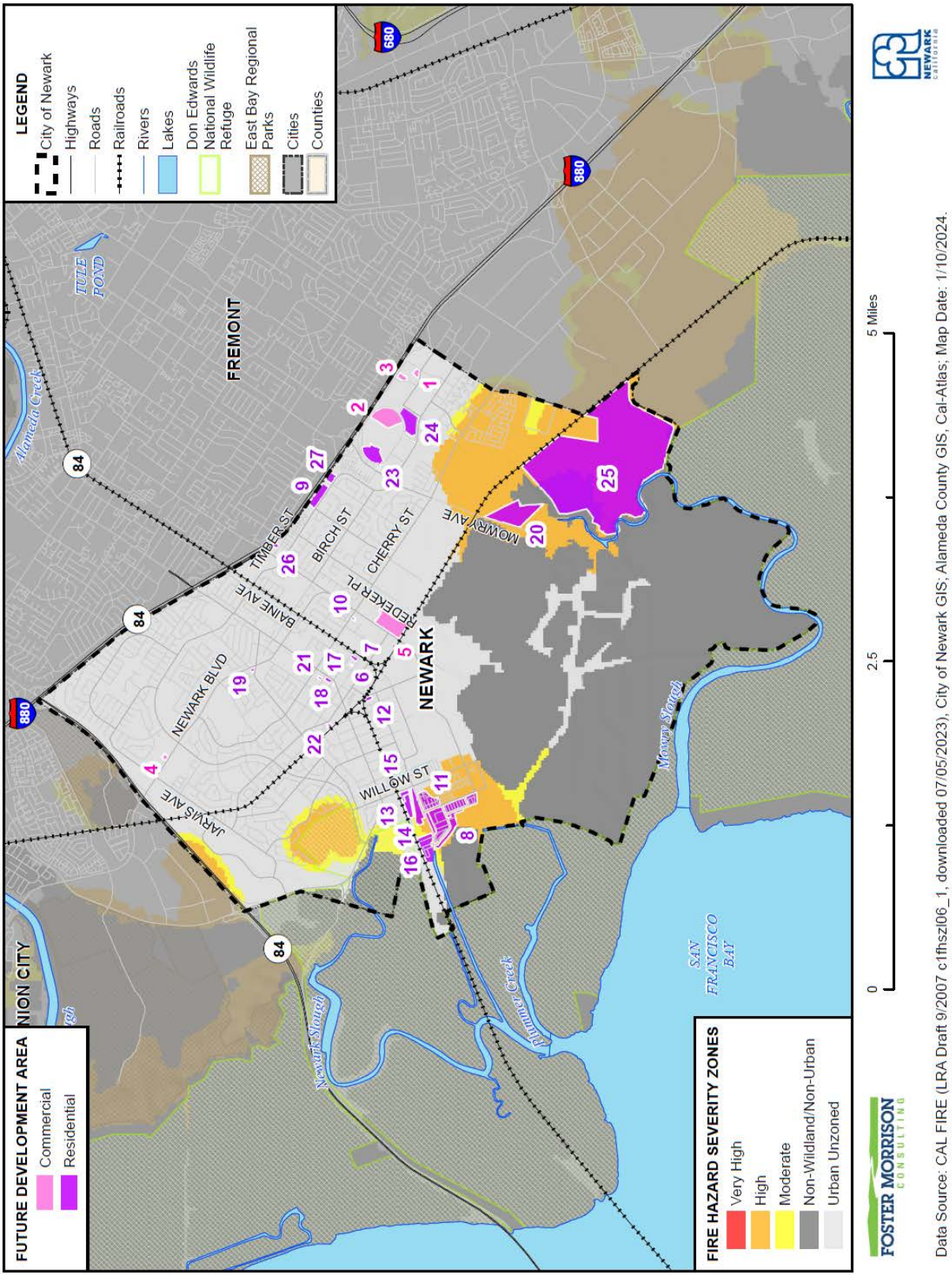


Table B-68 City of Newark – Future Development Areas in CAL FIRE Fire Hazard Severity Zones

Fire Hazard Severity Zone / Property Type / Site Number	Future Development Name	Site Count
High		
Residential		
8	Bridgeway / Gateway	1
11	Compass Bay	1
16	Harbor Pointe	1
20	Mowry Village	1
25	Sanctuary West	1
Residential Total		**5**
High Total		**5**
Moderate		
Residential		
14	FMC Willow - "South" of Hetch Hetchy	1
Residential Total		**1**
Moderate Total		**1**

SOURCE: CAL FIRE, City of Newark GIS

B.5 Capability Assessment

Capabilities are the programs and policies currently in use to reduce hazard impacts or that could be used to implement hazard mitigation activities. This capabilities assessment is divided into five sections: regulatory mitigation capabilities, administrative and technical mitigation capabilities, fiscal mitigation capabilities, mitigation education, outreach, and partnerships, and other mitigation efforts.

B.5.1. Regulatory Mitigation Capabilities

Table B-69 lists regulatory mitigation capabilities, including planning and land management tools, typically used by local jurisdictions to implement hazard mitigation activities and indicates those that are in place in the City of Newark.

Table B-69 City of Newark Regulatory Mitigation Capabilities

Plans	In Place Y/N	Does the plan address hazards? Can the plan be used to carry out mitigation actions? When was it last updated??
Capital Improvements Plan	Y	While the plan doesn't directly address hazards, it can be used to carry out mitigation actions. It was updated in 2022.
Climate Change Adaptation Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. The plan is in need of an update as it is dated 2010. Update is being undertaken in 2024.
Community Wildfire Protection Plan	N	

Comprehensive/Master Plan	Y	City General Plan. Safety Element addresses hazards and can be used to carry out mitigation actions. The Safety Element was updated in 2023.
Continuity of Operations Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2016.
Economic Development Plan	Y	Annex to the General Plan. Mitigation actions could be carried out. Plan is dated 2013 and is the process of being updated.
Land Use Plan	Y	Land Use Element of the General Plan. Implementation actions will be carried out. Plan is dated 2013.
Local Emergency Operations Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2016.
Stormwater Management Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2019.
Transportation Plan	N	
Other (describe)		
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective way to reduce hazard impacts? Is the ordinance adequately administered and enforced?**
Acquisition of land for open space and public recreation use	N	
Building code	Y	Building code is an effective and efficient way to reduce hazard impacts. Code is enforced in the City.
Flood insurance rate maps	Y	FEMA floodplains are enforced as part of the floodplain ordinance.
Floodplain ordinance	Y	Floodplain ordinance is enforced and is an adequate way to reduce hazard impacts.
Natural hazard-specific ordinance (stormwater, steep slope, wildfire)	Y	City has a stormwater ordinance that can be used to reduce hazard impacts. It is enforced.
Subdivision ordinance	Y	City has a subdivision ordinance, updated in 2023, that can be used to reduce hazard impacts by choosing siting. It is enforced.
Zoning ordinance	Y	City has a zoning ordinance, updated in 2018, that is used to reduce hazard impacts by regulating land use throughout the city. It is enforced.
Other	N	
How can these capabilities be expanded and improved to reduce risk?		
The Climate Action Plan needs to be updated and improved. That will help to reduce the risk in the City of Newark by identifying additional impacts and policies to implement for mitigation. The CAP update is underway in 2024.		
Plans	**In Place Y/N**	**Does the plan address hazards? Can the plan be used to carry out mitigation actions? When was it last updated??**
Capital Improvements Plan	Y	While the plan doesn't directly address hazards, it can be used to carry out mitigation actions. It was updated in 2022.
Climate Change Adaptation Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. The plan is in need of an update as it is dated 2010. Update is being undertaken in 2024.

Community Wildfire Protection Plan	N	
Comprehensive/Master Plan	Y	City General Plan. Safety Element addresses hazards and can be used to carry out mitigation actions. The Safety Element was updated in 2023.
Continuity of Operations Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2016.
Economic Development Plan	Y	Annex to the General Plan. Mitigation actions could be carried out. Plan is dated 2013 and is the process of being updated.
Land Use Plan	Y	Land Use Element of the General Plan. Implementation actions will be carried out. Plan is dated 2013.
Local Emergency Operations Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2016.
Stormwater Management Plan	Y	Plan addresses hazards and can be used to carry out mitigation actions. Plan is dated 2019.
Transportation Plan	N	
Other (describe)		
Land Use Planning and Ordinances	**Y/N**	**Is the ordinance an effective way to reduce hazard impacts? Is the ordinance adequately administered and enforced?**
Acquisition of land for open space and public recreation use	N	
Building code	Y	Building code is an effective and efficient way to reduce hazard impacts. Code is enforced in the City.
Flood insurance rate maps	Y	FEMA floodplains are enforced as part of the floodplain ordinance.
Floodplain ordinance	Y	Floodplain ordinance is enforced and is an adequate way to reduce hazard impacts.
Natural hazard-specific ordinance (stormwater, steep slope, wildfire)	Y	City has a stormwater ordinance that can be used to reduce hazard impacts. It is enforced.
Subdivision ordinance	Y	City has a subdivision ordinance, updated in 2023, that can be used to reduce hazard impacts by choosing siting. It is enforced.
Zoning ordinance	Y	City has a zoning ordinance, updated in 2018, that is used to reduce hazard impacts by regulating land use throughout the city. It is enforced.
Other	N	
How can these capabilities be expanded and improved to reduce risk?		
The Climate Action Plan needs to be updated and improved. That will help to reduce the risk in the City of Newark by identifying additional impacts and policies to implement for mitigation. The CAP update is underway in 2024.		

Source: City of Newark

City of Newark General Plan (2013)

The City of Newark General Plan Program serves as the blueprint for future growth and development and provides comprehensive planning for the future. It encompasses what the City is now, and what it intends to be, and provides the overall framework of how to achieve this future.

The General Plan includes a Safety Element that focuses on safety issues to be considered in planning for the present and future development of the City. Identified hazards include wildfire, geologic/seismic, flooding, and other natural and man-made hazards (such as hazardous materials). Mitigation-related actions and objective summaries are as follows:

Land Use Element

- GOAL LU-1 Maintain a desirable quality of life in Newark by preserving a small town, neighborhood-oriented atmosphere and sustaining a balanced mix of land uses.
  - ✓ Policy LU-1.2 Growth Focus Areas. Achieve a future growth pattern which includes new neighborhoods on vacant land along the southern and western edges of the city, and infill development in transit-served areas such as Old Town and the Greater NewPark Mall Area. Zoning and development review decisions should recognize these areas as the priority locations for growth and change over the next 20 years.

Conservation and Sustainability Element

- GOAL CS-1 Protect Newark's natural environment, landscape, and physical features.
  - ✓ Policy CS-1.4 Soil Erosion. Identify and eliminate erosion problems on public and private lands. The potential for erosion should be considered as a design and engineering factor in new development.

- GOAL CS-2 Conserve Newark's wetlands and baylands.
  - ✓ Policy CS-2. 5 Development Near Wetlands. Manage land use and development on upland sites in a manner that minimizes off-site impacts to nearby wetlands.

- GOAL CS-3 Conserve and enhance Newark's water resources.
  - ✓ Policy CS- 3.1 Protection of Water Resources. Ensure that land use decisions consider the availability of water for domestic and non-domestic uses, potential impacts on groundwater quality and groundwater recharge capacity, and potential off-site impacts on water quality.
  - ✓ Policy CS- 3.2 Water Conservation Standards. Promote water conservation through development standards, building requirements, irrigation requirements, landscape design guidelines, and other applicable City policies and programs.

- GOAL CS-5 Reduce greenhouse gas emissions in Newark and make reduction of the City's carbon output a high priority.
  - ✓ Policy CS- 5.8 Planning for Sea Level Rise. Require proposed development in lowlying areas to comply with applicable City of Newark standards for construction in flood hazard zones.

Safety Element

- GOAL SAF-2 A community that protects and enhances the availability, conservation, and health of water resources for long-term needs.
  - ✓ Policy SAF-2.4 Drought Awareness. Collaborate with public agencies and community organizations to raise awareness of long-term climate and drought impacts and encourage emergency planning efforts to consider drought.

- ✓ Policy SAF 2.9 Long-Term Water Supply. Explore for expanding water desalination projects to help ensure long-term supply of water and build local resiliency against long-term droughts.

- GOAL SAF-3 A resilient and healthy community that adapts to changing climate conditions and mitigates the effects of extreme weather impacts.
  - ✓ Policy SAF 3.1 Urban Heat Island Effect. Develop standards and requirements for municipal projects that can incorporate natural cooling techniques to reduce the urban heat island effect.
  - ✓ Policy SAF 3.2 Cooling Amenities. Explore the need for additional cooling centers in the southern and eastern areas of the community and reduce barriers to access existing centers.
  - ✓ Policy SAF 3.3 Household Cooling. Explore and educate residents on programs and solutions for helping households with cooling during extreme heat periods, including new or replacement air conditioning, and other household cooling mechanisms where air conditioning is not feasible, such as improved insulation, tree canopy, urban greening, cool roofs, cool pavements, cool paints and materials, and other mechanisms to help reduce extreme heat impacts for households.
  - ✓ Policy SAF 3.4 Parks and Open Spaces. Identify potential for expanding existing parks or creating new parks in the community that are accessible by all residents in under-resourced locations, including the southwestern and eastern areas of the community, where access to existing parks is low.
  - ✓ Policy SAF 3.5 Urban Forest Management. Plan for the sustainable growth and management of the urban forest to help mitigate greenhouse gas emissions and extreme heat impacts.
  - ✓ Policy SAF 3.6 Urban Greening. Prioritize urban greening where the tree canopy is relatively lower than other parts of the city, including near the center of the community between Central and Mowry Avenue.
  - ✓ Policy SAF 3.7 Health and Safety. Coordinate with local health providers, schools, and community organizations to share information and resources regarding extreme heat and heat-related illnesses.
  - ✓ Policy SAF 3.8 Heat and Active Transportation. Identify active transportation routes in need of amenities to protect against extreme heat, and prioritize bikeways, walkways, and trails near schools, community centers, and commuter routes.

- GOAL SAF-4 Reduced risks to life and property associated with geologic hazards such as seismically induced surface rupture, ground shaking, ground failure, tsunamis, seiches, dam failure, and liquefaction.
  - ✓ Policy SAF 4.1 Earthquake Safety in New Construction. Continue to require new development to meet structural integrity standards which minimize the potential for damage during earthquakes.
  - ✓ Policy SAF 4.2 Seismic Retrofits. Continue to encourage the retrofitting of existing structures to reduce the potential for damage during earthquakes.
  - ✓ Policy SAF 4.3 Earthquake Awareness. Inform Newark residents and businesses of steps they can take to reduce earthquake-related hazards.
  - ✓ Policy SAF 4.4 Infrastructure Resilience. Maintain standards for roads and infrastructure that consider geologic hazards, including subsidence and liquefaction.
  - ✓ Policy SAF 4.5 Evaluate Critical Facilities. Work with private property owners of critical facilities that are prime targets for structural retrofits as identified in the MJHMP (e.g., churches, hotels, hospitals, other gathering facilities) to evaluate the ability of the buildings to withstand earthquakes and to address any deficiencies identified to improve earthquake safety.

- ✓ Policy SAF 4.6 Evaluate Critical Public Facilities. Evaluate public facilities that are critical to health and safety, including emergency response (e.g., police and fire stations, and water and sewer facilities) for their ability to withstand earthquakes, and prioritize addressing any deficiencies identified to improve earthquake safety.
- ✓ Policy SAF 4.7 Require Geotechnical Investigation in High-Risk Liquefaction Zones. Require geological and geotechnical investigations in areas with high potential for earthquake-induced liquefaction as part of the environmental and development review process.

- GOAL SAF-5 A community with sustainable development practices that reduce risks to life and property associated with flooding.
  - ✓ Policy SAF 5.1 Planning to Avoid Flood Hazards. Monitor flood-prone areas in Newark and use this data for land use, transportation, and infrastructure capital improvement and planning purposes. Flood-resistant construction techniques and minimum building elevations shall be required to reduce flood hazards.
  - ✓ Policy SAF 5.2 Maintaining Drainage Patterns. Prohibit development, grading, and land modification activities that would adversely affect Newark's drainage system or create potential erosion impacts.
  - ✓ Policy SAF 5.3 Residential Development in the Flood Plain. Limit development within low-lying areas at high risk from flooding. Require any new residential development, including streets and other surface improvements, to be constructed above the 100-year flood elevation.
  - ✓ Policy SAF 5.4 Non-Residential Development in the Flood Plain. Limit development within low-lying areas at high risk from flooding. Require that any new non-residential development, including commercial and industrial uses, be flood-proofed or constructed on pads elevated above the 100-year flood elevation.
  - ✓ Policy SAF 5.5 Storm Drain Maintenance. Manage and maintain the storm drainage system to avoid flooding and reduce the negative effects of stormwater runoff.
  - ✓ Policy SAF 5.6 Mitigating Downstream Flood Impacts. Create standards to ensure that the design of new development reduces the potential for downstream flooding, including measures for maximizing porous pavement and on-site drainage retention.
  - ✓ Policy SAF 5.7 Flood Control Improvements. Work with Alameda Flood Control District (ACFCD) & Water Control District (WCD) on improvements to the storm drain, flood control channel, and levee system to ensure that these systems continue to protect Newark neighborhoods and business districts from flooding.
  - ✓ Policy SAF 5.8 Sea-Level Rise. Evaluate the effects of rising sea level on the potential for flooding in low-lying areas, and monitor sea-level rise modeling for anticipated impacts. Consider compounding impacts from sea-level rise, including storm surges and extreme tides.
  - ✓ Policy SAF 5.9 Regional Planning for Sea-Level Rise. Participate in regional planning and adaptation efforts to address sea-level rise impacts to low-lying areas. Information on flood hazards related to sea-level rise should be used to ensure that flood risk is reduced.
  - ✓ Policy SAF 5.10 Wetlands Preservation. Protect wetlands and natural open space from development by creating setback and buffer zones, and increase awareness of natural flooding benefits provided by wetlands.
  - ✓ Policy SAF 5.11 Green Infrastructure. Identify green technologies and natural systems that can be incorporated into planning and development practices to address flooding hazards and provide community co-benefits.

- ✓ Policy SAF 5.12 Impervious Surfaces. Continue to identify opportunities for retrofitting impervious surfaces and increasing natural land cover to provide flooding mitigation and community co-benefits.
- ✓ Policy SAF 5.13 Roadway Maintenance. Identify risks to critical roadways and plan for the sustainable management and maintenance of roadways, prioritizing those that serve as evacuation routes and connect to essential services, emergency response, and critical facilities. Coordinate with surrounding local and regional agencies, including the County and ACFCD&WCD, on roadway maintenance for stormwater and flooding mitigation.

- GOAL SAF-6 A community protected from the risk of flood and dam inundation hazards with reliable drainage infrastructure and flood-ready development practices.
  - ✓ Policy SAF 6.1 Dam Safety. Advocate for dam safety and maintenance at the Calaveras, Del Valle, James H. Turner, Middlefield, and Patterson Dams and take the precautions necessary to protect Newark properties from related flood hazards in the event of dam failure.
  - ✓ Policy SAF 6.2 Critical Facilities and Services. Ensure that public facilities and services in flooding and dam inundation zones (such as police and fire stations, and water and sewer facilities) are designed to maximize their resilience and ability to function during and after a flood event.
  - ✓ Policy SAF 6.3 New Development. Require development projects to submit hydrologic and drainage studies to ensure that new development in Newark is designed to mitigate for dam inundation and is not located within hazard zones.
  - ✓ Policy SAF 6.4 Flooding Resource Education. Empower communities within dam inundation zones to access flood hazard mitigation and protection resources.
  - ✓ Policy SAF 6.5 Dam Failure in Emergency Plans. Ensure that city emergency response plans include contingencies for catastrophic dam failure.

- GOAL SAF-7 A city where life and property are protected from urban wildfire hazards
  - ✓ Policy SAF 7.1 Fire Hazard Reduction. Explore wildfire fuel reduction planning programs to reduce the quantity of flammable material in Newark, including in those areas in Newark adjacent to the San Francisco Bay.
  - ✓ Policy SAF 7.2 Interagency Coordination. The City shall coordinate with ACFCD and neighboring fire agencies to plan for and coordinate future fire prevention and suppression needs.
  - ✓ Policy SAF 7.3 Adequacy of Access. Require adequate access and clearance for fire equipment, fire suppression personnel, and evacuation for new development.

- GOAL SAF-9 Fast, efficient, and coordinated response to natural and man-made emergencies and disasters.
  - ✓ Policy SAF 9.1 Complete Circulation System. Provide for a traffic circulation system that assures the City's capacity to deliver emergency services. This should include measures to ensure that all areas of the city can be accessed by emergency vehicles in the event a grade-level railroad crossing is blocked or otherwise inaccessible.
  - ✓ Policy SAF 9.2 Awareness of Preparedness Programs. Increase public awareness of City emergency preparedness programs and resources, including the CERT program.
  - ✓ Policy SAF 9.3 Hazard Awareness. Promote public awareness of hazards, along with the resources available to help homeowners make their homes safer and be better prepared for an emergency. Individuals and businesses should have access to up-to-date information that allows them to

collaborate with regional agencies and community-based organizations to expand communications, to improve hazard preparation and response, and to be able to make informed decisions about potential safety hazards and the level of risk they are willing to accept.

- ✓ Policy SAF 9.4 Standard Emergency Management System (SEMS) Plan. In cooperation with the ACFD, maintain and regularly update emergency plans for floods, earthquakes, fires, hazardous materials, and other disasters. Plans should be consistent with SEMS protocol.
- ✓ Policy SAF 9.5 Interagency Coordination. Cooperate with other public agencies, nearby cities, community groups, and private enterprise in developing comprehensive disaster preparedness, assistance, and post-disaster recovery plans in order to maximize mutual aid response.
- ✓ Policy SAF 9.6 Utility Resilience. Work with local gas, electric, cable, water, sewer, and other utility providers to maintain their facilities and ensure their ability to function (or be quickly restored) during and following a disaster.
- ✓ Policy SAF 9.7 Technology. Support the use of communication technologies to transmit information to other agencies and the public during emergencies, including:
  - Nixle emergency alert system.
  - Integrated Public Alert and Warning System (IPAWS).
  - Social media operated by Alameda County Fire Department, Newark Police Department and other public safety agencies and municipalities.
  - Other systems to provide outreach to residents without telephone or Internet service.
- ✓ Policy SAF 9.8 Expanding Outreach. Ensure that emergency preparedness information is available in multiple languages, consistent with Newark's demographics.
- ✓ Policy SAF 9.9 Critical Facilities. Ensure that public facilities that are critical to health and safety (such as police and fire stations, and water and sewer facilities) are designed to maximize their resilience and ability to function during and after a natural disaster.
- ✓ Policy SAF 9.10 Evacuation Planning. Using the methodology and conclusions from the Evacuation Planning analysis in Appendix B, consider the following when formalizing potential or imminent evacuation routes:
  - Increasing capacity through the use of contraflow lanes or shoulders.
  - Managed traffic control, including turn restrictions and route or ramp closures, to maximize outflows from evacuation areas.
  - Faster clearing of fire-induced road closures.
  - Prohibiting or restricting street parking on high hazard days.
  - Continually improving communication systems and strategies that improve disaster alerts.
  - Instigating dynamic route guidance and monitoring.
  - Phase evacuations.
  - Vehicle volume reduction during evacuations, such as encouraging household to use only one vehicle to evacuate.
  - Close monitoring of power issues that could affect traffic signals and slow down evacuations.
- ✓ Policy SAF 9.11 Resident Evacuation. To improve emergency preparedness, inform residents of shelter locations and evacuation routes and procedures for storing or taking valued items before large-scale evacuations.
- ✓ Policy SAF 9.12 Residential Care and Assisted Living Facility Planning. Require all residential care and assisted living facilities to produce an emergency action plan, to ensure these

facilities are well prepared for a disaster and have alternative access plan and evacuation routes to protect the vulnerable during a disaster.

- ✓ Policy SAF 9.13 Private Sector Collaboration. Encourage the involvement of the private sector in disaster response and post-disaster recovery efforts.
- ✓ Policy SAF 9.14 First Responder Collaboration. Continue to collaborate with ACFD and Newark Police Department to ensure effective response and quick recovery following an incident
- ✓ Policy SAF 9.15 Natural Hazards Education Programming & Events. Establish a natural hazards public education program and events to develop comprehensive public outreach for emergency preparedness during natural hazards and implementing risk reduction strategies for Newark residents.

City of Newark Comprehensive Emergency Management Plan (2013)

The City of Newark Comprehensive Emergency Management Plan provides strategic guidance designed to assist policymakers and City staff in the preventing of, preparing for, mitigating of, responding to, and recovering from natural, civil, and technological disasters. It is comprised of five volumes:

- Emergency Operations Plan
- Standard Operating Procedures
- Functional Annexes
- All-Hazards Planning Assumptions and Considerations
- Tools and Supporting Documents

City of Newark Capital Improvement Plan (2022)

The City of Newark's two-year budget is comprised of the Biennial Budget, the Capital Improvement Plan (CIP), and the Five-Year Forecast. In preparing the CIP, the Five-Year Forecast provides significant guidance by establishing priorities for the City, identifying special needs, and establishing the future direction of the City. The purpose of the Biennial CIP is to identify and prioritize capital improvement projects for funding. Capital improvement projects include street and park construction and rehabilitation projects, construction and/or repairs to City facilities, acquisitions of new equipment that are not part of a department's operating budget, feasibility studies to identify and quantify future projects, and some major equipment replacement purchases. By their nature, capital improvement projects generally tend to be special, one-time "events" designed to address a significant community need. Major capital projects can often take several years to complete, with both funding and construction planned in several specific phases.

Generally, all projects as defined above, which involve expenditures of $5,000 or more, are included in the CIP. There are some special types of projects or purchases costing more than $5,000 that are not included in the CIP. Such projects include equipment normally replaced through the Equipment Replacement fund, such as the routine vehicle replacement program, and leasing of property or vehicles.

Ordinances

Building and Construction Ordinance (Title 15)

A certain document, entitled "2022 California Administrative Code," Chapters 1 through 13 inclusive, published by the International Code Council and amended and adopted by the state of California as the 2022 edition California Administrative Code, is adopted by reference as the building code of the city pursuant to the provisions of California Government Code Section 50020 et seq. Chapters 15.02 through 15.28 of this title shall be known as the "city of Newark building regulations ordinance," may be cited as such, and will be referred to herein as this article.

Chapters 15.02 through 15.28 of this title shall be known as the "city of Newark building regulations ordinance," may be cited as such, and will be referred to herein as this article. (Ord. No. 471, § 1, 11-14-2013; Ord. No. 540 , § 2(Exh. A), 5-25-2023). The following codes are adopted:

- Building Code (Chapter 15.08) – 2022 California Building Code, Volumes 1 and 2," including Appendix Chapter F relating to rodent proofing, Appendix Chapter I relating to patio covers, published by the International Code Council and amended and adopted by the state of California as the 2022 edition California Building Code, is adopted by reference as the building code of the city pursuant to the provisions of California Government Code Section 50020 et seq., except as modified in this chapter which includes all items adopted by BSC, SFM, HCDl , HCD2, HCDI/AC, and DSA/AC of the adoption matrices. (Ord. No. 539 , § 2, 11-10-2022)
- Residential Code (Chapter 15.09) – A certain document, entitled 2022 California Residential Code published by the International Code Council and amended and adopted by the state of California as the 2022 edition California Residential Code, is adopted by reference as the residential code of the city pursuant to the provisions of California Government Code Section 50020 et seq., adopt chapters 1 through 10, chapter 44, and appendix AK except as modified in this chapter including. (Ord. No. 539 , § 1, 11-10-2022)
- Electrical Code (Chapter 15.12) – adopts the 2022 California Electrical Code.
- Plumbing Code (Chapter 15.16) – adopts the 2022 California Plumbing Code.
- Fire Code (Chapter 15.17) – adopts the 2022 California Fire Code.
- Energy Code (Chapter 15.22) – adopts the 2022 California Energy Code.
- California Green Building Standards Code (Chapter 15.23) – adopts the 2022 California Green Building Standards Code.

Floodplain Ordinance (Chapter 15.40)

The legislature of the State of California has in Government Code Sections 65302, 65560 and 65800 conferred upon local government units authority to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the city council of the City of Newark does hereby adopt the following floodplain management regulations. (Ord. No. 435, § 1, 6-25-2009). This chapter shall apply to all special flood hazard areas within the jurisdiction of the city.

Located within special flood hazard areas established in Section 15.40.032 are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of floodwaters which carry debris, potential projectiles, and erosion potential, the following provisions apply:

- Prohibit encroachments, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer or architect is provided demonstrating that encroachments shall not result in any increase in flood levels during the occurrence of the base flood discharge.
- If Section 15.40.055(A) is satisfied, all new construction and substantial improvements shall comply with all other applicable flood hazard reduction provisions of Section 15.40.050.

New construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Residential structures shall be elevated to or above the base flood elevation or to a minimum of six inches above the building pad which shall be at a minimum elevation of eleven and one-quarter feet on the National Geodetic Vertical Datum (NGVD) or the equivalent North America Vertical Datum (NAVD), whichever affords the greater degree of flood damage protection. Nonresidential structures may meet the standards in subdivision (C)(3) of this section. Upon the completion of the structure the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor to be properly elevated. Such certification shall be provided to the building official.

New construction and substantial improvement of any structure in Zone AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM, or at least two feet if no depth number is specified. Nonresidential structures may meet the standards in subdivision (C)(3) of this section. Upon the completion of the structure the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, to be properly elevated. Such certification shall be provided to the building official.

The building official is hereby appointed to administer and implement this chapter by granting or denying building permits in accordance with its provisions. This ordinance contains provisions for flood hazard reduction by the building official:

- Standards of construction.
- Standards for utilities.
- Standards for manufactured homes.
- Standards for coastal high hazard areas.
- Standards for recreational vehicles.

Grading and Excavation (Chapter 15.50)

The purpose of this chapter is to safeguard life, limb, property, and the public welfare by regulating grading on private property. This chapter sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction. This chapter sets forth rules and regulations to control excavation, grading and earthwork construction, including fills and embankments; establishes the administrative procedure for issuance of permits; and provides for approval of plans and inspection of grading construction.

Subdivision Ordinance (Title 16)

This title is adopted to supplement and implement the Subdivision Map Act and may be cited as the "subdivision ordinance of the city of Newark." (Ord. 143 Art. I § 1, 1977) The purpose of this title is to regulate and control the division of land and each part thereof within the city; to supplement the provisions of the Subdivision Map Act; and to set forth the procedure to be followed in securing the official approval of the planning director, city engineer, public works director, city manager, planning commission and city council regarding divisions of land. Subdivision improvements and their regulations are discussed.

The intent of this title is to promote the public health, safety and general welfare; to promote orderly growth and development within the city; to coordinate lot design, street patterns, rights-of-way, traffic circulation, utilities and public facilities with the general plan and any specific plans; to assure that areas dedicated for public purposes will be properly improved initially so as not to be a future burden upon the community; to preserve natural resources and prevent environmental damage; to maintain suitable standards to ensure adequate, safe building sites; and to prevent hazard to life and property.

Zoning Ordinance (Title 17)

Title 17 of the Newark Municipal Code shall be known and cited as the "Newark zoning ordinance," "zoning ordinance of the City of Newark," "zoning ordinance," or "ordinance." (Ord. No. 503, § 1(Exh. A), 1-25-2018)

The purpose of this title is to implement the city's general plan and to protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. More specifically, this title is adopted to achieve the following objectives:

- Provide standards for the orderly growth and development of the city, and guide and control the use of land to provide a safe, harmonious, attractive, and sustainable community.
- Achieve the arrangement of land uses depicted in the Newark general plan, consistent with the goals and policies of the general plan.
- Enhance the appearance of the city
- Preserve and enhance the quality of life and character of residential neighborhoods.
- Promote economic growth and the creation of jobs.
- Promote and support a multi-modal transportation system.
- Facilitate the appropriate location of community facilities, institutions and parks and recreational areas.
- Allow for public participation in government decision-making regarding land use and development in a manner consistent with state law.
- Define duties and powers of administrative bodies and officers responsible for implementation of this title.

This title implements the goals and policies of the Newark general plan by regulating the use of land and structures within the city.

B.5.2. Administrative/Technical Mitigation Capabilities

Table B-70 identifies the City department(s) responsible for activities related to mitigation and loss prevention in Newark.

Table B-70 City of Newark's Administrative and Technical Mitigation Capabilities

Administration	In Place Y/N	Describe capability Is coordination effective?
Staff		**Is staffing adequate to enforce regulations? Is staff trained on hazards and mitigation? Is coordination between agencies and staff effective?**
Chief Building Official	Y	Staff is adequate, trained, and coordinates sufficiently.
Civil Engineer, including dam and levee safety	N	
Community Planner	Y	Staff is adequate, trained, and coordinates sufficiently.
Emergency Manager	Y	Staff is adequate, trained, and coordinates sufficiently.
Floodplain Administrator	Y	Staff is adequate, trained, and coordinates sufficiently.
GIS Coordinator	Y	Staff is adequate, trained, and coordinates sufficiently.
Planning Commission	Y	Staff is adequate, trained, and coordinates sufficiently.
Other		
Technical	**Y/N**	**Has capability been used to assess/mitigate risk in the past?**
Grant writing		
Hazard data and information	Y	
GIS analysis	N	
Mutual aid agreements	Y	
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City's GIS is in the process of being upgraded to allow for various analyses by staff and specialty consultants, thereby significantly improving the City's capacity to assess risk. Consideration may be given to a dedicated grant writer which would improve opportunities for the City to obtain necessary funding for risk mitigation.		

Source: City of Newark

B.5.3. Fiscal Mitigation Capabilities

Table B-71 identifies financial tools or resources that the City could potentially use to help fund mitigation activities.

Table B-71 City of Newark's Fiscal Mitigation Capabilities

Funding Resource	In Place Y/N	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Capital improvements project funding	Y	All funding resources are to support specific programs and projects
Community Development Block Grant	Y	City has access to. Hasn't been used in the past for mitigation but could be used in the future.

Funding Resource	In Place Y/N	Has the funding resource been used in past and for what type of activities? Could the resource be used to fund future mitigation actions?
Federal funding programs (non-FEMA)	Y	Received funds for American Rescue Plan.
Fees for water, sewer, gas, or electric services	N	
Impact fees for new development	Y	Public Safety, Community Service Impact, Traffic Impact, Housing Impact, Park, Development Maintenance & Art in Public Place fees
State funding programs	Y	We have Quiet zone & broadband projects but were not specific for mitigation actions
Stormwater utility fee	Y	We have stormwater quality control and storm drain fees
Other		
How can these capabilities be expanded and improved to reduce risk?		
The City will be seeking CDBG, BRIC, and other state and federal grants for mitigation purposes.		

Source: City of Newark

B.5.4. Mitigation Education, Outreach, and Partnerships

Table B-72 identifies education and outreach programs and methods already in place that could be/or are used to implement mitigation activities and communicate hazard-related information.

Table B-72 City of Newark's Mitigation Education, Outreach, and Partnerships

Program/Organization	In Place Y/N	How widespread are each of these in your community?
Community newsletters	Y	Multiple agencies in the City used a newsletter to distribute information.
Hazard awareness campaigns (such as Firewise, Storm Ready, Severe Weather Awareness Week, school programs, public events)	N	
Local news	Y	City has partnership with multiple local news organizations, stations, and print companies.
Organizations that interact with underserved and vulnerable communities	N	
Social media	Y	Social media feeds are often used to pass on hazard information.
Other		
How can these capabilities be expanded and improved to reduce risk?		
Our Office of Emergency Services (OES) has been created and has budgeted to develop a marketing and communication program to focus on Community preparedness. This will include sharing information through the City's newsletter and social media posts. We are also developing outreach programs for underserved and vulnerable communities including providing PEP & fire extinguisher trainings for the hearing impaired and their family, Adult independent communities and offering this training in multiple languages through interpreters. We will also be reaching out to HOA's, faith based and community-based organizations to offer preparedness training.		

Source: City of Newark

B.5.5. Other Mitigation Efforts

The City has many other completed or ongoing mitigation projects/efforts that include the following:

The City has been in the process of updating multiple documents related to hazard mitigation, including the Safety Element, Housing Element, and other documents.

The City has a Hazard Air Quality Program (last updated in 2021) that they follow during times of poor air quality. The purpose of this Administrative Regulation (the Air Quality Program) is to protect the health and safety of City employees. The primary objective of this program is to avoid employee illnesses and injuries. The program establishes procedures and provides information necessary to ensure that all City employees recognize hazardous air quality conditions to ensure their own safety and the safety of others. This has occurred during times of wildfire smoke in the past.

B.6 Mitigation Strategy

B.6.1. Mitigation Goals and Objectives

The City of Newark adopts the hazard mitigation goals and objectives developed by the Planning Team and described in Chapter 5 Mitigation Strategy.

B.6.2. NFIP Mitigation Strategy

The City of Newark joined the NFIP in the Emergency Phase on April 22, 1974, and the Regular Phase on December 1, 1978. As a participant of the NFIP, the City of Newark has administered floodplain management regulations that meet the minimum requirements of the NFIP. The management program objective is to protect people and property within the City. The City of Newark will continue to comply with the requirements of the NFIP in the future.

The City of Newark Public Works Department provides public outreach activities which include map information services, public awareness, public hazard disclosure, and flood protection information. This information is readily available to the public and consists of current and accurate flood mapping. In addition, the Public Works Department provides information about our stormwater management program and up-to-date information related to the maintenance of its drainage system.

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS which are to reduce flood losses, facilitate accurate insurance rating, and promote the awareness of flood insurance. The City of Newark is not a current participant in the CRS program.

More information about the floodplain administration in the City of Newark can be found in Table B-73.

Table B-73 City of Newark Compliance with NFIP

NFIP Topic	Comments
Staff Resources	
Who is responsible for floodplain management in your community? Do they serve any roles other than Community Floodplain Administrator (FPA)?	Building Official in conjunction with the Principal Engineer
Is the Community FPA or NFIP Coordinator a Certified Floodplain Manager?	Not yet
Is floodplain management an auxiliary function?	Yes
Provide an explanation of NFIP administration services (e.g., permit review, GIS, education or outreach, inspections, engineering capability)	Through the entitlement phase for tracts and the building permit review do the floodplain awareness happen
What are the barriers to running an effective NFIP program in the community, if any?	GIS not updated, current permit tracking software not update (going through updating now), manpower
Insurance Summary	
How many NFIP policies are in the community? What is the total premium and coverage?	43 policies $26,795 in premiums $13,671,000 in coverage
How many claims have been paid in the community? What is the total amount of paid claims? How many of the claims were for substantial damage?	5 claims $0.00 in claims paid 0 substantial damage claims
How many structures (residential and non-residential) are exposed to flood risk within the community?	1% annual chance flood zone: 285 2,080 structures 0.2% annual chance flood zone: 2,080 structures
Are there Repetitive Loss (RL) and Severe Repetitive Loss Properties (SRL) structures in the community?	0 RL properties 0 SRL properties
Describe any areas of flood risk with limited NFIP policy coverage	Areas on the borders of the flood control channels
How does the community teach property owners or other stakeholders about the importance flood insurance?	The City responds to property owner inquiries and will provide information related to flood insurance based on the current FIRM. Webiste information is pending.
What digital sources (like the FEMA Map Service Center, National Flood Hazard Layer) or non-regulatory tools does the community use?	FIRM, Firmettes, other FEMA documentation.
Compliance History	
Is the community in good standing with the NFIP?	Y
Are there any outstanding compliance issues (i.e., current violations)?	N
How does the community identify substantially damaged/improved structures? What is the process to make sure these structures are brought into compliance?	When a disaster happens, Building is notified to conduct a site inspection and follow the FEMA documentation reporting.
When was the most recent Community Assistance Visit (CAV) or Community Assistance Contact (CAC)?	CAV 10/16/2015
Is a CAV or CAC scheduled or needed?	N

NFIP Topic	Comments
Regulation	
When did the community enter the NFIP?	4/22/1974 (Emergency) 12/1/1978 (Regular)
Are the FIRMs digital or paper?	Digital
Has the community adopted the NFIP minimum floodplain management criteria via local regulation? Date of current local regulation?	Currently looking at updating, last update 2009
Has the community adopted the latest effective FIRM? Date adopted?	Not sure if our firm was adopted, but 2009
How does the community enforce local floodplain regulations and monitor compliance?	Through the building permit and tract improvement process.
Do floodplain development regulations meet or exceed FEMA or State minimum requirements? If so, in what ways?	We are in compliance with the NFIP process as the state code meets the required minimums, we are looking at adopting a stricter section of the code.
How are Letters of Map Change (LOMCs) tracked and compiled?	Through the entitlement process and we have a binder of executed LOMC's
Provide an explanation of the permitting process.	Permits applied for reviewed by internal and external plan reviewers. Comments generated based on the plans submitted, including freeboard requirements.
Community Rating System	
Does the community participate in CRS? If so, what is the community's CRS Class Ranking?	N
What categories and activities provide CRS points and how can the class be improved?	N/A
Does the plan include CRS planning requirements?	N/A

Source: City of Newark, NFIP CIS Report for the City of Newark

B.6.3. Mitigation Actions

The planning team for the City of Newark identified and prioritized the following mitigation actions based on the risk assessment. Background information and information on how each action will be implemented and administered, such as ideas for implementation, responsible office, potential funding, estimated cost, and timeline are also included. The following hazards were considered a priority for purposes of mitigation action planning:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Floods: 1%/0.2% annual chance
- Floods: Localized Stormwater
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Tsunami

After review by the City it was determined that the following hazard was a low priority for mitigation actions:

- Wildfire

While wildfire is discussed in the actions below, there is no direct mitigation action for wildfire. Actions for the City in this Plan are shown on Table B-74.

Table B-74 City of Newark Mitigation Actions

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Newark Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	New Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	New Action	X	X		Public Information
Action 3. Continuously adopt the most current building standards and include appendices to mitigate hazards such as but not limited to Floods, Wildfires, and Earthquake.	New Action	X	X	X	Prevention
Action 4. Hardening and Retrofit of Existing Facilities	New Action	X	X		Prevention Emergency Services Property Protection
Action 5. Critical Facilities Back-Up Power	2017 Action	X	X		Prevention Emergency Services Property Protection
Action 6. Update and enhance the GIS data systems and mapping for water-related climate hazards / Mapping Water-Related Climate Hazards	New Action	X	X		Prevention
Climate Change Actions					
Action 7. Sea Level Rise Resiliency Plan	2017 Action	X	X	X	Prevention
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 8. Maintain good standing under NFIP and create public outreach program and awareness	New Action	X	X	X	Prevention Public Information

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 9. Partner with Alameda County Flood Control and Water Conservation District (ACFCD) to identify mitigation option for various projects	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 10. Alameda County Flood Control and Water Conservation Water District (ACFCD) Line H and Line I Improvements	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 11. Install storm drainage improvements at Lindsay Tract	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 12. Develop a Storm Drain Master Plan	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 13. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners	New action	X	X		Prevention Property Protection Structural Projects Natural Resource Protection
Earthquake and Tsunami Actions					
Action 14. Complete railroad overcrossing at Central Avenue	2017 Action	X	X		Structural Projects
Action 15. Establish Tsunami zone & evacuation route signage in City's designated areas and education program	New action	X	X		Prevention Property Protection Natural Resource Protection
Wildfire, Drought, and Severe Weather Extreme Heat Actions					
Action 16. Replace Eucalyptus Groves with non-hazardous tree species	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 17. Urban Forest Master Plan development	2017 Action	X	X		Prevention Property Protection Natural Resource Protection

Multi-Hazard Actions

Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan

Hazards Addressed: Multi-hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: Local jurisdictional reimbursement for mitigation projects and cost recovery after a disaster is guided by Government Code Section 8685.9 (AB 2140). Specifically, this section requires that each jurisdiction adopt a LHMP in accordance with the federal Disaster Mitigation Act of 2000 as part of the Safety Element of its General Plan. Adoption of the LHMP into the Safety Element of the General Plan may be by reference or incorporation.

Other Alternatives: No action

Existing Planning Mechanisms through which Action will be Implemented: Safety Element of General Plan

Responsible Office: City of Newark Planning Department

Cost Estimate: Jurisdictional board/staff time

Potential Funding: City budgets

Benefits (avoided Losses): Incorporation of an adopted LHMP into the Safety Element of the General Plan will help jurisdictions maximize the cost recovery potential following a disaster.

Schedule: As soon as possible, but to completed in conjunction with or upon LHMP Adoption

Priority (H, M, L): High

Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness

Hazards Addressed: Multi-hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The City plays a key role in public outreach/education efforts to communicate the potential risk and vulnerability of their community to the effects of natural hazards. A comprehensive multi-hazard public education program will better inform the community of natural hazards of concern and actions the public can take to be better prepared for the next natural disaster event.

Project Description: A comprehensive multi-hazard outreach program will ascertain both broad and targeted educational needs throughout the community. The City will work other agencies as appropriate to develop timely and consistent annual outreach messages in order to communicate the risk and vulnerability of natural hazards of concern to the community. This includes measures the public can take to be better prepared and to reduce the damages and other impacts from a hazard event. The public outreach effort will leverage and build upon existing mechanisms, will include elements to meet the objectives of Goal 3 of this LHMP Update, and will consider:

- Using a variety of information outlets, including websites, local radio stations, news media, schools, and local, public sponsored events;
- Creating and distributing (where applicable) brochures, leaflets, water bill inserts, websites, and public service announcements;
- Displaying public outreach information in County office buildings, libraries, and other public places and events;
- Developing public-private partnerships and incentives to support public education activities.

Other Alternatives: Continue public information activities currently in place.

Existing Planning Mechanism(s) through which Action Will Be Implemented: Existing City outreach programs will be reviewed for effectiveness and leveraged and expanded upon to reach the broader region.

Responsible Office: City of Newark

Priority (H, M, L): High

Cost Estimate: Annual costs to be determined, and will depend on the scope and frequency of activities and events as well as volunteer participation

Benefits (Losses Avoided): Increase residents' knowledge of potential hazards and activities required to mitigate hazards and be better prepared. Protect lives and reduce damages, relatively low cost to implement.

Potential Funding: City budgets

Timeline: Ongoing/Annual public awareness campaign

Action 3. ***Continuously adopt the most current building standards and include appendices to mitigate hazards such as but not limited to Floods, Wildfires, and Earthquake.***

Hazards Addressed: Multi-Hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 3, 4, 5, 6, 7

Issue/Background: The building construction standards are updated and forced to adopt the plain standards, by adopting certain appendices that help mitigate special hazards such and WUI, Flood, Resource protection we can strengthen the resiliency in the community.

Project Description: By ordinance and council approval adopt the most current edition of the state adopted construction standards with appendices that mitigate hazards, every three years and 90 days prior to forced adoption.

Other Alternatives: Adopt the current standards with no appendices

Existing Planning Mechanism(s) through which Action will be implemented: Ordinance creation and adoption.

Responsible Office/Partners: Building Inspection division, Engineering, and Environmental Services

Cost Estimate: Staff Time

Benefits (Losses Avoided): Increase to resiliency in the community mitigating multi hazards, such as WUI, Flood, Resource protection, and sea level

Potential Funding: SB1473 funds to help offset staff time

Timeline: Ongoing/Annual

Project Priority (H, M, L): Medium

Action 4. Hardening and Retrofit of Existing Facilities

Hazards Addressed: Multi-hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 6, 7

Issue/Background: Currently some of the Facilities owned by Newark are going through an assessment and study on reusability and need as to functions. Some of the structures need updating and retrofitting for earthquake as well as mitigation of flooding, other hazards of concern, and accessibility.

Project Description: Facilities Assessment to verify the need of the facilities along with the number of upgrades and retrofitting required for continued use of the facility. Facility Master Plan to be completed in 2024.

Other Alternatives: No upgrading or retrofit of existing structures

Existing Planning Mechanism(s) through which Action will be implemented: Ordnance/Resolutions, CIP projects list, RFQ/RFP

Responsible Office/Partners: City Manager's Office / Building Inspection Division

Cost Estimate: Consultant $250,000, Staff Time

Benefits (Losses Avoided): Creating a list of opportunities to enhance safety within the structures or have them replaced to a safer standard.

Potential Funding: Community Development Maintenance Fund

Timeline: Longterm, Facility Master Plan to be completed in 2024. Project implementation to occur over 1-5 years

Project Priority (H, M, L): Medium

Action 5. Critical Facilities Back-Up Power

Hazards Addressed: Multi-hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 6, 7

Issue/Background: Some critical facilities, including Fire Station Nos. 27 and 29, require upgrades to back-up power systems. Additional needs are anticipated to be identified with the Facilities Master Plan document currently being prepared.

Project Description: This project provides a final evaluation and implementation of back-up power system upgrades at all City-owned critical facilities. Initial evaluations are to be provided through the current Facilities Master Plan. Prior system inspections and evaluations have been completed for the initial phase of implementation currently underway.

Other Alternatives: No viable alternatives.

Existing Planning Mechanism(s) through which Action will be implemented: Facilities Master Plan; Capital Improvement Plan

Responsible Office/Partners: Public Works Department- Maintenance Division; Alameda County Fire Department

Cost Estimate: $400,000

Benefits (Losses Avoided): Ensure minimum electrical system operability at critical facilities following events resulting in power outages

Potential Funding: Capital Funds; Emergency Service Facilities Impact Fees; FEMA HMGP or BRIC

Timeline: First phase currently underway with contract execution for upgrades at Fire Station Nos. 27 and 29 with targeted completion by January 2024. Additional phases to be established following completion of Facilities Master Plan.

Project Priority (H, M, L): M

Action 6. Update and enhance the GIS data systems and mapping for all hazards, including water-related climate hazards / Mapping Water-Related Climate Hazards

Hazards Addressed: Multi-hazard (Climate Change, Coastal Flooding and Sea Level Rise, Dam Failure, Drought & Water Shortage, Earthquake, Floods: 1%/0.2% annual chance, Floods: Localized Stormwater, Severe Weather: Extreme Heat, Severe Weather: Heavy Rains and Storms, Tsunami, Wildfire)

Goals Addressed: 1, 2, 6, 7

Issue/Background: GIS systems have not been updated and datasets are not current.

Project Description: Update datasets with current GIS hazards data.

Other Alternatives: No action.

Existing Planning Mechanism(s) through which Action will be implemented: ESRI, and City's IT Program

Responsible Office/Partners: Information Technology Department and Public Works – City of Newark

Cost Estimate: $16,000

Benefits (Losses Avoided): Reduced risk of flooding to people and property.

Potential Funding: Existing budgets. FEMA or Cal OES grants: HMGP.

Timeline: Ongoing, 1-5 years

Project Priority (H, M, L): Low

Climate Change Actions

Action 7. Sea Level Rise Resiliency Plan

Hazards Addressed: Climate Change; Sea Level Rise and Coastal Flooding

Goals Addressed: 1, 2, 5, 6

Issue/Background: The City of Newark has not yet prepared a comprehensive document to analyze the potential impacts of sea level rise and the development of mitigation options to ensure resiliency against those impacts.

Project Description: Preparation of a complete Sea Level Rise Resiliency Plan to analyze potential short-, medium-, and long-term impacts of seal level rise on the Newark community and the development of potential mitigation measures for all such impacts. The project includes identification of stakeholders to partner with at various government levels and development of policies and objectives for comprehensive local and regional solutions

Other Alternatives: No viable alternatives.

Existing Planning Mechanism(s) through which Action will be implemented: General Plan; Capital Improvement Plan;

Responsible Office/Partners: Public Works Department – Environmental Services Division

Cost Estimate: $250,000

Benefits (Losses Avoided): Identification of potential sea level rise impacts over various time horizons and development of mitigation measures to minimize hazardous impacts.

Potential Funding: Community Development Maintenance Funds

Timeline: June 2025

Project Priority (H, M, L): High

Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions

Action 8. Maintain good standing under NFIP and create public outreach program and awareness

Hazards Addressed: Flooding (Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm)

Goals Addressed: 1, 2, 3, 4, 5, 6

Issue/Background: NFIP requires specific rules to be followed to maintain good standing, updating currently adopted construction within the flood plain to align to the rules and regulations with NFIP, adopting appendix G of the California Building Code (CBC). Consider joining the the CRS.

Project Description: Update our current flood plain construction ordinance to meet the goals of the NFIP and allow Newark to apply for CRS if Newark so chooses.

Other Alternatives: Update the ordinance to be aligned with the NFIP requirements

Existing Planning Mechanism(s) through which Action will be implemented: Create and adopt the ordinance.

Responsible Office/Partners: Building Inspection Division/Engineering.

Cost Estimate: Staff time

Benefits (Losses Avoided): Maintain good standing in the NFIP which is a federal requirement for flood insurance and discounts.

Potential Funding: City Budgets

Timeline: Short term and Ongoing, 1-5 years

Project Priority (H, M, L): High

Action 9. Partner with Alameda County Flood Control and Water Conservation District (ACFCD) to identify mitigation option for various projects

Hazards Addressed: Coastal Flooding and Sea Level Rise, Flood, Dam Failure, Levee Failure

Goals Addressed: 1, 2, 4, 5

Issue/Background: The ACFCD owns and maintains the flood control systems that run through the City. The ACFCD maintains the flood control systems to ensure that the systems continue to protect residents from floods.

Project Description: Staff will coordinate with the ACFCD to identify mitigations to increase flood protection for Newark residents.

Other Alternatives: The City can partner on ACFCD projects to prioritize the ones focused in providing additional flood protection for Newark residents.

Existing Planning Mechanism(s) through which Action will be implemented: ACWD Capital Improvement Program

Responsible Office/Partners: City of Newark Public Works Department and Alameda County Flood Control District

Cost Estimate: Unknown at this time; costs to be developed by ACWD

Benefits (Losses Avoided): Additional flood protection for Newark residents

Potential Funding: ACFCD Capital Improvement Program/Maintenance; City Budgets, FEMA - HMGP

Timeline: Short term and ongoing; 1-3 years

Project Priority (H, M, L): Medium

Action 10. Alameda County Flood Control and Water Conservation Water District (ACFCWCD) Line H and Line I Improvements

Hazards Addressed: Flood

Goals Addressed: 1, 2, 4, 5

Issue/Background: Line H and Line I are two flood control systems owned and maintained by ACFCWCD that run through City of Newark. The 100-year flood event (1% annual chance flood) for Line H and the 500-year flood event (0.2% annual chance flood) for Line I are not contained within the channel. The homes adjacent to Line H and Line I are at flooding risk as a result of the flood events not being contained in the channels.

Project Description: Staff will coordinate with ACFCWCD to identify mitigations for Line H and Line I to increase flood protection for the homes adjacent to these lines.

Other Alternatives: The City can partner with ACFCWCD projects related to Line H and Line I if the projects are prioritized.

Existing Planning Mechanism(s) through which Action will be implemented: ACFCWCD Capital Improvement Program

Responsible Office/Partners: City of Newark Public Works Department and ACFCWCD

Cost Estimate: Unknown at this time; costs to be developed by ACFCWCD

Benefits (Losses Avoided): Mitigations that can be implemented on Line H and Line I to eliminate flood risk will benefit the homes adjacent to these two flood control systems.

Potential Funding: ACFCWCD Capital Improvement/Maintenance Funding; FEMA HMGP or BRIC funds

Timeline: Medium, 1-5 years

Project Priority (H, M, L): Medium

Action 11. Install storm drainage improvements at Lindsay Tract

Hazards Addressed: Flood (Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm)

Goals Addressed: 1, 2, 4, 5

Issue/Background: Lindsay Tract encompasses George Avenue between Sycamore Street and Cherry Street, Magnolia Street between Diary Avenue and Sycamore Street, Olive Street between Dairy Avenue and its northern cul-de-sac terminus, and Mulberry Street between Dairy Avenue and its norther cul-de-sac terminus. Portions of these streets do not have underground storm drain piping systems to convey street runoff. Street drainage is reliant on surface street gradients to drain to the nearest curb inlets. Additionally, lack of curb and gutter improvements contribute to localized flooding of these streets during heavy rain events.

Project Description: Installation of storm drain improvements, which includes installation of underground storm drain conveyance systems, curb and gutter to reduce the runoff ponding on the street surface.

Other Alternatives: Repave only without addressing drainage issues.

Existing Planning Mechanism(s) through which Action will be implemented: Capital Improvement Plan

Responsible Office/Partners: City of Newark Public Works Department

Cost Estimate: $10M

Benefits (Losses Avoided): Elimination of localized flooding.

Potential Funding: Local Transportation Sales Tax, State Gas Tax, FEMA PDM, HMGP

Timeline: Long term, 1-5 years

Project Priority (H, M, L): High

Action 12. Develop a Storm Drain Master Plan

Hazards Addressed: Coastal Flooding and Sea Level Rise, Flood, Localized Flood, Heavy Rain and Storms

Goals Addressed: 1, 2, 4, 5

Issue/Background: Heavy rain events during the winter months lead to localized flooding due to inefficiencies and restrictions in the system. An analysis will provide information to help identify mitigation actions to reduce flood related impacts.

Project Description: Development of a Stormwater Master Plan will analyze the conditions of the City's existing storm drain system, performance, and operations. The results of the analysis will determine deficiencies in the system that will help in prioritizing improvements and eliminate the deficiencies and localized flooding.

Other Alternatives: N/A

Existing Planning Mechanism(s) through which Action will be implemented: Newark General Plan; Capital Improvement Plan; FEMA BRIC grant

Responsible Office/Partners: City of Newark Public Works Department and Alameda County Flood Control and Water Conservation District.

Cost Estimate: $350,000

Benefits (Losses Avoided): Eliminate the threat of localized flooding where deficiencies are found.

Potential Funding: Community Development Maintenance Fund, FEMA - HMGP

Timeline: By 2026

Project Priority (H, M, L): Medium

Action 13. Ensure Emergency Action Plans from Dam partners has current emergency contacts in their plans and that we participate in exercises conducted by our partners

Hazards Addressed: Dam Failure (and associated flooding)

Goals Addressed: 1, 2, 4, 5

Issue/Background: Failure of any of the identified dams that put the City at risk if they fail and have the potential for flash flood for our City.

Project Description: The City of Newark will continue to review the Dam EAP's sent to us by our partners and make updates as needed. We will also proactively send updates to our partners if there is any changes

to our Emergency contacts in their EAP. We will also participate in all workshops, TTX or meetings that our partners conduct in support of the EAP.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action will be implemented: Working with our partners through email, phone call, workshops, and exercise to ensure understanding of the EAP's and affirming City POC.

Responsible Office/Partners: Office of Emergency Services, Police and Public Works

Cost Estimate: $0

Benefits (Losses Avoided): Life and property

Potential Funding: General Funds

Timeline: On-Going

Project Priority (H, M, L): Medium

Earthquake and Tsunami Actions

Action 14. Complete railroad overcrossing at Central Avenue

Hazards Addressed: Earthquake

Goals Addressed: 1, 2, 4, 5, 7

Issue/Background: Provide an overcrossing at Central Avenue to prevent isolation during seismic event or substantial train derailment. There is currently no east-west grade separation structure in Newark.

Project Description: Construction of a 942 feet 4-lane bridge with 7-span overhead structures over the existing Union Pacific Railroad (UPRR) train tracks on Central Avenue.

Other Alternatives: No alternatives over UPRR train tracks in case of damage to the train tracks from a seismic event.

Existing Planning Mechanism(s) through which Action will be implemented: Traffic Impact Fee Nexus Study; Newark General Plan; Capital Improvement Plan

Responsible Office/Partners: City of Newark Public Works Department

Cost Estimate: $40,000,000

Benefits (Losses Avoided): Access over the UPRR tracks for emergency responders in case damages prevent use of UPRR tracks during a seismic event.

Potential Funding: FEMA - HMGP, PDM, Local Transportation Sales Tax (Measure BB/Measure B);

Timeline: Long; Construction estimated to begin 2025

Project Priority (H, M, L): High

Action 15. Establish Tsunami zone & evacuation route signage in City's designated areas and education program

Hazards Addressed: Tsunami, Coastal Flooding, 1% and 0.2% Localized Flooding, Dam Failure

Goals Addressed: 1, 2, 4, 5, 7

Issue/Background: Currently the City does not have signage in our designated

Project Description: The City of Newark will develop designated evacuation routes and will identify areas to place Tsunami zone signs and will also place evacuation route signs as well.

Other Alternatives: None

Existing Planning Mechanism(s) through which Action will be implemented: Will use zonehaven in partnership with police, public works and fire to identify zones within the Tsunami zone and develop evacuation routes for community members. We will also look at locations to place signs for both identifying Tsunami zone and to show evacuation routes.

Responsible Office/Partners: Office of Emergency Services/Police/Public Works

Cost Estimate: $25,000

Benefits (Losses Avoided): Life and property

Potential Funding: Grants, General Funds

Timeline: 3-5 years

Project Priority (H, M, L): M

Wildfire, Drought, and Severe Weather Extreme Heat Actions

Action 16. Replace Eucalyptus Groves with non-hazardous tree species

Hazards Addressed: Wildfire, Extreme Heat, Drought, Severe Weather: Heavy Rains and Storms, High Winds

Goals Addressed: 1, 2, 4, 5

Issue/Background: The City of Newark owns and maintains two separate groves of eucalyptus trees totaling approximately 5 acres. Eucalyptus trees are non-native species that can be stressed during periods of high heat and drought thus leaving them more vulnerable to failure to severe weather events, particularly significant storms and wind events. Although wildfires are not common in the Newark area, these groves present a potential hazard if a local wildfire is encountered.

Project Description: A phased program to remove remaining large stands of eucalyptus trees at Sisk Grove, Jarvis Grove and at other City parks and streets is underway. Development of Sisk Grove for larger-scale recreational uses is part of a long-term specific plan. Jarvis Grove may be considered for commercial uses at some time in the future. It's has a General Plan/Zoning designation of Conservation/Open Space. if the City wants to get rid of this land, it has to be offered to affordable housing developers first, per state law.

Other Alternatives: Keep remaining stands of mature eucalyptus trees.

Existing Planning Mechanism(s) through which Action will be implemented: Urban Forest Master Plan; Newark General Plan; NewPark Place Specific Plan;

Responsible Office/Partners: Public Works Department Maintenance Division; Community Development Department

Cost Estimate: $800,000

Benefits (Losses Avoided): Reduction of potential severe weather (windstorm) and wildfire hazard.

Potential Funding: Park Impact Fees, Capital Funds; FEMA HMGP; Private Development

Timeline: Underway on a limited annual tree removal basis; Full timeline is approximately 10 years

Project Priority (H, M, L): Medium

Action 17. Urban Forest Master Plan development

Hazards Addressed: Drought, Wildfire, Severe Weather: Extreme Heat

Goals Addressed: 1, 2, 4, 5

Issue/Background: Trees within the City are vulnerable to a variety of hazards, including drought and extreme heat which can leave them more vulnerable to disease and hazards such as extreme storm and weather events. Dead and diseased trees also become a fuel source for wildfires. The City has not previously developed a complete Urban Forest Master Plan. Current planning and program documents are outdated and do not provide a clear vision for the City's future urban forest. Efforts have been made to reduce hazards associated with certain tree species, but a comprehensive plan is needed for Citywide pruning and maintenance, to encourage proper tree maintenance on private properties, and to address tree health and hazard related concerns.

Project Description: Preparation of a complete Urban Forest Master Plan that includes an analysis and recommendations of City policies, ordinance, and documents; assessment of the City's tree planting and maintenance programs; updated tree inventory for parks, streets and private property; identification and inclusion of local stakeholders; outreach to private property tree owners; reductions of hazards associated with trees.

Other Alternatives: Utilize current tree inventory only.

Existing Planning Mechanism(s) through which Action will be implemented: General Plan; Capital Improvement Plan, Community Development Department

Responsible Office/Partners: Public Works Department – Maintenance Division

Cost Estimate: $250,000

Benefits (Losses Avoided): Reduced tree losses due to severe weather; Increased tree canopy for reduced temperatures and slowing of climate change

Potential Funding: Community Development Maintenance Funds

Timeline: June 2025

Project Priority (H, M, L): High

Appendix A Planning Process

A.1 Tri-City Step 1: Organize to Prepare a Plan

(a). Involvement of Community Land Use and Comprehensive Planning

In addition to attending meetings, providing draft text for inclusion in the plan, reviewing plan documents, and coordinating input from other departments and stakeholders, Tri-City planners also provided information on development since the last plan, mapping and details on future development areas, input on current mitigation capabilities, coordination with other planning mechanisms, and input on capabilities including in-progress modifications to various City plans, ordinances, and associated documents specific to each city's floodplain management program.

Tri-City Planners

- Joel Pullen, Planning Manager, City of Fremont, Community Development Department
- Matthew Farrell, City of Newark, Chief Building Official / Floodplain Manager, Public Works Department
- Coleman Frick, City of Union City, Sr. Planner, Economic and Community Development Department

Other planners to the process included Jeanine Foster and Chris Morrison, professional planners with Foster Morrison, the consultant for this LHMP Update, as well as other planners and staff from the incorporated communities and other participating jurisdictions involved in future land use development decisions for the Tri-City Planning Area.

(b). Staff of City Departments on Planning Committee with Expertise on CRS Step 7 Activities

In order to promote the integration of CRS into this planning process, the representatives from each city were selected based on their areas of expertise relative to the CRS mitigation categories as detailed in Table A-1.

Table A-1 Tri-City LHMP Staff Capability with Six Mitigation Categories

Jurisdiction/Departments	Prevention	Property Protection	Natural Resource Protection	Emergency Services	Structural Flood Control Projects	Public Information	Other
City of Fremont							
Alec Tune, Emergency Services Manager, City of Fremont, Fire Department/OES	X	X		X		X	X

Jurisdiction/Departments	Prevention	Property Protection	Natural Resource Protection	Emergency Services	Structural Flood Control Projects	Public Information	Other
Homira Shafaq, Floodplain Manager, City of Fremont, Public Works Department	X	X	X		X	X	X
Joel Pullen, Planning Manager, City of Fremont, Community Development Department	X	X				X	X
City of Newark							
Richard Martinez, Emergency Coordinator, City of Newark, City Manager's Office	X	X		X		X	X
Matthew Farrell, Chief Building Official / Floodplain Manager, Public Works Department	X	X	X		X	X	X
City of Union City							
Richard Martinez, Emergency Coordinator, City of Union City, City Manager's Office	X	X		X		X	X
Farooq Azim, City Engineer, Public Works Department	X	X	X		X	X	X
Coleman Frick, Sr. Planner, Economic and Community Development Department	X	X				X	X

Lists of Hazard Mitigation Planning Committee Invitees

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
McGee Shackelford	Karena	City of Fremont	City Manager's Office	City Manager
Stott	Brian	City of Fremont	City Manager's Office	Assistant City Manager
Briggs	Christina	City of Fremont	City Manager's Office	Assistant City Manager
Bosques	Geneva	City of Fremont	City Manager's Office - Communications	Communications & Legislative Affairs Director
Golden	Cheryl	City of Fremont	City Manager's Office - Communications	Communications Manager
Fierro	Rocio	City of Fremont	City Attorney's Office	Senior Deputy City Attorney II
Schwarz	Steven	City of Fremont	City Attorney's Office - Risk Management	Risk Manager
Wolf	Suzanne	City of Fremont	Community Services	Community Services Director
Beranek	Kim	City of Fremont	Community Services	Deputy Director
Barajas	Juan	City of Fremont	Community Services	Parks Superintendent

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Morris	Wayne	City of Fremont	Community Development	Deputy Director
Schoenholz	Dan	City of Fremont	Community Development	Director
Pullen	Joel	City of Fremont	Community Development	Planning Manager
West	Gary	City of Fremont	Community Development	Building Official
Wage	David	City of Fremont	Community Development	Code Enforcement Officer
DiFranco	Rachel	City of Fremont	Community Development	Sustainability Manager
Kapur	Kranit	City of Fremont	Community Development	Sustainability Coordinator
Lazaro	Donovan	City of Fremont	Economic Development	Economic Development Director
Ware	Vanessa	City of Fremont	City Manager's Office	Economic Development Coordinator
Persselin	David	City of Fremont	Finance	Director
Myat	Hein	City of Fremont	Finance	Accounting Division Manager
Diaz	Zoraida	City of Fremont	Fire	Fire Chief
Mozdean	Heather	City of Fremont	Fire	Deputy Fire Chief
Kong	Jason	City of Fremont	Fire	Battalion Chief
Miller	Greg	City of Fremont	Fire - Prevention	Deputy Fire Marshall
Tune	Alec	City of Fremont	Fire - Office of Emergency Services	Emergency Services Manager
Taylor	Sanford	City of Fremont	Information Technology Services	IT Services Director
Yu	David	City of Fremont	Information Technology Services	Infrastructure Services Manager
Leon	John	City of Fremont	Information Technology Services	GIS Manager
Chan	Ron	City of Fremont	Information Technology Services	GIS Specialist
Hayes	Tim	City of Fremont	Information Technology Services	Systems Analyst/Programmer (GIS)
Wun	Ruby	City of Fremont	Information Technology Services	Data Coordinator
Chew	Ed	City of Fremont	Information Technology Services	Mapping Specialist

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Larsen	Hans	City of Fremont	Public Works	Public Works Director
Khandan	Bahmani	City of Fremont	Public Works	City Engineer
Veloso	Noe	City of Fremont	Public Works	Assistant City Engineer
Kishani	Dilip	City of Fremont	Public Works	Principal Engineer (CRS)
Shafaq	Homira	City of Fremont	Public Works	Floodplain Manager
King	Kelly	City of Fremont	Public Works	Deputy Director, Maintenance & Business Operations
Edwards	Jeff	City of Fremont	Public Works	Street Maintenance Manager
Kendrick	Pat	City of Fremont	Public Works	Building Maintenance Manager
Washington	Sean	City of Fremont	Police	Police Chief
Brede	Lance	City of Fremont	Police	Deputy Chief
McCormick	Paul	City of Fremont	Police	Lieutenant
Gee	Amy	City of Fremont	Police	Public Affairs Manager
Caldera	Arquimides	City of Fremont	Human Services	Deputy Director
Grimsich	Karen	City of Fremont	Human Services	Aging & Family Services Administrator
Aguilar	Mirabel	City of Fremont	Public Works	Senior Civil Engineer
Martinez	Richard	City of Newark	City Manager's Office	Emergency Coordinator
Hovorka	Lenka	City of Newark	City Manager's Office	Assistant City Manager
Fajeau	Soren	City of Newark	Public Works	Director
Leontiades	Mike	City of Newark	Public Works	Acting Building Official
Farrell	Matthew	City of Newark	Public Works	Chief Building Official
Connolly	Tonya	City of Newark	Public Works	Maintenance Superintendent
Macias	Jolie	City of Newark	Police	Captain
Simon	Brian	City of Newark	Police	Lieutenant
Turner	Steven	City of Newark	Community Development	Director
Fong	Peter	City of Newark	IT	IT Analyst
Beireis	Peter	City of Newark	Community and Recreation	Senior Recreation Supervisor

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Lee	Krysten	City of Newark	Finance	Director
Del Rosario	Gloria	City of Newark	Finance	Accounting Manager
Fredstrom	Karl	City of Newark	Police	Police Sergeant
Luepke	Jeff	City of Newark	Fire	Division Chief
Libby	David	City of Newark (affiliated volunteer)	Fire	Volunteer Coordinator
Fajeau	Soren	City of Newark	Public Works	Director
Hannon	Michael	City of Newark	City Manager's Office	Mayor
Cianciarulo	Dan	City of Newark	City Manager's Office	Senior Landscape Inspector
Diana	Cangco	City of Newark	Public Works	Principal Civil Engineer
Phan	Jennifer	City of Union City	City Manager's Office	Deputy City Manager
Souza	Travis	City of Union City	Police	Captain
Martinez	Richard*	City of Union City	City Manager's Office	Emergency Coordinator
Welihinda	Dishna	City of Union City	City Manager's Office	Website coordinator
Campbell	Carmela	City of Union City	Economic Development	Director
Ayupan	Marilou	City of Union City	Public Works	Director
Hahn	Corina	City of Union City	Community & Recreation Services	Director
Block	Andy	City of Union City	Economic & Community Development	Environmental Manager
Mai	Uyen	City of Union City	Economic & Community Development	Sustainability Analystjose
Calderon	Bob	City of Union City	Public Works	Interim Superintendant
Azim	Farooq	City of Union City	Public Works	City Engineer
Tommy (Wai Chee)	Cho	City of Union City	Public Works	Principal Civil Engineer
Roman	Paul	City of Union City	Public Works	Streets Supervisor
Tran	Trieu	City of Union City	Public Works	Engineer II
Frick	Coleman	City of Union City	Economic & Community Development	Senior Planner
Venook	Chuck	City of Union City	Economic & Community Development	Chief Building Official
Thomas	Derrick	City of Union City	Fire	Divison Chief

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Vallejo	Mario	City of Union City	IT	Director
Valvokus	Chris	City of Union City		Supervisor
Gutierrez	Jose	City of Union City	Public Works	Supervising Construction Inspector
Wheeler	Paul	City of Hayward	Fire Department	Emergency Services Officer
Reed	Jacob	Alameda County Water District (ACWD)	O&M - Emergency and Security Services	Supervisor
Abellar	Caroline	Alameda County Water District (ACWD)		
Park	Daniel	Alameda County Water District (ACWD)	Information Technology Services	IT/GIS Analyst
Ippangunta	Rekha	Alameda County Water District (ACWD)	ETS - Project Engineering	Division Manager
Wickham	Mike	Alameda County Water District (ACWD)	O&M - Production	Division Manager
Niesar	Thomas	Alameda County Water District (ACWD)	WR - Waster Supply and Planning	Division Manager
Oam	Sydney	Alameda County Water District (ACWD)	F - Financial Analysis	Supervisor
Gonzales	Sharene	Alameda County Water District (ACWD)	OGM - Public Affairs	Supervisor
Stevenson	Dan	Alameda County Water District (ACWD)	O&M - Facilities Maintenance	Division Manager
Arends	Kurt	Alameda County Water District (ACWD)	O&M	Department Manager
Lai	Linda	Alameda County Water District (ACWD)		Engineer Tech
Terrazas	Karoline	Union Sanitary District (USD)	Business Services	Organizatonal Performance Manager**
Ghossain	Sami	USD	Technical Services	Manager
Chau	Raymond	USD	Technical Services	Manager
Rodriguez	Jose	USD	Collection Services	Manager

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Cabrera	DJ	Alameda County Sheriff's Office	Office of Emergency Services	Senior Emergency Services Coordinator
Holm	Lars Eric	Alameda County Voluntary Organizations Active in Disasters (ALCO VOAD)		Chair
Holm	Lars Eric	Alameda County 2-1-1/Eden Information & Referral (Eden I&R)		Disaster Preparedness Coordinator
Halog	Ron	ALCO VOAD		Vice Chair
Casimere	Lincoln	Alameda County Fire Department	Emergency Services	Emergency Preparedness Manager
Cowan	Rowena	Fremont Unified School District	Human Resources - Risk Management	Risk Manager
Ampon	Nick	Fremont Unified School District	Facilities & Construction	Senior Project Manager
Rodgers	Jason	New Haven Unified School District	Maintenance, Operations, Transportation & Facilities	Director
Lam	Marcus	New Haven Unified School District	Administration	Director of Pupil Services
Condon	Susan	Newark Unified School District	Maintenance, Operations & Transportation	Director
Peralta	Ben	Ohlone Community College District	Campus Police Services	Police Officer
Tsang	Moses	Alameda County Flood Control & Water Conservation District	Capital Projects Delivery	Principal Civil Engineer
Leonard	Greg	Alameda County Public Works Agency		
Atkins	Erika	Alameda County Library	Facilities, Fleet, and Courier	Facilities Manager
Ross	Robert	California Department of Water Resources	Delta Field Division, Project Operations Center	Power Dispatcher Manager
Josh	Gale	San Francisco Public Utilities Commission	Emergency Planning & Security	Director of Emergency Planning
Atkinson	Sarah	SPUR		Earthquake Resilience Policy Manager
Jackson	Kerry	AC Transit		Protective Services Manager

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Sheehan	Brian	Alameda County Fire Department		Battalion Chief
Bolaffi-Angst	Mimi	Bay Area Rapid Transit	Director of Security Programs	
Khari	Helae	East Bay Regional Park District	Public Safety Division, Fire Department	Assistant Fire Chief
Guzman	Ben	East Bay Regional Park District	Public Safety Division, Police Department	Lieutenant
Stallard	Barry	Pacific Gas & Electric	Emergency Management & Public Safety	Public Safety Specialist, Senior
Wade	Clint	California Department of Education	California Schools for the Deaf & Blind	Chief of Facilities
Paleo	Robert	California Department of Education	California School for the Blind	Facilities Engineer
Charles-Ellington	Toshia	California Department of Education	California Schools for the Deaf & Blind	Business Manager
Goldstein	Gloria	Kaiser Permanente Medical Center, Fremont		
Orlando	Maximilian	Bay Area Community Health		Workplace Safety Coordinator
O'Connell	Daniel	Washington Hospital Healthcare System		Safety & Security Director
Williams	Dwight	Washington Hospital Healthcare System		Safety & Security Supervisordiana
Stoeffl	Monika	California Resiliency Alliance		Executive Director
Wong	Kane	American Red Cross		Coordinator
Leung	Cindy	American Red Cross		
Orre	Edgar	California Department of Forestry & Fire Protection	Santa Clara Unit	Unit Forester/Division Chief
LaMar - Haas	Victoria	California Governor's Office of Emergency Services	Local Mitigation Planning Unit	Program Manager
LaDuke	Yvette	California Governor's Office of Emergency Services	Tsunami Program	Tsunami Planning Coordinator

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Palmer	Matt	California Governor's Office of Emergency Services	Tsunami Program	Senior Emergency Services Coordinator
Becker	Todd	California Governor's Office of Emergency Services	Tsunami Program	Earthquake and Tsunami Program Specialist
Kerns	Alison	Federal Emergency Management Agency, Region IX		
Garcia	Brian	National Weather Service	National Weather Service SF Bay Area/Monterey	Warning Coordination Meteorologist
Wein	Anne	U. S. Geological Survey		
Ousley	D'Anne	California Earthquake Authority		
Janiele	Maffei	California Earthquake Authority		Executive Assistant (to Janiele Maffei, CEA Chief Mitigation Officer)
Yeh	Silvia	Friends of Children with Special Needs		FCSN Executive Business Director
Miller	Cheryl	Diablo Fire Safe Council		Executive Director
Manalo	Ramses	ACFCWCD		Assitant Engineer
Lake	Carter	Lam Research		VP, GWS
Airth	Jeff	Fremont Resident		Citizen
Ames	Liz	Union City Resident		BART Director
Harris	Caroline	Newark Resident		
Sokale	Jana	Newark Resident		
Merrill	Nina	Santa Clara Valley Water District	Valley Water	Senior Water Resources Specialist
Stark	David			
Smith	Tom	Resident		
Guio	Lee	Resident		CERT Coordinator Union City
Jaclyn	Mardoske	San Francisco Bay Conservation & Development Commission	Adapting to Rising Tides Program	Senior Climate Adaptation Planner
Tom	Smyth	Fremont Resident		
Shashi	Rattan	Fremont Resident		
Jeanne	Jones	Fremont Resident		
Additional Persons (Meeting Attendees)				

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Foster	Jeanine	Foster Morrison	–	Consultant
Morrison	Chris	Foster Morrison	–	Consultant
Guitierez	Alejandro	Foster Morrison	–	Consultant
Howell	Brenna	Foster Morrison	–	Consultant
Campbell	Corina	City of Fremont	Fremont Fire	Business Manager
Do	Donna	City of Fremont	Finance	–
Bolaffi-Angst	Mimi	Bart		Director of Security
Havorka	Lenka	City of Newark		Assist. City Manager
Fajeau	Soren	City of Newark	Public Works	Director
Zatarain	Garry	Resident	Newark Cert	Cert Team Lead
Lee	John	–	Regional Center of East Bay	Emergency Coordinator
Miller	Wayne	Resident	–	–
Ledesma	Juan	–	Valley Water	Program Supervisor
Medina	Yamel	–	Fremont Cert	Volunteer
Earthy	John	–	Red Cross	Preparedness Lead
Additional Persons (Meeting Support)				
Rivera	Megan	City of Fremont	Fire Department	Administrative Assist.
Ward	Christina	City of Fremont	–	–
Venkan Ram	Deepa	City of Fremont	–	–
Gordon	Helen	City of Newark	–	–

Planning Committee Participant List

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
City of Fremont				
Fierro	Rocio	City of Fremont	City Attorney's Office	Senior Deputy City Attorney II
Schwarz	Steven	City of Fremont	City Attorney's Office - Risk Management	Risk Manager
Beranek	Kim	City of Fremont	Community Services	Deputy Director
Morris	Wayne	City of Fremont	Community Development	Deputy Director
Pullen	Joel	City of Fremont	Community Development	Planning Manager
West	Gary	City of Fremont	Community Development	Building Official
Kapur	Kranit	City of Fremont	Community Development	Sustainability Coordinator

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Lazaro	Donovan	City of Fremont	Economic Development	Economic Development Director
Ware	Vanessa	City of Fremont	City Manager's Office	Economic Development Coordinator
Persselin	David	City of Fremont	Finance	Director
Diaz	Zoraida	City of Fremont	Fire	Fire Chief
Mozdean	Heather	City of Fremont	Fire	Deputy Fire Chief
Miller	Greg	City of Fremont	Fire - Prevention	Deputy Fire Marshall
Tune	Alec	City of Fremont	Fire - Office of Emergency Services	Emergency Services Manager
Leon	John	City of Fremont	Information Technology Services	GIS Manager
Chan	Ron	City of Fremont	Information Technology Services	GIS Specialist
Hayes	Tim	City of Fremont	Information Technology Services	Systems Analyst/Programmer (GIS)
Wun	Ruby	City of Fremont	Information Technology Services	Data Coordinator
Chew	Ed	City of Fremont	Information Technology Services	Mapping Specialist
Veloso	Noe	City of Fremont	Public Works	Assistant City Engineer
Kishani	Dilip	City of Fremont	Public Works	Principal Engineer (CRS)
Shafaq	Homira	City of Fremont	Public Works	Floodplain Manager
Washington	Sean	City of Fremont	Police	Police Chief
Brede	Lance	City of Fremont	Police	Deputy Chief
McCormick	Paul	City of Fremont	Police	Lieutenant
Gee	Amy	City of Fremont	Police	Public Affairs Manager
Grimsich	Karen	City of Fremont	Human Services	Aging & Family Services Administrator
Aguilar	Mirabel	City of Fremont	Public Works	Senior Civil Engineer
Rivera	Megan	City of Fremont	Fire Department	Administrative Assist.
Venkan Ram	Deepa	City of Fremont	Fire	Executive Assistant
Schoenholz	Dan	City of Fremont	Community Development	Director
Chew	Ed	City of Fremont	GIS	Mapping Specialist
Campbell	Corina	City of Fremont	Fremont Fire	Business Manager

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Do	Donna	City of Fremont	–	–
City of Newark				
Martinez	Richard	City of Newark	City Manager's Office	Emergency Coordinator
Hovorka	Lenka	City of Newark	City Manager's Office	Assistant City Manager
Farrell	Matthew	City of Newark	Public Works	Chief Building Official
Connolly	Tonya	City of Newark	Public Works	Maintenance Superintendentsheeh
Macias	Jolie	City of Newark	Police	Captain
Turner	Steven	City of Newark	Community Development	Director
Fong	Peter	City of Newark	IT	IT Analyst
Lee	Krysten	City of Newark	Finance	Director
Del Rosario	Gloria	City of Newark	Finance	Accounting Manager
Fredstrom	Karl	City of Newark	Police	Police Sergeant
Libby	David	City of Newark (affiliated volunteer)	Fire	Volunteer Coordinator
Fajeau	Soren	City of Newark	Public Works	Director
Diana	Cangco	City of Newark	Public Works	Principal Civil Engineer
Havorka	Lenka	City of Newark	–	Assist. City Manager
Fajeau	Soren	City of Newark	Public Works	Director
City of Union City				
Martinez	Richard*	City of Union City	City Manager's Office	Emergency Coordinator
Campbell	Carmela	City of Union City	Economic Development	Director
Block	Andy	City of Union City	Economic & Community Development	Environmental Manager
Mai	Uyen	City of Union City	Economic & Community Development	Sustainability Analystjose
Azim	Farooq	City of Union City	Public Works	City Engineer
Tommy (Wai Chee)	Cho	City of Union City	Public Works	Principal Civil Engineer
Tran	Trieu	City of Union City	Public Works	Engineer II
Frick	Coleman	City of Union City	Economic & Community Development	Senior Planner

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Venook	Chuck	City of Union City	Economic & Community Development	Chief Building Official
Vallejo	Mario	City of Union City	IT	Director
Valvokus	Chris	City of Union City		Supervisor
Gutierrez	Jose	City of Union City	Public Works	Supervising Construction Inspector
Alameda County Water District				
Reed	Jacob	Alameda County Water District	O&M - Emergency and Security Services	Supervisor
Abellar	Caroline	Alameda County Water District		
Park	Daniel	Alameda County Water District	Information Technology Services	IT/GIS Analyst
Ippangunta	Rekha	Alameda County Water District	ETS - Project Engineering	Division Manager
Lai	Linda	Alameda County Water District		Engineer Tech
Union Sanitary District				
Terrazas	Karoline	Union Sanitary District (USD)	Business Services	Organizatonal Performance Manager**
Chau	Raymond	USD	Technical Services	Manager
Rodriguez	Jose	USD	Collection Services	Manager
Other Agencies, Stakeholders, and the Public				
Cabrera	DJ	Alameda County Sheriff's Office	Office of Emergency Services	Senior Emergency Services Coordinator
Casimere	Lincoln	Alameda County Fire Department	Emergency Services	Emergency Preparedness Manager
Rodgers	Jason	New Haven Unified School District	Maintenance, Operations, Transportation & Facilities	Director
Peralta	Ben	Ohlone Community College District	Campus Police Services	Police Officer
Sheehan	Brian	Alameda County Fire Department		Battalion Chief
Wade	Clint	California Department of Education	California Schools for the Deaf & Blind	Chief of Facilities

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Charles-Ellington	Toshia	California Department of Education	California Schools for the Deaf & Blind	Business Manager
O'Connell	Daniel	Washington Hospital Healthcare System	–	Safety & Security Director
Williams	Dwight	Washington Hospital Healthcare System	–	Safety & Security Supervisordiana
Wong	Kane	American Red Cross	–	Coordinator
Garcia	Brian	National Weather Service	National Weather Service SF Bay Area/Monterey	Warning Coordination Meteorologist
Wein	Anne	U. S. Geological Survey	–	–
Manalo	Ramses	ACFCWCD	–	Assistant Engineer
Airth	Jeff	Fremont Resident	–	Citizen
Ames	Liz	Union City Resident	–	BART Director
Harris	Caroline	Newark Resident	–	–
Sokale	Jana	Newark Resident	–	–
Stark	David	Bay East Association of Realtors	Pubic Affairs	–
Guio	Lee	Resident	–	CERT Coordinator Union City
Jaclyn	Mardoske	San Francisco Bay Conservation & Development Commission	Adapting to Rising Tides Program	Senior Climate Adaptation Planner
Jeanne	Jones	Fremont Resident	–	–
Bolaffi-Angst	Mimi	BART	–	Director of Security
Miller	Wayne	Resident		
Lee	John	–	Regional Center of East Bay	Emergency Coordinator
Zatarain	Garry	Resident	Newark Cert	Cert Team Lead
Ledesma	Juan	–	Valley Water	Program Supervisor
Medina	Yamel	–	Fremont Cert	Volunteer
Rawat	Rishika	Greenbelt Alliance	–	Resilience Fellow
Yen	Sylvia	Friends of Children with Special Needs	–	–
Dufour	Francesca	Alameda County Fire Department	Fire	ACFD Aide
Earthy	John	–	Red Cross	Preparedness Lead
Consultant Team				
Foster	Jeanine	Foster Morrison	–	Consultant

Last Name	First Name	Jurisdiction	Agency/Division	Position Title
Morrison	Chris	Foster Morrison	–	Consultant
Guitierez	Alejandro	Foster Morrison	–	Consultant
Howell	Brenna	Foster Morrison	–	Consultant

Planning Committee Kickoff Meeting

Kickoff Meeting Invite to Planning Committee, Stakeholders, and Public from the City of Fremont

Subject: RE: Project Kickoff: Local Hazard Mitigation Plan

Clarification regarding date: **Tuesday, May 23**

as corrected below.

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

From: Alec Tune <atune@fremont.gov>
Sent: Tuesday, May 9, 2023 3:49 PM
To: Karena McGee Shackelford <KShackelford@fremont.gov>; Brian Stott <BStott@fremont.gov>; Christina Briggs <CBriggs@fremont.gov>; Geneva Bosques <GBosques@fremont.gov>; Cheryl Golden <CGolden@fremont.gov>; Steven Schwarz -Risk <SSchwarz@fremont.gov>; Suzanne Wolf <SWolf@fremont.gov>; Kim Beranek <KBeranek@fremont.gov>; Juan Barajas <JBarajas@fremont.gov>; Wayne Morris <WMorris@fremont.gov>; Joel Pullen <JPullen@fremont.gov>; Gary West <GWest@fremont.gov>; David Wage <DWage@fremont.gov>; Rachel DiFranco <RDiFranco@fremont.gov>; Donovan Lazaro <DLazaro@fremont.gov>; Hein Hein Myat <HMyat@fremont.gov>; Zoraida Diaz <zdiaz@fremont.gov>; Heather Mozdean <hmozdean@fremont.gov>; Greg Miller <GMiller@fremont.gov>; Alec Tune <atune@fremont.gov>; Sanford Taylor <STaylor@fremont.gov>; David Yu <dyu@fremont.gov>; John Leon <jleon@fremont.gov>; Tim Hayes <thayes@fremont.gov>; Hans Larsen <HLarsen@fremont.gov>; Khandan Bahmani <KBahmani@fremont.gov>; Noe Veloso <NVeloso@fremont.gov>; DKishani@fremont.gov; Homira Shafaq <HShafaq@fremont.gov>; Kelly King <KKing@fremont.gov>; Jeff Edwards <JEdwards@fremont.gov>; Pat Kendrick <PKendrick@fremont.gov>; Lance Brede <lbrede@fremont.gov>; Amy Gee <agee@fremont.gov>; Arquimides Caldera <ACaldera@fremont.gov>; Karen Grimsich <KGrimsich@fremont.gov>; Cabrera Jr. Domingo S. Sheriff <dcabreraJr@acgov.org>; Rowena Cowan <rcowan@fusdk12.net>; nampon@fusdk12.net; Ben Peralta <BPeralta@ohlone.edu>; Atkins, Erika, Library <EAtkins@aclibrary.org>; moses@acpwa.org; gregl@acpwa.org; Khelae@ebparks.org; mechanic@mosquitoes.org; Barry.Stallard@pge.com; Robert.Ross@water.ca.gov; Gale, Josh <JGale@sfwater.org>; paul.wheeler@hayward-ca.gov; kjackson@actransit.org; mimi.bolaffi@bart.gov; Daniel_O'Connell@whhs.com; Gloria.Goldstein@kp.org; morlando@bach.health; sylviayeh@fcsn1996.org; cheryl.miller@diablofiresafe.org; mstoeffl@CAresiliency.org; DOusley@calquake.com; Dwight_Caldwell@dot.ca.gov; caltrans_d4@dot.ca.gov; cwade@csdf-cde.ca.gov; rpelayo@csdf-cde.ca.gov; tcharles-ellington@csdf-cde.ca.gov; victoria.lamar-haas@caloes.ca.gov; yvette.laduke@caloes.ca.gov; todd.becker@caloes.ca.gov; alison.kearns@fema.dhs.gov; brian.garcia@noaa.gov; awein@usgs.gov
Cc: CLT Only <CLTOnly@fremont.gov>; FFD_Command Staff <FFD_CommandStaff@fremont.gov>; Donna Do <DDo@fremont.gov>; Megan Rivera <mrivera@fremont.gov>; RichM <RichM@newark.org>; Ricardo Martinez <RicardoM@UnionCity.Org>; Jacob Reed <Jacob.Reed@acwd.com>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>; jeanine.foster <jeanine.foster@fostermorrison.com>
Subject: Project Kickoff: Local Hazard Mitigation Plan

Good Afternoon:

The City of Fremont is partnering with the Cities of Newark and Union City, Alameda County Water District, and Union Sanitary District to develop a **new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP).** The new plan will meet all requirements to update to the City of Fremont's 2016 LHMP, while better integrating critical utilities, neighboring jurisdictions, and other community stakeholders into our planning to reduce natural disaster risk.

The purpose of the Tri-City Multi-jurisdictional LHMP project is to reduce the impact that various natural hazards pose to residents, businesses, public and private property, and critical infrastructure in Fremont and across the Tri-City area ("the Planning Area"). The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local governments maintain a FEMA-approved LHMP in order to be eligible for certain grant funding to protect communities against potential future disaster-related losses. Additionally, the planning process presents an opportunity to enhance each cities' floodplain management programs by developing a framework to reduce the cost of flood insurance to residents and business who are required (or who elect) to maintain flood insurance. Each cities' flood insurance program is rated under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS). Visit my.fremont.gov for more information about the project.

You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. Participation on the Planning Committee will include:

- Attending and participating in five Planning Committee meetings (over the next 10 months)
- Contributing pertinent data or other information to the project, as needed
- Reviewing and providing comments on drafts of the plan

Project kickoff will occur at our first Planning Committee meeting, as follows. The kickoff meeting will explain the LHMP development process and your role.

Tuesday, May 23, 2023 (1:30 - 4:00 pm)
Downtown Event Center
Capitol Room
3500 Capitol Avenue
Fremont, CA 94538

A calendar invitation will follow by email shortly. Please kindly respond to the meeting invitation to RSVP.

Please feel free to reach me with any questions. Looking forward to your participation!

Best,

Alec Tune

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

Kickoff Meeting Invite to Planning Committee Stakeholders, and Public from the City of Newark

From: Rich Martinez <RichM@newark.org>
Sent: Wednesday, May 10, 2023 10:46 AM
To: Lenka Hovorka; Soren Fajeau; Steven Turner; Jolie Macias; Krysten Lee; Brian R. Simon; Matthew Farrell; Tonya Connolly; Peter Beireis; Peter Fong; Gloria Del Rosario; Ben Peralta; scondon@newarkunified.org; libbydavid4; Jeffrey Luepke - ACFD
Cc: Jeanine Foster
Subject: Tri-City LHMP Kickoff Planning Committee Meeting #1
When: Tuesday, May 23, 2023 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Fremont Downtown Event Center (3500 Capitol Ave, Fremont, Ca 94538)

Good Morning:

City of Newark is partnering with the Cities of Fremont and Union City, ACWD District, and USD to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The new plan will meet all requirements to update to the 2017 Union City/Newark Multi-Jurisdiction Hazard Mitigation Plan.

The purpose of the Tri-City Multi-jurisdictional LHMP project is to reduce the impacts that various natural hazards pose to residents, businesses, public and private property, and critical infrastructure across the Tri-City area ("the Planning Area"). The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local governments maintain a FEMA-approved LHMP in order to be eligible for certain grant funding to protect communities against potential future disaster-related losses. Additionally, the planning process presents an opportunity to enhance each cities' floodplain management programs by developing a framework to reduce the cost of flood insurance to residents and business who are required (or who elect) to maintain flood insurance. Each cities' flood insurance program is rated under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS). Visit my.fremont.gov for more information about the project.

You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. Participation on the Planning Committee will include:

- Attending and participating in five Planning Committee meetings (over the next 10 months)
- Contributing pertinent data or other information to the project, as needed
- Reviewing and providing comments on drafts of the plan

Project kickoff will occur at our first Planning Committee meeting, as follows. The kickoff meeting will explain the LHMP development process and your role.

You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. For more information about the project, visit my.fremont.gov.

Please join us for our Project Kickoff and first Planning Committee Meeting, as follows. The kickoff meeting will explain the LHMP development process and your role. Please see the agenda attached.

Tuesday, May 23, 2023 (1:30 - 4:00 pm)
Downtown Event Center
Capitol Room
3500 Capitol Avenue
Fremont, CA 94538

Questions? Please feel free to reach Rich Martinez, Project Manager, at 510.427.7772 or rich.martinez@newark.org

Regards,
Rich

Microsoft Teams meeting

Join on your computer, mobile app or room device
Click here to join the meeting
Meeting ID: 288 678 089 838
Passcode: u6YGgz
Download Teams | Join on the web
Learn More | Meeting options

Kickoff Meeting Invite to Planning Committee, Stakeholders, and Public from the City of Union City

From: Ricardo Martinez <RicardoM@UnionCity.Org>
Sent: Wednesday, May 10, 2023 10:30 AM
To: Jennifer Phan; Marilou Ayupan; Andy Block; Cliff Feldman; Mario Vallejo; Travis Souza; Corina Hahn; Bob Calderon; Chuck Venook; Coleman Frick; Casimere, Lincoln, ACFD; Farooq M. Azim
Cc: Jeanine Foster; Marcus Lam; Leung, Cindy; Thomas, Derrick, ACFD
Subject: Tri-City LHMP Kickoff & Planning Committee #1
When: Tuesday, May 23, 2023 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Fremont Downtown Event Center (3500 Capitol Ave, Fremont, Ca 94538)

Good Morning:

City of Union City is partnering with the Cities of Fremont and Newark, ACWD District, and USD to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The new plan will meet all requirements to update to the 2017 Union City/Newark Multi-Jurisdiction Hazard Mitigation Plan.

The purpose of the Tri-City Multi-jurisdictional LHMP project is to reduce the impacts that various natural hazards pose to residents, businesses, public and private property, and critical infrastructure across the Tri-City area ("the Planning Area"). The Federal Disaster Mitigation Act of 2000 (DMA 2000) requires that local governments maintain a FEMA-approved LHMP in order to be eligible for certain grant funding to protect communities against potential future disaster-related losses. Additionally, the planning process presents an opportunity to enhance each cities' floodplain management programs by developing a framework to reduce the cost of flood insurance to residents and business who are required (or who elect) to maintain flood insurance. Each cities' flood insurance program is rated under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS). Visit my.fremont.gov for more information about the project.
You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. Participation on the Planning Committee will include:

- Attending and participating in five Planning Committee meetings (over the next 10 months)
- Contributing pertinent data or other information to the project, as needed
- Reviewing and providing comments on drafts of the plan

Project kickoff will occur at our first Planning Committee meeting, as follows. The kickoff meeting will explain the LHMP development process and your role.

You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. For more information about the project, visit my.fremont.gov.

Please join us for our Project Kickoff and first Planning Committee Meeting, as follows. The kickoff meeting will explain the LHMP development process and your role. Please see the agenda attached.

Please join us for our Project Kickoff and first Planning Committee Meeting, as follows. The kickoff meeting will explain the LHMP development process and your role. Please see the agenda attached.

Tuesday, May 23, 2023 (1:30 - 4:00 pm)
Downtown Event Center
Capitol Room
3500 Capitol Avenue
Fremont, CA 94538

Questions? Please feel free to reach Rich Martinez, Project Manager, at 510.427.7772 or ricardom@unioncity.org

Kickoff Meeting Invite to Planning Committee, Stakeholders, and Public from the Alameda County Water District

Jacob Reed, ACWD project lead, provided direct invitations to ACWD staff as appropriate. A written invitation was not available to include.

Kickoff Meeting Invite to Planning Committee, Stakeholders, and Public from the Union Sanitary District

From: Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Sent: Monday, May 15, 2023 3:18 PM
To: Jose Rodrigues; Raymond Chau
Cc: Jeanine Foster
Subject: Hazard Mitigation Planning Committee Meeting #1 (Kickoff)
When: Tuesday, May 23, 2023 1:30 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Downtown Event Center, Capitol Room, 3500 Capitol Ave, Fremont CA 94538

Good Afternoon:

You have been selected to participate in the development of the Tri-City Multi-jurisdictional LHMP as a member of the Planning Committee. City, District, agency, and other stakeholders' participation is essential to developing a meaningful and high-quality plan for our community, while meeting State and Federal requirements. For more information about the project, visit my.fremont.gov.

Please join us for our Project Kickoff and first Planning Committee Meeting, as follows. The kickoff meeting will explain the LHMP development process and your role. Please see the agenda attached.

Tuesday, May 23, 2023 (1:30 - 4:00 pm)
Downtown Event Center
Capitol Room
3500 Capitol Avenue
Fremont, CA 94538

Questions? Please feel free to reach out.

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) PROJECT KICKOFF (& PLANNING COMMITTEE MEETING #1)

Tuesday, May 23, 2023
Downtown Event Center
Capitol Room
3500 Capitol Avenue
Fremont, CA 94538

---

1. Introductions
2. Hazard Mitigation & the Disaster Mitigation Act Planning Requirements
3. The National Flood Insurance Program (NFIP) Community Rating System (CRS)
4. The Role of the Planning Committee
5. Planning for Public Input
6. Coordinating with other Agencies
7. Hazard Identification
8. Schedule
9. Data Needs
10. Questions and Answers

Planning Committee Kickoff Meeting Sign-in Sheets

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Introductory Committee Meeting #1
May 23, 2023 (1:30 – 4:00 pm)
Downtown Event Center | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
RICARDO MARTINEZ	EMERGENCY SERVICES COORD	CITY OF UNION CITY & NEWARK	RICHARDOM@UNIONCITY.ORG	510-427-7772
John Logan	JLEON@FREMONT.GOV	CITY OF FREMONT	GIS MANAGER	510-494-4831
Tim Hayes	thayer@fremont.gov	city of fremont	System Analyst/Progr.	415 420-9706
Mimi Bolelli-Angst	Director of Security	BART Police Dept	Mimi.bolelli@bart.gov	510 464 7077.
Karen Grumaich	Administrator	City of Fremt Human Servs	KGrumaich@fremont.gov	5105742062
Raymond Chau	Technical Services Manager	Union Sanitary District	raymondc@unionsanitary.ca.gov	510-477-7606
Peter Fong	IT Analyst	city of Newark	peter.fong@ci.newark.org	510. 578.4048
Lincoln Casimere	Emergency Manager	ACFD	Lincoln.Casimere@acgov.org	(925)833-3473
Brenna Harrell	Emrgcy Manager	Harrell Consulting	brenna@brennaharrell.com	916 202-2435
Donna Do	Management Analyst	City of Fremont	DDo@fremont.gov	510- 494-4269
Paul Mc Cormick	Police Lieutenant	Fremont Police Dept	Pmccormick@fremont.gov	5107908871
DANIEL OCONNELL	WRHAMMAN HOSPITAL SAFETY SECURITY	WRHAMMAN HOSPITAL	DANIEL_OCONNELL@UHS.COM	510 818-7036
Kim Bernack	Dep Director Community Svcs	COF	KBernack@fremont.gov	510-494-4330
Wayne Morris	Dep Director Community Development	COF	WMorris@fremont.gov	408-705-5659
Kranti Kapur	Sustainability Coordinator	CDD, City of Fremont	KKapur@fremont.gov	510-494-4519
Steven Turner	Comm Dev. Dir	Newark	Stevner@newarkca.org	5105490208.
Donovan Lazaro	ED Director	City of Fremont	dlazaro@fremont.gov	510-484-4024

1

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Gloria del Rosario	Accounting Manager	City of Newark	gloria.delrosario@newark.org	(510) 578-4337
FAROOQ AZIM	CITY ENGINEER	CITY OF UNION CITY	FAROOQA@UNIONCITY.ORG	(510)468-4855 (cell)
Lenka Havorka	Asst. City Mgr.	CITY OF NEWARK	Lenka.Havorka@newarkca.org	510 673.7640.
Vanessa Ware	Economic Development Coord.	City of Fremont	Vware@fremont.gov	(510) 299-7305
Toshia Ellington	Bus Manager	Cal's School Deaf	tcharlesellington@CSDF-cde.ca.gov	(510) 643-3382
CLINT WADE	C.P.O. II	C.D.E	Cwade@CSDF.CDE.CA.GOV	(510) 657-0615
SAREN FARAH	PUBLIC WORKS DIRECTOR	CITY OF NEWARK	saren.farah@newarkca.org	(510) 578-4286
LANCE BREDE	DEPUTY CHIEF	CITY OF FREMONT	LBREDE@FREMONT.GOV	(510) 790-6930

2

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Amy Gee	Public Affairs Manager	Fremont Police Dept	agee@fremont.gov	510-790-6967
Karoline Terrazas	Org Devt. Mgr	USD	karolinet@unionsanitary.ca.gov	925 487-2897
DOMINGO CABRERA	ST. EMERGENCY SERVICES COOR	ACSO OES	DCABRERA.JR@ACGOV.ORG	(510) 804-1958
Carina Campbell	Business Mgr	Fire	ccampbell@fremont	(510) 494-4295
STEVE SCHWARZ	RISK MANAGER	City Attorney	sschwarz@fremont.gov	510 284-4050
Coleman Frick	Senior planner	ECD	colemanf@unioncity.org	510-675-5426
Jose Rodrigues	Collection Services Manager	USD	Joser@unionsanitary.ca.gov	510-477-7542
DILIP KISHNANI	Principal Civil Engr	COF	dkishnan@fremont.gov	510-494-4736
Mario Vallejo	IT Director	Union City IT	mariov@unioncity.org	510-513-1112
Daniel Libby	VOLUNTEER COORD.	Newark	LibbyDaniel@ci.newark.ca.us	510-565-4436
SEAN WASHINGTON	POLICE CHIEF	FREMONT POLICE	swashington@fremont.gov	(510) 790-6969
Chris Valvelas	SUPERVISOR	City of Union City	chrisv@unioncity.org	510-675-5492
Dan Schoenholz	CDD Director	City of Fremont	ds.hoenholz@fremont.gov	510-494-4438

3

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Megan Rivera	Administrative Assistant	Fremont Fire	mrivera@fremont.gov	510-494-4217
Alec Tune	OES Manager	Fremont Fire	Atune@fremont.gov	
Ruby Wun	Data Coordinator	GIS	rwun@fremont.gov	510-494-4833
Ed Chew	Mapping Specialist	GIS	echew@fremont.gov	510-494-4842
Kane Wong	Volunteer	ARC	kane.wong@redcross.org	925-577-7578
Sanford W. Taylor	CIO	City of FREMONT	Staylor@fremont.gov	510-494-4802
Andy Block	ENVIRONMENTAL PROGRAMS MANAGER	CITY of UNION CITY	ANDYB@unioncity.org	510-760-7099
Jason Kong	BATTALION CHIEF	FIRE	Jkong@fremont.gov	510-552-2877
Kamee Bahmani	City Engineer	COF	Kbahmani@Fremont.gov	510-494-4768
Joel Pullen	Planning Manager	COF	jpullen@fremont.gov	(510) 494-4436
Christina Briggs	Asst. CM	CMO	cbriggs@fremont.gov	510 284-4022
Greg Miller	Deputy Fire Marshal	COF	gmiller@Fremont.gov	510-494-4202
HOMIRA SHAFAQ	CIVIL ENGINEER II	COF PUBLIC WORKS	hshafaq@fremont.gov	510-494-4708
Jacob Reed	Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 364-0230
Jennifer Phan	Deputy City Manager	Union City	jenniferp@unioncity.org	(510) 648-7238
Dane Perserin	Finance Director	Fremont	dperselin@fremont.gov	(510) 494-4671
Paul Roman	Streets Supervisor	City of Union City	PaulR@unionCity.org	510 755-4494
Matthew Farrell	CBO	City of Newark	Matthew.farrell@newarkca.gov	510-578-4217
Ben Peralta	DIRECTOR, CAMPUS POLICE/SAL	OHLONE COMM. COLLEGE	BPeralta@ohlone.edu	510-659-6111

4

Planning Committee Risk Assessment Meeting

Risk Assessment Meeting Invite to Planning Committee, Stakeholders, and Public from the City of Fremont

From: Megan Rivera <mrivera@fremont.gov>
Sent: Tuesday, July 11, 2023 8:46:41 AM (UTC-08:00) Pacific Time (US & Canada)
To: Karena McGee Shackelford <KShackelford@fremont.gov>; Brian Stott <BStott@fremont.gov>; Christina Briggs <CBriggs@fremont.gov>; Geneva Bosques <GBosques@fremont.gov>; Cheryl Golden <CGolden@fremont.gov>; Rocio Fierro <RFierro@fremont.gov>; Steven Schwarz -Risk <SSchwarz@fremont.gov>; Suzanne Wolf <SWolf@fremont.gov>; Kim Beranek <KBeranek@fremont.gov>; Juan Barajas <JBarajas@fremont.gov>; Dan Schoenholz <DSchoenholz@fremont.gov>; Wayne Morris <WMorris@fremont.gov>; Joel Pullen <JPullen@fremont.gov>; Gary West <GWest@fremont.gov>; David Wage <DWage@fremont.gov>; Rachel DiFranco <RDiFranco@fremont.gov>; Kranti Kapur <kkapur@fremont.gov>; Donovan Lazaro <DLazaro@fremont.gov>; Vanessa Ware <VWare@fremont.gov>; David Persselin <DPersselin@fremont.gov>; Hein Hein Myat <HMyat@fremont.gov>; Zoraida Diaz <zdiaz@fremont.gov>; Heather Mozdean <hmozdean@fremont.gov>; Jason Kong <JKong@fremont.gov>; Greg Miller <GMiller@fremont.gov>; Alec Tune <atune@fremont.gov>; Sanford Taylor <STaylor@fremont.gov>; David Yu <dyu@fremont.gov>; John Leon <jleon@fremont.gov>; Tim Hayes <thayes@fremont.gov>; Ruby Wun <rwun@fremont.gov>; Ed Chew <EChew@fremont.gov>; Hans Larsen <HLarsen@fremont.gov>; Khandan Bahmani <KBahmani@fremont.gov>; Noe Veloso <NVeloso@fremont.gov>; Dilip Kishnani <DKishnani@fremont.gov>; Homira Shafaq <HShafaq@fremont.gov>; Kelly King <KKing@fremont.gov>; Jeff Edwards <JEdwards@fremont.gov>; Pat Kendrick <PKendrick@fremont.gov>; Sean Washington <SWashington@fremont.gov>; Lance Brede <lbrede@fremont.gov>; Paul McCormick <PMccormick@fremont.gov>; Amy Gee <agee@fremont.gov>; Arquimides Caldera <ACaldera@fremont.gov>; Karen Grimsich <KGrimsich@fremont.gov>; Cabrera, Domingo S., Sheriff <dcabreraJr@acgov.org>; paul.wheeler@hayward-ca.gov <paul.wheeler@hayward-ca.gov>; Lincoln.Casimere <Lincoln.Casimere@acgov.org>; Rowena Cowan <rcowan@fusdk12.net>; nampon@fusdk12.net <nampon@fusdk12.net>; bperalta <bperalta@ohlone.edu>; moses@acpwa.org <moses@acpwa.org>; gregl@acpwa.org <gregl@acpwa.org>; EAtkins@aclibrary.org <EAtkins@aclibrary.org>; robert.ross@water.ca.gov <robert.ross@water.ca.gov>; jgale@sfwater.org <jgale@sfwater.org>; kjackson@actransit.org <kjackson@actransit.org>; mimi.bolaffi@bart.gov <mimi.bolaffi@bart.gov>; khelae@ebparks.org <khelae@ebparks.org>; bguzman@ebparks.org <bguzman@ebparks.org>; barry.stallard@pge.com <barry.stallard@pge.com>; cwade@csdf-cde.ca.gov <cwade@csdf-cde.ca.gov>; rpelayo@csdf-cde.ca.gov <rpelayo@csdf-cde.ca.gov>; tcharles-ellington@csdf-cde.ca.gov <tcharles-ellington@csdf-cde.ca.gov>; morlando@bach.health <morlando@bach.health>; Daniel O'Connell <Daniel_O'Connell@whhs.com>; mstoeffl@caresiliency.org <mstoeffl@caresiliency.org>; Wong, Kane <kane.wong3@redcross.org>; edgar.orre@fire.ca.gov <edgar.orre@fire.ca.gov>; victoria.lamar-haas@caloes.ca.gov <victoria.lamar-haas@caloes.ca.gov>; matthew.palmer@caloes.ca.gov <matthew.palmer@caloes.ca.gov>; yvette.laduke@caloes.ca.gov <yvette.laduke@caloes.ca.gov>; todd.becker@caloes.ca.gov <todd.becker@caloes.ca.gov>; alison.kearns@fema.dhs.gov <alison.kearns@fema.dhs.gov>; brian.garcia@noaa.gov <brian.garcia@noaa.gov>; awein@usgs.gov <awein@usgs.gov>; jcastro@calquake.com <jcastro@calquake.com>; sylviayeh@fcsn1996.org <sylviayeh@fcsn1996.org>; cheryl.miller@diablofiresafe.org <cheryl.miller@diablofiresafe.org>; alcovoad@gmail.com <alcovoad@gmail.com>; leholm@edinir.org <leholm@edinir.org>; rhalog@ilrscc.org <rhalog@ilrscc.org>; satkinson@spur.org <satkinson@spur.org>; Rich Martinez <RichM@newark.org>; Ricardo Martinez <RicardoM@UnionCity.Org>; Jacob Reed <Jacob.Reed@acwd.com>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>; Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Tri-City LHMP Planning Committee Meeting #2 (Risk Assessment)
When: Thursday, August 17, 2023 1:00 PM-4:00 PM.
Where: Newark Library | 37055 Newark Blvd, Newark, CA 94560

Good Afternoon:

In May, we kicked off the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project. That meeting provided an overview of the project and was used to identify a list of natural hazards (e. g., earthquake, wildfire, flood, sea level rise, etc.) to include in the LHMP. Since then, Foster Morrison Consulting has been collecting data and preparing a risk assessment – which will consist of a written profile and analysis of each identified natural hazard, supported by technical, historical, and authoritative data. The risk assessment will become a part of the new LHMP.

Please join us for our second Planning Committee Meeting, as follows. The purpose of this meeting is to share draft risk assessment materials – including mapping, data, and other information – and invite your feedback. Please see the agenda attached.

Thursday, August 17, 2023 (1:00 - 4:00 pm)
Newark Library
37055 Newark Blvd.**
Newark, CA 94560
access to parking and the facility via Civic Terrace Ave.

Questions? Please feel free to reach Alec Tune, Project Manager, at 510.494.4256 or atune@fremont.gov. For more information about the project, visit my.fremont.gov.

Risk Assessment Meeting Invite to Planning Committee, Stakeholders, and Public from the City of Newark

From: Rich Martinez <RichM@newark.org>
Sent: Thursday, July 13, 2023 3:28 PM
To: Lenka Hovorka; Soren Fajeau; Steven Turner; Jolie Macias; Krysten Lee; Brian R. Simon; Matthew Farrell; Tonya Connolly; Peter Beireis; Peter Fong; Gloria Del Rosario; bperalta; scondon; libbydavid4; Jeffrey Luepke - ACFD; Diana Cangco
Cc: Jeanine Foster
Subject: Tri-City LHMP Planning Committee Meeting #2 (Risk Assessment)
When: Thursday, August 17, 2023 1:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Newark Library (37055 Newark Blvd, Newark, CA 94560)

Good Afternoon:

In May, we kicked off the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project. That meeting provided an overview of the project and was used to identify a list of natural hazards (e. g., earthquake, wildfire, flood, sea level rise, etc.) to include in the LHMP. Since then, Foster Morrison Consulting has been collecting data and preparing a risk assessment – which will consist of a written profile and analysis of each identified natural hazard, supported by technical, historical, and authoritative data. The risk assessment will become a part of the new LHMP.

Please join us for our second Planning Committee Meeting, as follows. The purpose of this meeting is to share draft risk assessment materials – including mapping, data, and other information – and invite your feedback. Please see the agenda attached.

Thursday, August 17, 2023 (1:00 - 4:00 pm)
Newark Library
37055 Newark Blvd.**
Newark, CA 94560
access to parking and the facility via Civic Terrace Ave.

Questions? Please feel free to reach Richard Martinez, Project Manager, at 510.427.7772 or rich.martinez@newark.org . For more information about the project, visit my.fremont.gov.

Risk Assessment Meeting Invite to Planning Committee, Stakeholders, and Public from the City of Union City

From: Ricardo Martinez
Sent: Wednesday, July 12, 2023 10:24:03 AM
To: Ricardo Martinez <RicardoM@unioncity.org>; Jennifer Phan <jenniferp@Unioncity.org>; Mario Vallejo <MarioV@unioncity.org>; Corina Hahn <CorinaH@unioncity.org>; Farooq M. Azim <FarooqA@unioncity.org>; Coleman Frick <colemanf@Unioncity.org>; Chuck Venook <ChuckV@Unioncity.org>; Chris Valuckas <ChrisV@unioncity.org>; Tommy (Wai Chee) Cho <TommyC@unioncity.org>; Trieu Tran <TrieuT@unioncity.org>; Lt. Brian Baumgartner <BrianB@UnionCity.Org>; Casimere, Lincoln, ACFD <Lincoln.Casimere@acgov.org>; Paul Roman <PaulR@unioncity.org>; Jose Gutierrez <JoseG@unioncity.org>; Cliff Feldman <CliffF@Unioncity.org>
Cc: Thomas, Derrick, ACFD <derrick.thomas@acgov.org>; Marilou Ayupan <MarilouA@unioncity.org>; Carmela Campbell <CarmelaC@unioncity.org>; Jason Rodgers <jrodgers@nhusd.k12.ca.us>; Servin, Ian <ian.servin2@redcross.org>; kane.wong3@redcross.org <kane.wong3@redcross.org>; Lee Guio <leeguio@gmail.com>
Subject: Tri-City Multi-jurisdictional LHMP Planning Committee Meeting #2
When: Thursday, August 17, 2023 1:00 PM-4:00 PM.
Where: Newark Library (37055 Newark Blvd, Newark, CA 94560)

Good morning:

In May, we kicked off the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project. That meeting provided an overview of the project and was used to identify a list of natural hazards (e. g., earthquake, wildfire, flood, sea level rise, etc.) to include in the LHMP. Since then, Foster Morrison Consulting has been collecting data and preparing a risk assessment – which will consist of a written profile and analysis of each identified natural hazard, supported by technical, historical, and authoritative data. The risk assessment will become a part of the new LHMP.

Please join us for our second Planning Committee Meeting, as follows. The purpose of this meeting is to share draft risk assessment materials – including mapping, data, and other information – and invite your feedback. Please see the agenda attached.

Thursday, August 17, 2023 (1:00 - 4:00 pm)
Newark Library
37055 Newark Blvd.**
Newark, CA 94560
access to parking and the facility via Civic Terrace Ave.

Questions? Please feel free to reach Rich Martinez, Project Manager, at 510.675.5363 or ricardm@unioncity.org. For more information about the project, visit my.fremont.gov

Risk Assessment Meeting Invite to Planning Committee, Stakeholders, and Public from the ACWD

Jacob Reed, ACWD project lead, provided direct invitations to ACWD staff as appropriate. A written invitation was not available to include.

Risk Assessment Meeting Invite to Planning Committee, Stakeholders, and Public from the USD

From: Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Sent: Monday, May 15, 2023 2:19 PM
To: Karoline Terrazas; Jose Rodrigues
Cc: Jeanine Foster
Subject: Hazard Mitigation Planning Committee Meeting #2 (Risk Assessment)
When: Thursday, August 17, 2023 1:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Newark Library | 37055 Newark Blvd, Newark, CA 94560

EXTERNAL EMAIL: BE CAREFUL BEFORE CLICKING ANY LINKS OR ATTACHMENTS

Good Afternoon:

In May, we kicked off the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project. That meeting provided an overview of the project and was used to identify a list of natural hazards (e. g., earthquake, wildfire, flood, sea level rise, etc.) to include in the LHMP. Since then, Foster Morrison Consulting has been collecting data and preparing a risk assessment – which will consist of a written profile and analysis of each identified natural hazard, supported by technical, historical, and authoritative data. The risk assessment will become a part of the new LHMP.

Please join us for our second Planning Committee Meeting, as follows. The purpose of this meeting is to share draft risk assessment materials – including mapping, data, and other information – and invite your feedback. Please see the agenda attached.

Thursday, August 17, 2023 (1:00 - 4:00 pm)
Newark Library
37055 Newark Blvd.**
Newark, CA 94560
access to parking and the facility via Civic Terrace Ave.

Questions? Please feel free to reach Alec Tune, Project Manager, at 510.494.4256 or atune@fremont.gov. For more information about the project, visit my.fremont.gov

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) PLANNING COMMITTEE MEETING #2 - RISK ASSESSMENT

Thursday August 17, 2023
1:00 - 4:00 pm
Newark Library
37055 Newark Blvd.
Newark, CA 94560

---

1. Introductions
2. Status of the LHMP Planning Process
3. Review of Risk Assessment (PowerPoint)
4. Open Discussion and Input on the Risk Assessment (Handout)
5. Review of Data Needs
6. Next Steps

Planning Committee Risk Assessment Meeting Sign in Sheets

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Planning Committee Meeting #2 (Risk Assessment)
August 17, 2023 (1:00 –4:00 pm)
Newark Library I Newark, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
CHUCK VERNOOY	CHIEF BUILDING OFFICIAL	V.C. BLG. DEPT.	chuckv@unioncity.org	
Megan Rivera	Admin Assistant	Fremont Fire Dept.	mrivera@fremont.gov	(510) 494-4217
DAVID TUMEO	EMERGENCY SVCS MGR.	FREMONT FIRE DEPT.	dtumeo@fremont.gov	(510) 494-4056
GARRY ZATARAIN	CERT TEAM LEAD	NEWARK CERT	Zghost@ATT.NET	510-377-9653
JASON RODGERS	DIRECTOR MOT	NEW HAVEN USD	JRODGERS@NHUSD.K12.CA.US	(510) 300-5574
Mario Vallejo	IT Director	Union City	mariov@unioncity.org	(510) 513-1112
Jacob Reed	A Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 504-6030
Karen Grunnah	Admin COF	Human Servs	Kgrunnah@fremont.gov	510-200-3794
Tommy Cho	Principal Civil Engineer	Union City	tommyc@unioncity.org	510-675-5305
Jose Rodrigues	Collection Services Manager	Union Sanitary District	Joser@unionsanitary.ca.gov	510-477-7542
Ron Chan	GIS Specialist	City of Fremont	rchan@fremont.gov	510-494-4832
JOHN LEON	GIS MANAGER		jleon@fremont.gov	510-494-4837
Tonya Connolly	Mtnc. Supv.	City of Newark	tonyac@newark.org	510/578-4802
DAN O'CONNELL	STREET SECURITY	WASHINGTON HOSP.	DANIEL.OCONNELL@WHHS.COM	510/818-7036
Kranti Kapur	Sustainability Coordinator	City of Fremont	KKapur@fremont.gov	550-320-6367
BRIAN Sheehan	Battalion Chief ACFD	Alameda County Fire Dept	Brian.Sheehan@acgov.org	(925) 895 3759
Karalyne Terrazas	OPM	USD	karalynet@unionsanitary.ca.gov	
Ed Chew	IS APP SPECIALIST	Fremont GIS	echew@fremont.gov	510-494-4462
NOE VELOSO	ASST. CITY ENGR	FREMONT PW	nveloso@fremont.gov	510-494-4774

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
JOHN LEE	EMERGENCY COORD.	RCEB	JLEE@RCEB.ORG	510-618-6303
Lee Guio	CERT Coordinator	Union City	lee@leeguio.com	408-888-8413
Mirabel Aguilar	Senior Civil Eng.	Fremont	meguilar@fremont.gov	510 494 4786
Wayne Miller	Citizen Reserves Mayhews Fire	Newark	WMCATS@AOL.com	510-676-7918 cell
Juan Ledesma	Program Admin. Supervisor	Valley Water	jledesma@valleywater.org	408 691 5983
Jana SOKALE	resident/CCCR		janasic@aol.com	
DAVID PERSSELIN	FINANCE DIRECTOR	FREMONT	dpersselin@fremont.gov	510-494-4671
Homira Shafaq	Civil Engr. II	Fremont	homira.shafaq@gmail.com	494-4870
RICARDO MARTINEZ	EMERGENCY COOR	UNION CITY/NEWARK	RICARDOM@unioncity.org	510 427 7772
Jaclyn Mandeville	Sr. Climate Adaptation planner	BCDC	jaclyn.mandeville@bcdc.ca.gov	
Steven Turner	Comm Dev. Dir	Newark	steven.turner@newark.org	5105784208
Uyen Mai	Sustainability Analyst	Union City	uyenm@unioncity.org	510-459-5083
Vanessa Ware	Economic Development Coord.	Fremont	vware@fremont.gov	(510) 298-7305
CHRIS Morrison	Consultant	Foster Morrison	chris.morrison@fostermorrison.com	701-318-4445

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Jose Gutierrez	Supervising Construction Inspector	Public Works/Union City	joseg@unioncity.org	510-675-5302
Amy Gee	Public Affairs Manager	Fremont Police	agee@fremont.gov	510-790-6967
Peter Fong	IT Analyst	City of Newark	peter.fong@newarkca.gov	510-578-4045
Trieu TRAN	ENGINEER	CITY OF UNION CITY	trieut@unioncity.org	510-675-5301
Joe C Pullen	Planning Manager	C.O. Fremont	jpullen@fremont.gov	(510) 304-5204
Jeff AIRTH	Resident - Fremont		jeffairth@hotmail.com	510 468 9859
Ruby Wun	Data Coordinator	City of Fremont	rwun@fremont.gov	(510) 494-4833
Tim Hayes	Systems Analyst GIS	City of Fremont	thayes@fremont.gov	(510) 494-4830
David Wilson	Safety & Security Supv.	Washington Hospital	David.Wilson@whhs.com	(510) 818-7516
Paul McCormick	POLICE LIEUTENANT	FREMONT POLICE	pmccormick@fremont.gov	7906800
DIANA CANGCO	PRINCIPAL CIVIL ENG.	CITY OF NEWARK	DIANAC@NEWARK.ORG	510.578-4285
MACIAS, JOLIE	POLICE CAPTAIN	NEWARK	jolie.macias@newarkca.gov	(510) 578-4921
Larry West	Building Official	City of Fremont	lwest@fremont.gov	510 494-4413
Krystle Lee	Finance Director	City of Newark	krystlel@newarkca.gov	510-578-4288
Coleman Frick	Senior Planner	City of Union City	cdemanfrick@unioncity.org	510-675-5325
Lenka Horonka	Asst City Mgr	City of Newark	lenkah@newark.org	510-673-7640
Bon Peranda	DIRECTOR, OHLONE PD	OHLONE COLLEGE PD	BPeranda@ohlone.edu	510-659-6111
Gloria del Rosario	Accounting Mgr.	City of Newark	gloria.delrosario@newark.org	510.331.9063
Caroline Harris			caroline.harris@earthlink.net	415 5779800
Liz Ames	TCEC, BART Director	TCEC, BART	liz4bart@gmail.com	510 371 1314

3

Planning Committee Mitigation Strategy Meetings

Mitigation Strategy Meetings Invite to Planning Committee, Stakeholders, and Public from the City of Fremont

From: Megan Rivera <mrivera@fremont.gov>
Sent: Thursday, August 31, 2023 11:55 AM
To: Megan Rivera; Karena McGee Shackelford; Brian Stott; Christina Briggs; Geneva Bosques; Cheryl Golden; Rocio Fierro; Steven Schwarz -Risk; Suzanne Wolf; Kim Beranek; Juan Barajas; Dan Schoenholz; Wayne Morris; Joel Pullen; Gary West; David Wage; Rachel DiFranco; Kranti Kapur; Donovan Lazaro; Vanessa Ware; David Persselin; Hein Hein Myat; Zoraida Diaz; Heather Mozdean; Greg Miller; Alec Tune; Sanford Taylor; David Yu; John Leon; Tim Hayes; Ruby Wun; Ed Chew; Hans Larsen; Khandan Bahmani; Noe Veloso; Dilip Kishnani; Homira Shafaq; Kelly King; Jeff Edwards; Pat Kendrick; Sean Washington; Lance Brede; Paul McCormick; Amy Gee; Arquimides Caldera; Karen Grimsich; Cabrera, Domingo S., Sheriff; paul.wheeler@hayward-ca.gov; lincoln.casimere@acgov.org; Rowena Cowan; nampon@fusdk12.net; Ben Peralta; moses@acpwa.org; gregl@acpwa.org; EAtkins@aclibrary.org; robert.ross@water.ca.gov; jgale@sfwater.org; kjackson@actransit.org; mimi.bolaffi@bart.gov; khelae@ebparks.org; bguzman@ebparks.org; barry.stallard@pge.com; cwade@csdf-cde.ca.gov; rpelayo@csdf-cde.ca.gov; tcharles-ellington@csdf-cde.ca.gov; morlando@bach.health; Daniel O'Connell; mstoeffl@caresiliency.org; Wong, Kane; edgar.orre@fire.ca.gov; victoria.lamar-haas@caloes.ca.gov; matthew.palmer@caloes.ca.gov; yvette.laduke@caloes.ca.gov; todd.becker@caloes.ca.gov; alison.kearns@fema.dhs.gov; brian.garcia@noaa.gov; awein@usgs.gov; jcastro@calquake.com; sylviayeh@fcsn1996.org; cheryl.miller@diablofiresafe.org; alcovoad@gmail.com; leholm@edinir.org; rhalog@ilrscc.org; satkinson@spur.org; Rich Martinez; Ricardo Martinez; Jacob Reed; Karoline Terrazas; Jeanine Foster; Mirabel Aguilar; jeffair@hotmail.com; liz4bart@gmail.com; caroline.harris@earthlink.net; janaslc@aol.com; info@bayareametro.gov; info@bcdc.ca.gov
Cc: Stallard, Barry; Jose Rodrigues; Nina Merrill; ReceptionDesk@BCDC; Goldzband, Larry@BCDC; Scharff, Greg@BCDC; Goeden, Brenda@BCDC; Noble, Angela@BCDC; Zeppetello, Marc@BCDC; Plater, Brent@BCDC; Buehmann, Erik@BCDC; Ron Halog; Lars Eric Holm; McGrath, Delia@DWR; Ron Chan; Hallenbeck, Todd@BCDC; Gomez, Grace@BCDC; hollyamillion@gmail.com; Cochran, Taleen@BCDC; John Lee; Hawkins, Ava@BCDC; Dwight Williams; holly@diablofiresafe.org; Daniel Park; Linda Lai; Caroline.Abellar; Thomas Niesar; Girum Awoke; Mike Casey; Corina Campbell; Laura Hidas; Jimmy Chen
Subject: Tri-City Multi-jurisdictional Local Hazard Mitigation Plan
When: Tuesday, September 19, 2023 1:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Alameda County Water District | 43885 S. Grimmer Blvd. Fremont, CA 94538

Good Afternoon,

Thanks to all who participated in the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project's Planning Committee Meeting 2 on August 17. Your input is greatly appreciated and will be used in the Risk Assessment portion of the new plan.

Please join us for our next two Planning Committee Meetings, as follows (**updated -- see agenda attached and FEMA Mitigation Ideas resource).

Tuesday, September 19, 2023 (1:00 – 4:00 pm) – we will be briefly revisiting the risk assessment data developed to date. We will also be establishing updated LHMP goals and objectives.

Alameda County Water District
Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538

Wednesday, September 20, 2023 (9:00 am – 12:00 pm) – we will be working to identify and discuss potential mitigation actions and projects for reducing the Tri-City Planning Area's risk and vulnerability to identified hazards and disasters.

Same location as above

Our final Planning Committee Meeting will be held in Fremont on Thursday, January 25, 2024 (9:00 – 11:30 am).

Questions? Please feel free to reach Alec Tune, Project Manager, at 510.494.4256 or atune@fremont.gov. For more information about the project, visit my.fremont.gov.

Mitigation Strategy Meetings Invite to Planning Committee, Stakeholders, and Public from the City of Newark

From: Richard Martinez <richard.martinez@newark.org>
Sent: Tuesday, September 12, 2023 4:25 PM
To: Lenka Hovorka <lenka.hovorka@newark.org>; Steven Turner <steven.turner@newark.org>; Soren Fajeau <soren.fajeau@newark.org>; Jolie Macias <jolie.macias@newark.org>; Peter Fong <peter.fong@newark.org>; Diana Cangco <diana.cangco@newark.org>; Matthew Farrell <matthew.farrell@newark.org>; Tonya Connolly <tonya.connolly@newark.org>; Brian R. Simon <brian.simon@newark.org>; Krysten Lee <krysten.lee@newark.org>; Gloria Del Rosario <gloria.delrosario@newark.org>; Jeffrey Luepke - ACFD <Jeffrey.Luepke@acgov.org>; Lincoln.Casimere <Lincoln.Casimere@acgov.org>; bperalta <bperalta@ohlone.edu>; scondon <scondon@newarkunified.org>; Peter Beireis <peter.beireis@newark.org>; zghost <zghost@att.net>; Carmelisa Lopez <carmelisa.lopez@newark.org>
Cc: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: FW: REMINDER: Tri-City LHMP Mitigation Strategy Meetings

Hi All,

In advance of next week's **Tri-City Local Hazard Mitigation Plan (LHMP) Mitigation Strategy meetings**, please see below:

Prep for next week's working meetings
Identify and bring your mitigation project ideas to the meetings!

These are the two most important meetings for this LHMP project:

- ✓ **Tuesday, September 19 (1:00 - 4:00 pm)** - we will be briefly revisiting the risk assessment data developed to date. We will also be establishing updated LHMP goals and objectives.
- ✓ **Wednesday, September 20 (9:00 am – 12:00 pm)** - we will be working to identify and discuss potential mitigation actions and projects for reducing the Tri-City Planning Area's risk and vulnerability to identified hazards and disasters.

Meeting Location (For both September 19th and 20th meetings):
Alameda County Water District
Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538

Please make sure everyone attends that has mitigation actions and projects to include in the LHMP for all identified priority hazards.

Attached is a FEMA publication – Mitigation Ideas & Agenda for both Tuesday & Wednesday meetings

Take a look – it is easy to skim through and will give you mitigation ideas, by hazard. What fits for the Tri-City LHMP?

Agency and stakeholder participation and coordination is a requirement of an approved LHMP, as is the inclusion of any hazard data, information, and mitigation projects your department or agency may want to see included in the plan. Your continued participation and input is critical to the success of this project!

I know many of you will be attending the City Management, Supervisory meeting on Tuesday we will plan to see you all on Wednesday. Those who can make both days we will see you there.

Please let me know if you have questions.

Regards,
Richard

Richard Martinez
Emergency Coordinator
City of Newark | 37101 Newark Boulevard | Newark, CA | 94560
Office: 510-578-4806 | **Direct:** 510-578-4821 | **Fax:** 510-578-4899

City of Union City – Contracted by City of Newark

Mitigation Strategy Meetings Invite to Planning Committee, Stakeholders, and Public from the City of Union City

From: Ricardo Martinez <RicardoM@UnionCity.Org>
Sent: Monday, August 28, 2023 2:22 PM
To: Ricardo Martinez; Jennifer Phan; Mario Vallejo; Farooq M. Azim; Jose Gutierrez; Paul Roman; Coleman Frick; Cliff Feldman; Chuck Venook; Tommy (Wai Chee) Cho; Lt. Brian Baumgartner; Casimere, Lincoln, ACFD; Ben Peralta; kane.wong3@redcross.org; Lee Guio
Cc: Jeanine Foster; Chris Valuckas
Subject: LHMP Planning meeting #3
When: Tuesday, September 19, 2023 1:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Alameda County Water District (43885 S Grimmer Blvd, Fremont, CA 94538)

Good Afternoon,

Thanks to all who participated in the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project's Planning Committee Meeting 2 on August 17. Your input is greatly appreciated and will be used in the Risk Assessment portion of the new plan.

Please join us for our next two Planning Committee Meetings, as follows. In these meetings, we'll dive even deeper into our risks (including new seismic hazard modelling performed by the Consultant, Foster Morrison) and then develop a list of Mitigation Strategies. Mitigation strategies include potential capital investments, policies, or other initiatives to reduce long-term community risk. Agenda to follow.

Tuesday, September 19, 2023 (1:00 – 4:00 pm)
Alameda County Water District
Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538

Wednesday, September 20, 2023 (9:00 am – 12:00 pm)
Same location as above

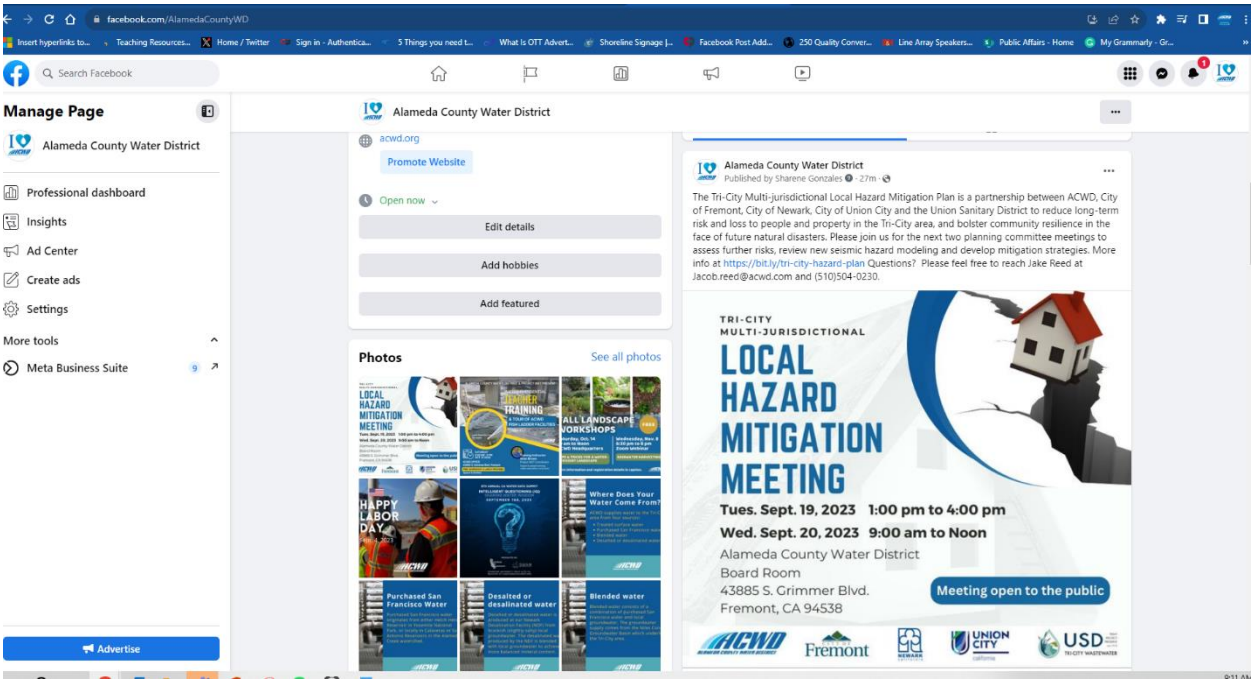
Our final Planning Committee Meeting will be held in Fremont on Thursday, January 25, 2024 (9:00 – 11:30 am).

Questions? Please feel free to reach Richard Martinez, Project Lead, at 510.675.5363 or ricardom@unioncity.org For more information about the project, visit my.fremont.gov.

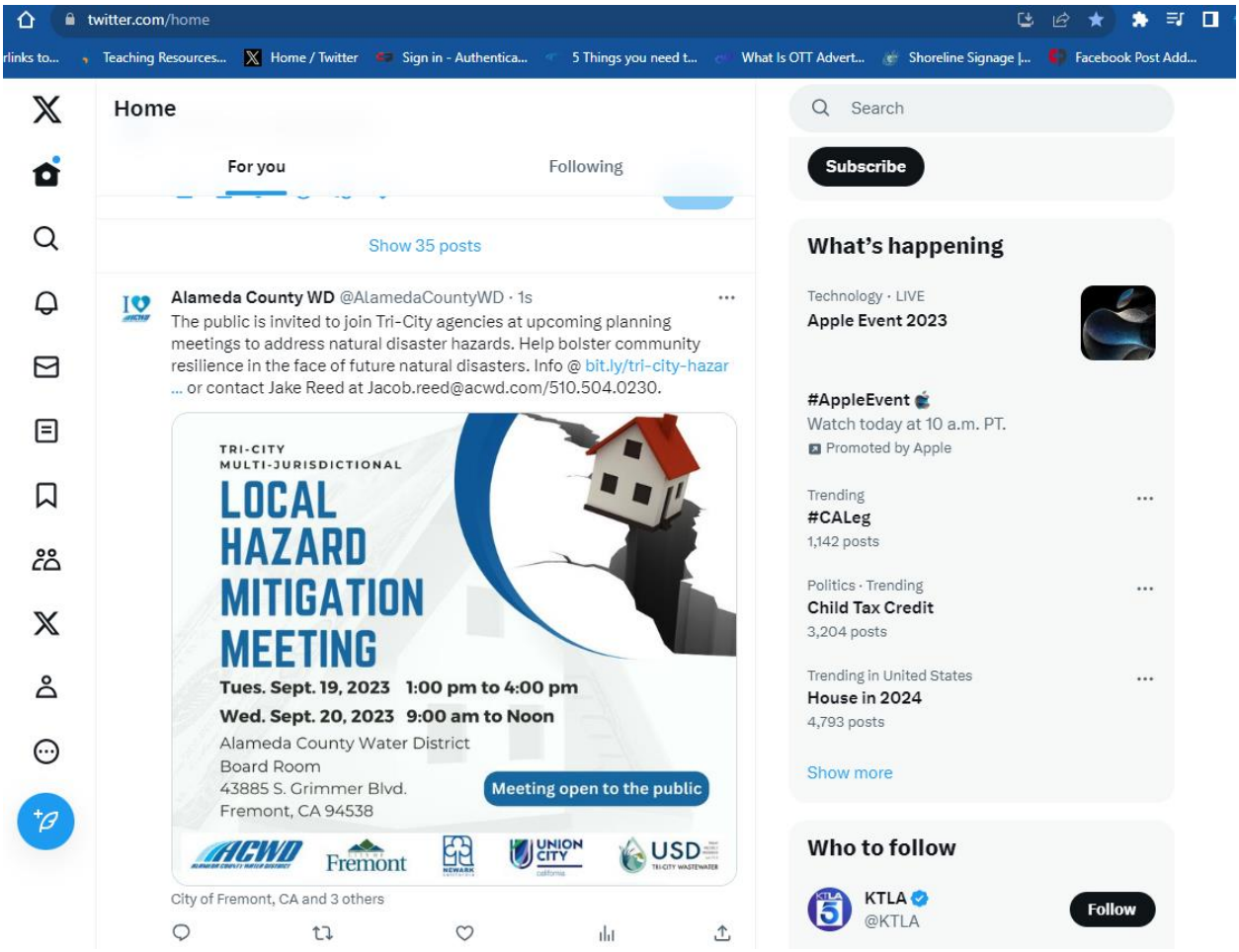
Please remember any work or meeting related to this project that you use 1110-1201-20100-51110. If this code is not on your timesheet, please let me know and I will ask Kalpana & Lety to add this to your timesheet. All hours are in-kind services that will work towards our share for this project cost.

Regards,
Richard

Mitigation Strategy Meetings Invite to Planning Committee, Stakeholders, and Public from the ACWD




instagram.com/p/CxGVqviOciw/
alamedacountywd
Edit profile
View Archive
Ad tools
TRI-CITY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION MEETING
Tues. Sept. 19, 2023 1:00 pm to 4:00 pm
Wed. Sept. 20, 2023 9:00 am to Noon
Alameda County Water District
Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538
Meeting open to the public
alamedacountywd
alamedacountywd The Tri-City Multi-jurisdictional Local Hazard Mitigation Plan is a partnership between ACWD, City of Fremont, City of Newark, City of Union City and the Union Sanitary District to reduce long-term risk and loss to people and property in the Tri-City area, and bolster community resilience in the face of future natural disasters. Please join us for the next two planning committee meetings to assess further risks, review new seismic hazard modeling and develop mitigation strategies. Questions? Please feel free to reach Jake Reed at Jacob.reed@acwd.com and (510)504-0230. Link in bio for more info.
@fremont_ca
17s
View insights
Boost post
Be the first to like this
17 SECONDS AGO
Add a comment...
Post
More


twitter.com/home
Home
For you
Following
Show 35 posts
Alameda County WD @AlamedaCountyWD · 1s
The public is invited to join Tri-City agencies at upcoming planning meetings to address natural disaster hazards. Help bolster community resilience in the face of future natural disasters. Info @ bit.ly/tri-city-hazar ... or contact Jake Reed at Jacob.reed@acwd.com/510.504.0230.
TRI-CITY
MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION MEETING
Tues. Sept. 19, 2023 1:00 pm to 4:00 pm
Wed. Sept. 20, 2023 9:00 am to Noon
Alameda County Water District
Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538
Meeting open to the public
ACWD
Fremont
NEWARK
UNION CITY
USD
City of Fremont, CA and 3 others
Search
Subscribe
What's happening
Technology · LIVE
Apple Event 2023
#AppleEvent
Watch today at 10 a.m. PT.
Promoted by Apple
Trending
#CALeg
1,142 posts
Politics · Trending
Child Tax Credit
3,204 posts
Trending in United States
House in 2024
4,793 posts
Show more
Who to follow
KTLA
@KTLA
Follow

Mitigation Strategy Meetings Invite to Planning Committee, Stakeholders, and Public from the USD

From: Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Sent: Monday, May 15, 2023 2:19 PM
To: Karoline Terrazas; Jose Rodrigues
Cc: Jeanine Foster
Subject: Hazard Mitigation Planning Committee Meeting #2 (Risk Assessment)
When: Thursday, August 17, 2023 1:00 PM-4:00 PM (UTC-08:00) Pacific Time (US & Canada).
Where: Newark Library | 37055 Newark Blvd, Newark, CA 94560

EXTERNAL EMAIL: BE CAREFUL BEFORE CLICKING ANY LINKS OR ATTACHMENTS

Good Afternoon:

In May, we kicked off the **Tri-City Multi-jurisdictional Local Hazard Mitigation Plan** (LHMP) project. That meeting provided an overview of the project and was used to identify a list of natural hazards (e. g., earthquake, wildfire, flood, sea level rise, etc.) to include in the LHMP. Since then, Foster Morrison Consulting has been collecting data and preparing a risk assessment – which will consist of a written profile and analysis of each identified natural hazard, supported by technical, historical, and authoritative data. The risk assessment will become a part of the new LHMP.

Please join us for our second Planning Committee Meeting, as follows. The purpose of this meeting is to share draft risk assessment materials – including mapping, data, and other information – and invite your feedback. Please see the agenda attached.

Thursday, August 17, 2023 (1:00 - 4:00 pm)
Newark Library
37055 Newark Blvd.**
Newark, CA 94560
access to parking and the facility via Civic Terrace Ave.

Questions? Please feel free to reach Alec Tune, Project Manager, at 510.494.4256 or atune@fremont.gov. For more information about the project, visit my.fremont.gov.

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) PLANNING COMMITTEE MEETINGS #3 & #4

Mitigation Strategy

Tuesday September 19, 2023 (1:00 - 4:00 pm)
Wednesday September 20, 2023 (9:00 am - 12:00 pm)
Alameda County Water District - Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538

Planning Committee Meeting #3:

1. Introductions
2. Grant Update
3. LHMP Project Status and Next Steps/Timeline
4. Risk Assessment Status and Hazus
5. Priority Hazards Review
6. Develop Plan Goals and Objectives
7. Introduction to Planning Committee Meeting #4: Mitigation Alternatives/Actions/Projects

Planning Committee Meeting #4:

1. Introductions
2. Review Mitigation Categories and Selection Criteria
3. Brainstorming of Mitigation Alternatives/Actions/Projects by Hazard
4. Prioritization of Mitigation Actions/Projects
5. Questions

Planning Committee Mitigation Strategy Meeting Sign in Sheets – September 19th

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Planning Committee Meeting #3
September 19, 2023 (1:30 – 4:30 pm)
Alameda County Water District | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Megan Rivera	Administrative Assistant	Fremont Fire	mrivera@fremont.gov	(510) 494-4271
RICARDO MARTINEZ	EMERGENCY COORDINATOR	NEWARK/UC CM	RICARDOM@UNIONCITY.org	510 4277772
ALEC TUNE	EMERGENCY SVCS. MGR.	FREMONT FIRE - OES	atune@fremont.gov	(510) 494-4256
JACOB REED	Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 504-0236
Kane Wong	Coordinator	Red Cross	kane.wong3@redcross.org	925-577-7578
Karoline Terrazas	Org Performance Mgr	USD	karoline@unionsanitary.ca.gov	510 4777847
Ruby Wun	Data Coordinator	Fremont GIS	rwun@fremont.gov	510-494-4833
Ron Chan	GIS Specialist	Fremont GIS	rchan@fremont.gov	510-494-4882
Tommy Cho	Principal Civil Engineer	Union City	tommyc@unioncity.org	680-863-0525
HEATHER MOZDEAN	DEPUTY FIRE CHIEF	FREMONT FIRE	HMOZDEAN@FREMONT.GOV	510-468-1329
H. Yamel Medina	CERT volunteer- FRC	Fremont	yamelmedina.LCSW@gmail.com	510-460-0102
KARL FREDSTROM	POLICE SERGEANT	NEWARK POLICE DEPT.	KARL.FREDSTROM@NEWARK.ORG	510-298-7468 CELL
Jeanne Jones	resident	Fremont	jeanne.marie.jones@gmail.com	510-825-0168
Linda Lai	Eng. Tech	ACWD	linda.lai@acwd.com	510-668-4424
Corina Campbell	Business Manager	Fremont fire	Corinac7@gmail.com	(510) [illegible]
Steven Turner	Comm Dev. Dir.	Newark	steventurner@newark.ca.gov	510 578 4203
Daniel Pac	IT Analyst	ACWD	daniel.pac@acwd.org	(510) 668-4285
DOMINGO CANNEDY	SR EMERG SERVICES ALCO OES Coordinator	ACSO - OES	DCASNEDA@ACGOV.org	(510) 504-1938

1

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
John Leon	GIS Manager	City Of Fremont	jleon@fremont.gov	510-494-4831
Tim Hayes	Systems Analyst GIS	City of Fremont	thaye@fremont.gov	510 494-4830
Matthew Farrell	CRO	City of Newark	matthew.farrell@newark.org	510-578-4217
Donna Do	Management Analyst	City of Fremont	DDO@fremont.gov	510-494-4269
Maria Vallejo	IT Director	City of Union City	maria@unioncity.org	510-675-8568
DIANA CANGCO	PRINCIPAL CIVIL ENGINEER	PUBLIC WORKS / CITY OF NEWARK	DIANA.CANGCO@NEWARK.ORG	510-578-4225
Jose Rodrigues	Collection Services Manager	Union Sanitary District	Jose@unionsanitary.ca.gov	510-477-7542
Rocio Vierra	SF Dept City Attorney	Fremont	r.fierro@fremont.org	510-979-478605
Homira Shafaq	Civil Engineer II	Fremont	hshafaq@fremont.org	510-494-
JANA SCALE	Resident	Newark	janasca@aol.com	510-229-7550
JOHN EARTHY.	PREPAREDNESS LEAD	American Red Cross	EARTHYJOHN@GMAIL.COM	(925) 984-6331.
Lincoln Casimere	Emergency Manager	ACFD	Lincoln.Casimere@acgov.org	(510)693-3437
Cliff Feldman	Rec. & SW Manager	Union City	cliff@unioncity.org	(510)675-5466
Dave Persselin	Finance Director	City of Fremont	dpersselin@fremont.gov	510-494-4631
Wayne Miller	citizen, Newark	CCCA	WMcats@aol.com	510-676-1918
Steve Skala	Fremont Env. Sustainability Comm	self	steve_skala@comcast.net	408 621 5849
Jimmy Chen	Facilities Manager	City of Fremont	JiChen@fremont.gov	510-494-4715
Kurt Arends	Director of O&M	ACWD	Kurt.arends@acwd.com	510 668 6501
Brenna Howell	Howell Consulting	CEO	brenna@brennahowell.com	916-202-2635
Caroline Abellar		A CWD	caroline.abellar@acwd.com	

2

Planning Committee Mitigation Strategy Meeting Sign in Sheets – September 20th

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Planning Committee Meeting #4
September 20, 2023 (9:00 – 12:00 pm)
Alameda County Water District | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Megan Rivera	Admin Assistant	Fremont Fire	mrivera@fremont.gov	(510) 494-4217
Daniel Peat	IT/GIS Analyst	ACWD	daniel.peat@acwd.com	(510) 668-4285
Tim Hayes	System Analyst GIS	City of Fremont IT	thayes@fremont.gov	510 494-4830
Brenna Howell	Howell Consulting	CEO	brenna@brennahowell.com	916 202-2435
Liz Ames	BART Director/ Ret. Facility	BART / Tri-City Ecology Center	lizbart@gmail.com	510 371 1311
Ricardo Martinez	UC/Newark Emergency Coor	CM - UC/Newark	RICARDOM@unioncity.org	510-427-7772
Kurt Arends	Div. of O&M	ACWD	Kurt.Arends@acwd.com	510-668-6501
Linda Lai	Eng. Tech.	ACWD	lindalai@acwd.com	510-668-4427
Vanessa Ware	Econ Dev Coordinator	Fremont	Vware@fremont.gov	510-299-7305
Heather Mozdean	Deputy Fire Chief	Fremont Fire	HMOZDEAN@FREMONT.GOV	510-468-1329
John Leon	GIS Manager	City of Fremont	JLeon@Fremont.gov	510-494-4831
Matthew Farrell	CBO	City of Newark	Matthew.Farrell@newark.org	510-578-4217
Soren Fajeau	Public Works Director	City of Newark	soren.fajeau@newark.org	510-578-4286
Noe Veloso	Asst. City Engr	City of Fremont	NVELOSO@FREMONT.GOV	510-494-4774
Kane Wong	Coordinator	Red Cross	kane.wong@redcross.org	925-577-7528
Peter Fong	IT Analyst	City of Newark	peter.fong@newark.org	
Gloria del Rosario	Accounting Manager	Newark	gloria.delrosario@newark.org	510-578-4337
Coleman Frost	Senior Planner	City of UC	Cole@envisionea.org	

1

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Ron Chan	GIS Specialist	City of Fremont GIS	rchan@fremont.gov	510-494-4832
Ruby Wun	Data Coordinator	City of Fremont GIS	rwun@fremont.gov	510-494-4833
Joe C Pullen	Planning Manager	C.O.F.	jpullen@fremont.gov	(510) 494-4486
Karoline Terrazas	Org Perf mgr	Union Sanitary District	karolinet@unionsanitary.ca.gov	510 477 7547
Jeanne Jones	resident, Fremont	—	jeanne.marie.jones@gmail.com	510-825-0168
Lenka Hovorka	Asst. City Manager	City of Newark	lenkah@newark.org	510-578-7640
Steven Turner	CD Director	Newark	steveturner@newark.org	510 578 4208
Jose Rodrigues	Collection Services Manager	USD	Jose@unionsanitary.ca.gov	510-477-7542
TRUEN TRAN	Engineer III	Union City	truent@unioncity.org	510-675-5311
PAUL McCORMICK	Police Lieutenant	Fremont PD	Pmccormick@fremont.gov	510 790 6779
ALEC TUNE	Emergency Svcs. Mgr.	Fremont Fire/OES	atune@fremont.gov	(510) 494 4256
Lincoln Casimere	Emergency Prep. Mgr	ACFD	Lincoln.Casimere@acgov.org	(510) 693-3437
David Persselin	Finance Director	City of Fremont	dpersselin@fremont.gov	510-799-4631
Rob Sherry	CAO Fremont	Dep City Attorney	rsherry@fremont.gov	—
Uyen Ma	Sustainability Analyst	Union City	uyenm@unioncity.org	510-459-5083
Jacob Reed	Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 384-6238
Caroline Abellar		ACWD	caroline.abellar@acwd.com	

2

Meeting for CRS Activity 610 and Planning Committee (CRS Steering Committee) LHMP Development (CRS Activity 510)

CRS Meeting Activity 610 Invite

The CRS Meeting invite was done via phone calls and internal emails. As such, there was no meeting invite record digitally.

CRS Meeting Activity 610 Agenda

AGENDA

TRI-CITY MULTI-JURISDICTIONAL
LOCAL HAZARD MITIGATION PLAN (LHMP)
CRS Activity 610 Meeting

Tuesday October 24, 2023
3:30 - 5:00 pm
Fremont Fire Department Administration – Large Fire Classroom
3300 Capitol Avenue, Building "A"
Fremont, CA 94538

---

1. Introductions
2. Community Rating System (CRS) Overview
3. CRS Activity 600 Series
4. Activity 610 – Flood Warning and Response
5. Summary/Recommendations

CRS Meeting Activity 610 Sign in Sheet

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Flood Planning: CRS Activity 610
October 24, 2023 (3:30 – 5:00 pm)
Large Fire Classroom | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
RAMES MANALO	ASST. ENGINEER	ACFCWA/ACFCWCD	ramesc@acpwa.org	(510) 670-6470
DAN CIANCIARULO	SENIOR LANDSCAPE INSPECTOR	CITY OF NEWARK	dciancia ciarulo@newark.org	510-508-1291
Helen Gordon	Sr. Admin Supp Specialist	City of Newark, PW/Fire	Helen.gordon@newark.org	510-578-4452
ALEC TUNE	EMERGENCY SVCS. MGR.	FREMONT FIRE DEPT	atune@fremont.gov	(510) 494-4256 ~~360-5248~~
FAROOQ, AZIM	CITY ENGINEER	PW/UNION CITY	FAROOQA@UNIONCITY.ORG	(510) 675-5368
RICARDO MARTINEZ	EMERGENCY COORD.	CM/Newark & Union City	RICARDOM@unioncity.org	(510)927-7772
HOMIRA SHAFIQ	Engineer	PW/CITY OF FREMONT	hshafiq@fremont.gov	
Jeanine Foster	Project Manager	Foster Morrison	jeanine.foster@fostermorrison.com	303 717-7171
Joel Pullen	Planning Manager	COF	JPullen@fremont.gov	(510) 304-5204
DIANA CANGRO	PRINCIPAL CIVIL ENG	PW CITY OF NEWARK	DIANA.CANGRO@NEWARK.ORG	(510) 578-4225
Matthew Fiske	Chief Building Official	PW City of Newark	matthew.fiske@newarkca.gov	510-578-4217

CRS Meeting Activity 510 Invite

From: Alec Tune <atune@fremont.gov>
Sent: Tuesday, October 17, 2023 10:18 AM
Cc: Jeanine Foster <jeanine.foster@fostermorrison.com>; Rich Martinez <RichM@newark.org>; Ricardo Martinez <RicardoM@UnionCity.Org>; Joel Pullen <JPullen@fremont.gov>; Homira Shafaq <HShafaq@fremont.gov>; Megan Rivera <mrivera@fremont.gov>
Subject: Community Rating System (Flood Risk) Steering Committee

Good Afternoon:

Thank you for your interest in the Tri-City Local Hazard Mitigation Plan (LHMP) project's National Flood Insurance Program (NFIP) – Community Rating System (CRS) Steering Committee. The Committee consists of public and private stakeholders, including city officials, residents, and businesses. As a member of the Committee, your participation will help inform our strategy for reducing flood risk to the community, and will contribute to the flood planning element of the new Tri-City LHMP. Additional information regarding the Committee is attached.

You are cordially invited to attend our **CRS Steering Committee Meeting** on **Tuesday, October 24 (6:00 – 7:30 pm)** at the Fremont Fire Department offices.

Fremont Fire Department – Administration
3300 Capitol Avenue, Building "A"
Fremont, CA 94538

*** Parking is available to the rear of City Hall Building A (on the side of the building facing away from Capitol Avenue, i. e., the southeast side of the building). Enter through the rear doors to the building. Signs will be posted.***

Please RSVP to Megan Rivera at mrivera@fremont.gov or 510.494.4217. Please feel free to reach me or Megan with any questions.

CRS Steering Committee members are also invited to attend our final Tri-City LHMP Planning Committee Meeting on January 24, 2024 (9:00 – 11:30 am), to be held in Fremont. Details to follow.

AGENDA

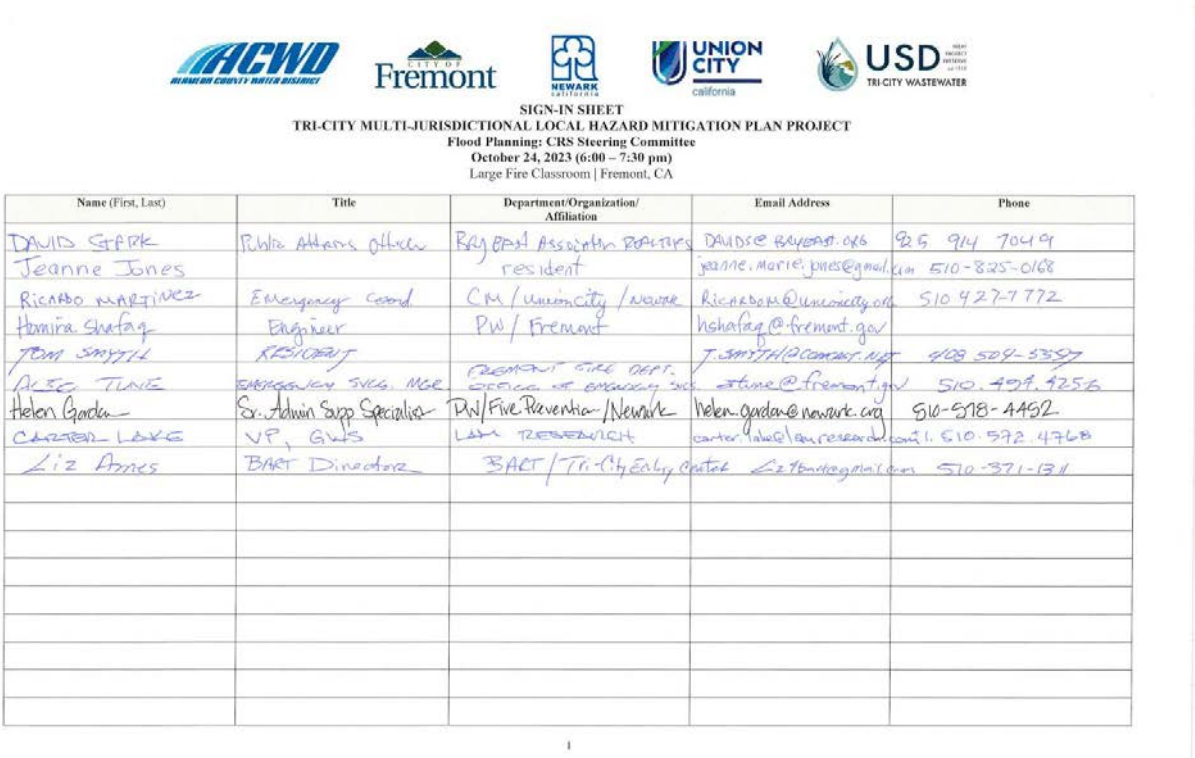
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP)
CRS Steering Committee Meeting

Tuesday October 24, 2023
6:00 - 7:30 pm
Fremont Fire Department Administration – Large Fire Classroom
3300 Capitol Avenue, Building "A"
Fremont, CA 94538

---

1. Introductions
2. Status of the LHMP Planning Process
3. National Flood Insurance Program (NFIP) and Community Rating System (CRS) Overview
4. Open Discussion and Input on the Flood Hazard in the Tri-City Planning Area
5. Open Discussion and Input on possible Flood Mitigation Actions and Projects
6. Next Steps

CRS Meeting Activity 510 Sign in Sheet



SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Flood Planning: CRS Steering Committee
October 24, 2023 (6:00 – 7:30 pm)
Large Fire Classroom | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
DAVID GRAFF	Public Affairs officer	Bay East Association Realtors	DAVIDG@BAYEAST.ORG	925 914 7049
Jeanne Jones		resident	jeanne.marie.jones@gmail.com	510-825-0168
RICARDO MARTINEZ	Emergency Coord	CM / Unioncity / Newark	RICARDOM@unioncity.org	510 427-7772
Hamira Shafaq	Engineer	PW / Fremont	hshafaq@fremont.gov	
TOM SMYTH	RESIDENT		T.SMYTH10@COMCAST.NET	408 504-5397
ALEC TUNE	EMERGENCY SVCS. MGR.	FREMONT FIRE DEPT. OFFICE OF EMERGENCY SVCS.	atune@fremont.gov	510.494.4256
Helen Gordon	Sr. Admin Supp Specialist	PW/Fire Prevention/Newark	Helen.gordon@newark.org	510-578-4452
CARTER LAKE	VP, GIS	LAM RESEARCH	carter.lake@lamresearch.com	1.510.572.4768
Liz Ames	BART Director	BART / Tri-City Ealy Center	Liztamesgmail.com	510-371-1311

Final Planning Committee Meeting

Final Meeting Invite to Planning Committee, Stakeholders, and Public

The project leads for the Cities of Newark and Union City, and ACWD provided direct invitations to their staff as appropriate. Written invitations not available to include. Also, the outreach efforts conducted for the final public and planning committee meetings were done through websites, a newspaper advertisement, and through social media efforts that were used to inform and invite all Planning Committee and the public to attend either or both of these final LHMP meetings.

Final Meeting Invite from City of Fremont

From: Megan Rivera <mrivera@fremont.gov>
Sent: Wednesday, May 31, 2023 11:16 AM
To: Megan Rivera; Alec Tune; Jeanine Foster; Jacob Reed; Ricardo Martinez; Rich Martinez; Karoline Terrazas
Subject: Planning Committee Meeting #5
When: Thursday, January 25, 2024 9:00 AM-11:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: Downtown Event Center: Capitol Room | 3500 Capitol Ave. Fremont, CA 94538

Planning Committee Meeting #5

Thursday, January 25, 2024 (9:00 - 11:30 am)

Downtown Event Center

Capitol Room

3500 Capitol Ave.

Fremont, CA 94538

Final Meeting Invite from USD

From: Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Sent: Monday, May 15, 2023 2:20 PM
To: Karoline Terrazas; Jose Rodrigues
Cc: Jeanine Foster
Subject: Hazard Mitigation Planning Committee Meeting #5 (Draft Review- Final)
When: Thursday, January 25, 2024 9:00 AM-11:30 AM (UTC-08:00) Pacific Time (US & Canada).
Where: Downtown Event Center: Capitol Room | 3500 Capitol Ave. Fremont, CA 94538

Planning Committee Meeting #5

Thursday, January 25, 2024 (9:00 - 11:30 am)

Downtown Event Center

Capitol Room

3500 Capitol Ave.

Fremont, CA 94538

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) FINAL PLANNING COMMITTEE MEETING #5

Thursday January 25, 2024
9:00 - 11:30 pm
Downtown Event Center, Capitol Room
3500 Capitol Ave.
Fremont, CA 94538

---

1. Introductions
2. Status of the LHMP Planning Process
3. Addressing Public Comments
4. Final Planning Committee Input/Outstanding Items
5. Summary of Changes in Tri-City Planning Area Hazard Vulnerabilities/ Mitigation Priorities
6. Final Steps

Planning Committee Final Meeting Sign in Sheet

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Planning Committee Meeting #5
January 25, 2024 (9:00 – 11:30 am)
Downtown Event Center | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Megan Rivera	Admin Assistant	Fire	mrivera@fremont.gov	510-494-4217
DEEPA VENKATARAM	~~Staff~~ Exec. Asst	Fire	dvenkataram@fremont.gov	510.494.4283
Ed Chow	MAPPING SPECIALIST	ITS	echow@fremont.gov	510-494-4442
Kaitlyn Terrazas	OPM	USD	kaitlynt@unionsanitary.ca.gov	510-477-7547
Greg Miller	DFM	FFD	gmiller@Fremont.gov	510-494-4202
Carin High		CCCR	cccrrefuge@gmail.com	510-378-2120
Tim Hayes	Sys Analyst GIS	Fremont ITS GIS	thayes@fremont.gov	510-434-4930
Ron Chan	GIS specialist	ITS	rchan@fremont.gov	510-494-4832
DAVID SPARK	Public Affairs Officer	BAYEAST ASSN. REALTORS	DAVID5@BAYEAST.ORG	925 914 7049
Daniel Burk	GIS Analyst	ACWD	daniel.burk@acwd.com	(510) 668-4265
Francisca Dufour	ACFD Aide	ACFD	francisca.d	
Homira Shafaq	~~COF~~ Engineer	COF	hshafaq@fremont.gov	510-494-4780
David Persselin	Finance Director	Finance Fremont	dpersselin@fremont.gov	510-494-4631
Joel Pullen	Planning Manager	COF	jpullen@fremont.gov	(510) 494-4436
RAMSES MANALO	~~ACCT~~ BOOK	ACPWA	ramsesc@acpwa.org	(510) 670-6470
Jose Rodrigues	Collection Services Manager	USD	Joser@unionsanitary.ca.gov	(510) 477-7542
Glenna del Rosario	Accounting Mgr	City of Newark	glenn.delrosario@newark.org	(510) 331-9003
Jeanne Jones	resident		jeanne.marie.jones@gmail.com	

1

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Moeller, Caroline	Emergency & Security Svc Planner	ACWD	caroline.moeller@acwd.com	510-513-3492
Dwight Williams	Safety & Security Supv.	Washington Hosp.	dwight.williams@whhs.com	510 818-7216
Ruby Wun	Data Coordinator	City of Fremont	rwun@fremont.gov	510-494-4853
John Leon	GIS Manager	" " "	jleon@fremont.gov	510-494-4831
FAROOK AZIM	CITY ENGINEER	UNION CITY	FAROOK@unioncity.org	(510)-675-5368
Rishika Rawat	Resilience Fellow	Greenbelt Alliance	rrawat@greenbelt.org	408-507-4767
Lenka Hovorka	Asst. City Mgr.	Newark	lenkah@newark.org	510-578-7640
LANCE BREDE	DEPUTY CHIEF OF POLICE	FREMONT	LBREDE@FREMONT.GOV	(510) 790 6840
~~Alex~~ Tine	~~Emergency Svcs. Mgr.~~	FREMONT FIRE DEP	atine@fremont.gov	(510)494-4256
Carmela Campbell	Economic/Community Dev. Director	UNION CITY	Carmelac@unioncity.org	(510) 675-5316
Karen Grunbeck	Administrator	Fremont	KGrunbeck@fremont.gov	510 574-2007
Wayne Miller	CCCR Board Member	CCCR Board	WMcatfan@aol.com	510-676-1818
NOE VELOSO	ASST. CITY ENGR	FREMONT PW	NVELOSO@FREMONT.GOV	510-494-4774
Teshia Charles Ellington	Business Manager	Cal School Dept-Fremont	tcharles-ellington@csda-ca.org	510 673 3386
Donna Do	Mgmt Analyst	Fremont	DDo@fremont.gov	510-494-4269
Zaruda Diaz	Fire Chief	Fremont	zdiaz@fremont.gov	(510) 494-4213
HEATHER MOZDEAN	DEPUTY FIRE CHIEF	FREMONT	HMOZDEAN@FREMONT.GOV	510-468-1327

2

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Lincoln Casimere	Emergency Manager	Alameda County Fire	Lincoln.Casimere@acgov.org	(510) 693-7437
Jacob Reed	Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 584-8234
Sylvia Yeh	E.D	FCSN	sylvia.yeh@fcsn1996.org	510) 739-6900

3

A.2 Tri-City Step 2: Involve the Public

Multiple efforts were made to engage the public during the creation of this plan, including direct outreach efforts such as phone calls, emails, direct mailings, and face-to-face meetings, in addition to the broader outreach efforts such as e-newsletters, website postings, newspaper advertisements and articles, and leveraging other community events to communicate and invite participation in the LHMP Update project. A key element of public participation is including members of the public and other public-type stakeholders on the LHMP Planning Committee.

a) List of LHMP Planning Committee Members

The LHMP Planning Committee, comprising key city, special district, and other government and stakeholder representatives and the public, developed the plan with leadership from the five participating jurisdictions and facilitation by Foster Morrison. The non-local government members of the Steering Committee (citizens and other outside stakeholders) provided representation on the Planning Committee.

The list of Planning Committee members is shown in Section A.1.c of this Appendix.

b) and c) Public Meetings

In addition to an advertisement and newspaper article for public participation, notices of meetings were sent directly to all persons on the Planning Committee invite list and also to other agency and key stakeholders with an interest in the Tri-City Planning Area. The majority of these people reside in Fremont, Newark, Union City or in surrounding communities. The formal public meetings for this project are summarized in the following table. Outreach backup and other information associated with the public meetings follow the table.

Meeting Type	Meeting Topic	Meeting Date	Meeting Locations
Early Public Kickoff Meeting #1	1) Intro to DMA, CRS and mitigation planning 2) 2024 LHMP Update Process	May23, 2023	George M. Silliman, Community Activity Center, Newark
Early Public Kickoff Meeting #1	1) Intro to DMA, CRS and mitigation planning 2) 2024 LHMP Update Process	July 13, 2023	Age Well Center at Lake Elizabeth, Fremont
Risk Assessment Public Meeting	1) Overview of the Risk Assessment Data and process	August 17, 2023	Kennedy Youth Center, Union City
Final Public Meeting	1)Presentation of Draft LHMP and solicitation of public and stakeholder comments	January 24, 2024	Fremont Main Library, Fremont

General Public Outreach Information

Help Reduce Disaster Losses in Our Community!
We need your participation in the
Tri-City Local Hazard Mitigation Plan

The Cities of Fremont, Newark, and Union City and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The purpose of an LHMP is to assess community risk and vulnerability to natural hazards, implement actions to reduce future losses, and maintain eligibility for federal mitigation grant funding in accordance with the Disaster Mitigation Act of 2000.

What is Hazard Mitigation?

Hazard mitigation means any sustained action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.

What are Natural Hazards?

Natural hazards are events that occur in nature that threaten the safety of human lives and property. Some examples include earthquakes, severe storms, floods, wildfires, and tsunami.

Why is Natural Hazard Mitigation Important?

Most people who live or work in the Tri-City area have been impacted by natural hazards in one way or another. Rising costs associated with disaster response and recovery have focused the attention of local, state, and federal government officials on addressing natural hazards before they occur. Hazard events – such as the torrential rains and flooding which occurred in late December 2022 and January 2023, and high winds in March 2023 – cannot be prevented. However, planning for natural hazards and the implementation of mitigation measures to reduce risk can substantially reduce community impacts. Example mitigation measures include a seismic upgrade to a public safety building, strengthening a levee, or a policy to require clearing of vegetation in wildfire prone areas. Natural hazard mitigation measures can significantly reduce loss of life, injuries, property damage, emergency response and recovery costs, and the overall economic and social impact that natural disasters pose to our community.

Hazard Mitigation Plan and Plan Update Process

Utilizing a Federal Emergency Management Agency (FEMA) grant, the three cities and two districts are developing a new Tri-City LHMP that will meet all requirements to update the City of Fremont's 2016 LHMP and the 2017 Union City/Newark Multi-jurisdictional LHMP. A Planning Committee comprised of representatives from the Cities, Districts, County; neighboring jurisdictions; federal, state, and local agency stakeholders; and the public will guide development of the new plan.

The plan will address the natural hazards to which the Tri-City area is most vulnerable and will assess the likely impacts these hazards pose to people and property in the Tri-City area. Additionally, the plan will also establish goals and prioritize potential projects to reduce natural hazard risk.

Another benefit of mitigation planning is that it can reduce the cost of flood insurance to residents and businesses. The Tri-City LHMP will include a framework for improving floodplain management and reducing flood insurance premiums under FEMA's National Flood Insurance Program's (NFIP).

National Flood Insurance Program's Community Rating System

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from community actions that meet the goals of the CRS Program. The reduction in flood insurance premium rates is provided according to a community's CRS classification. The City of Fremont is currently a CRS Class 7, which provides for a 15 percent discount on flood insurance to those located within the City's jurisdiction. The Cities of Newark and Union City are currently evaluating joining the CRS.

Public Engagement

Members of the community have a very important role in this process. Several Planning Committee and public meetings will be held over the next ten months. A draft of the Tri-City LHMP will be available by early 2024 for review and comment by the public and all interested stakeholders. Drafts will be posted at My.Fremont.gov and will be provided in select public locations, to be announced. Public meetings on the Draft Plan and a final Planning Committee meeting will also occur in early 2024. All interested stakeholders and members of the public are encouraged to attend public meetings – as well as Planning Committee meetings, which are open to the public.

For more information on this project and how you can get involved, visit My.Fremont.gov or contact:

Fremont	Newark	Union City
Alec Tune Emergency Services Manager Fremont Fire Department (510) 494-4256 atune@fremont.gov	Ricardo Martinez Emergency Coordinator City of Newark (510) 578-4806 RichM@newark.org	Ricardo Martinez Emergency Services Coordinator City of Union City (510) 675-5363 RicardoM@UnionCity.org

Alameda County Water District	Union Sanitary District
Jacob Reed O&M-Emergency and Security Services Alameda County Water District (510) 504-0230 jacob.reed@acwd.com	Karoline Terrazas Organizational Performance Manager Union Sanitary District (510) 477-7547 karolinet@unionsanitary.ca.gov

MyFremont.gov

Visit my.fremont.gov or scan the QR code below

Public Outreach Survey

Visit my.fremont.gov/tri-city-hazard-plan/survey_tools/tri-city-local-hazard-survey or scan the QR code to the left

Early Public Kickoff Meeting Outreach (Paid Ad – 5/16/2023 Tri-City Voice)



May 16, 2023 — What's Happening's Tri-City Voice — Page 31

continued from page 1

Celebrating Burgers and Brews

Food trucks will feature both classic burgers and multicultural twists. Try bites from 3 Brother's Kitchen (Southeast Asian Burgers), Jollof Kitchen (Authentic Nigerian Burgers), Kay's Creations (Lumpia Stuffed with Hamburger), Rincon Del Cielo Taqueria (Mexican Fusion Burgers), Yeshaan's Grub (Pakistani Halal Burgers), and more.

Treats and extras will include Bruster's Ice Cream, Milk & Honey Boba Tea, macaroons, and kettle corn.

The Deadlies, Deep Blue Jam, and Evan Thomas Band will be providing live music at the main stage throughout the event.

You can purchase tasting tickets online in advance and redeem them at the event for a four-ounce tasting glass and wristband. The basic tasting package "More Beer Please" includes unlimited pours of beer only for $45, while for $55 you can purchase "More Beer Please" and "Lift My Spirits" wristbands for unlimited beer and spirits pours. You will need a wristband to for every pour.

Wristband prices will go up $5 if you choose to purchase them at the event. Food must be purchased separately.

Burger and Brew Fest
Saturday, May 20
11 a.m. – 5 p.m.
Burger Throwdown: 12 noon - 1 p.m.
Judging: 1 p.m. - 2 p.m.
Downtown Event Center Plaza
3500 Capitol Ave., Fremont
& Capitol Ave. from Liberty St. to State St.
(510) 795 - 2244
www.burgeraudbrewfest.com
Tickets: $45 - $60

SUNDAY AFTERNOON
The 32nd Season
ARTS SERIES

The League of Volunteers and
The Newark Arts Council
Present

Broceliande
Celtic & Early Music Ensemble

Broceliande plays Celtic music from the British isles and the Medieval and Renaissance music of the European courts and countrysides, with an emphasis on music inspired by or traditionally performed during each of the four seasons. Featuring stellar vocal and instrumental harmonies, their entrancing sound is built on the interweaving of up to 3-part vocals with the lyrical music of the Celtic harp, octave mandolin, cello, 12-string guitar, recorders, flute, gamba, whistle, percussion, and more!

Their seasonal repertoire includes original arrangements of traditional and Early music and ranges in feel from upbeat Irish dances to beautiful ballads to exciting a capella madrigals. Their evocative lyrics, including some in Medieval French and Portuguese, speak of love and longing, quests and jewels, magic and transformation.

Sunday, May 21, 2023 - 2:00PM
Suggested Donation: Adults - $10, Seniors & Students - $7
COMPLIMENTARY INTERMISSION REFRESHMENTS
NEWARK JUNIOR HIGH MULTIPURPOSE AUDITORIUM
4201 LAFAYETTE AVE., NEWARK, CA 94560
For information call: (510) 793-5683
Visit our website at www.lov.org

ACWD · Fremont · Alameda County Flood Control · Union City · USD

Tri-City Local Hazard Mitigation Plan
HELP YOUR COMMUNITY BE HAZARD-READY!

The Cities of Fremont, Newark, Union City, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP). Floods, earthquakes, wildfires, and severe weather are just a few of the hazards to which the Tri-City area is vulnerable. While natural hazards such as these cannot be eliminated, we can reduce the risk they pose to our community. An LHMP is a foundational plan to reduce risk associated with natural disasters and allows each participating public agency to apply for certain Federal Emergency Management Agency (FEMA) grants to reduce such risk. The new LHMP will also provide an important framework for each cities' floodplain management program, which may result in lower flood insurance premiums for area residents and businesses under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS).

You are invited. We encourage the public to attend and participate in our upcoming meetings. Informational Public Meetings will explain the LHMP development process, the benefits of cities' participation in the CRS program, and how you can become involved. In addition, Planning Committee Meetings among participating agency personnel and other stakeholders – to develop the plan – are open to the public. Please select the time and location that works best for you!

International Public Meeting (Offering #1)
May 23, 2023 (Tuesday) 6:00 – 7:30
George M. Silliman Community Activity Center – Community Meeting Room
5800 Mowry Ave.
Newark, CA 94560

International Public Meeting (Offering #2)
July 13, 2023 (Thursday) 6:00 – 7:30
Age Well Center at Lake Elizabeth
40086 Paseo Padre Pkwy.
Fremont, CA 94538

n on this project, and a complete schedule of meetings, please visit:

32

Early Public Kickoff Meeting Press Release

Press Release: Tri-City Agencies Working Together on New Local Hazard Mitigation Plan

City of Fremont, California sent this bulletin at 05/19/2023 12:05 PM PDT

View as a webpage / Share

Fremont Press Release

FOR IMMEDIATE RELEASE

Tri-City Agencies Working Together on New Local Hazard Mitigation Plan

Get Involved and Help Your Community be Hazard-Ready!

FREMONT, Calif. - The Cities of Fremont, Newark, and Union City, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The new Tri-City LHMP will meet all requirements to update the City of Fremont's 2016 LHMP and the 2017 Union City/Newark Multi-jurisdictional LHMP. Floods, earthquakes, wildfires, and severe weather are just a few of the hazards to which the Tri-City area is vulnerable. While natural hazards such as these cannot be prevented, we can reduce the risk they pose to our community. An LHMP is a foundational plan to reduce community risk associated with natural disasters – assessing and analyzing risk and formulating and prioritizing long-term strategies to reduce risk. An LHMP also allows each participating public agency to apply for certain Federal Emergency Management Agency (FEMA) grants to reduce such risk. The new LHMP will also provide an important framework for each cities' floodplain management program, which may result in lower flood insurance premiums for area residents and

businesses under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS).

You are invited. We encourage the public to attend and participate in our upcoming meetings. Informational Public Meetings will explain the LHMP development process, the benefits of cities' participation in the CRS program, and how you can become involved. Please select the time and location that works best for you!

Upcoming Public Meetings

Informational Public Meeting (Offering #1)
May 23, 2023 (Tuesday) 6:00 – 7:30 p.m.
George M. Silliman Community Activity Center – Community Meeting Room
6800 Mowry Ave.
Newark, CA 94560

Informational Public Meeting (Offering #2)
July 13, 2023 (Thursday) 6:00 – 7:30 p.m.
Age Well Center at Lake Elizabeth
40086 Paseo Padre Pkwy.
Fremont, CA 94538

In addition, Planning Committee Meetings among participating agency personnel and other stakeholders—to develop the plan—are all open to the public.

Planning Committee Meeting #1 (Project Kickoff)
May 23, 2023 (Tuesday) 1:30 – 4:00 p.m.
Downtown Event Center
3500 Capitol Ave.
Fremont, CA 94538

The Cities of Fremont, Newark, and Union City are seeking interested community representatives to participate on a special floodplain management Steering Committee—and to regularly attend Planning Committee Meetings —over the course of the project, through early 2024. If you are a Fremont, Newark, or Union City resident and interested in being appointed to the Steering Committee, please contact the following:

Fremont
Alec Tune
Emergency Services Manager
Fremont Fire Department
510-494-4256
atune@fremont.gov

Newark
Richard Martinez
Emergency Coordinator
City of Newark
510-578-4806
RichM@newark.org

Union City
Richard Martinez
Emergency Services Coordinator
City of Union City
510-675-5363
RicardoM@UnionCity.org

###

MEDIA CONTACT :

Geneva Bosques

Early Public Kickoff Meeting Outreach (Fremont Connection E-Newsletter)



Tri-City Local Hazard Mitigation Plan Meeting on July 13

On May 23, the City of Fremont – in partnership with the Cities of Newark and Union City, the Alameda County Water District, and the Union Sanitary District – kicked off the Tri-City Multi-jurisdictional Local Hazard Mitigation Plan project. The purpose of the plan is to reduce the long-term risk that natural disasters pose to people and property in Fremont, and neighboring communities, while improving resilience when disaster strikes. The plan will assess the risk of various hazards—including earthquake, wildfires, severe weather and climate change, flood, tsunami, and landslides—and then propose strategies to reduce such risk. Communities with a FEMA-approved Hazard Mitigation Plan are eligible to apply for pre- and post-disaster mitigation grant funding.

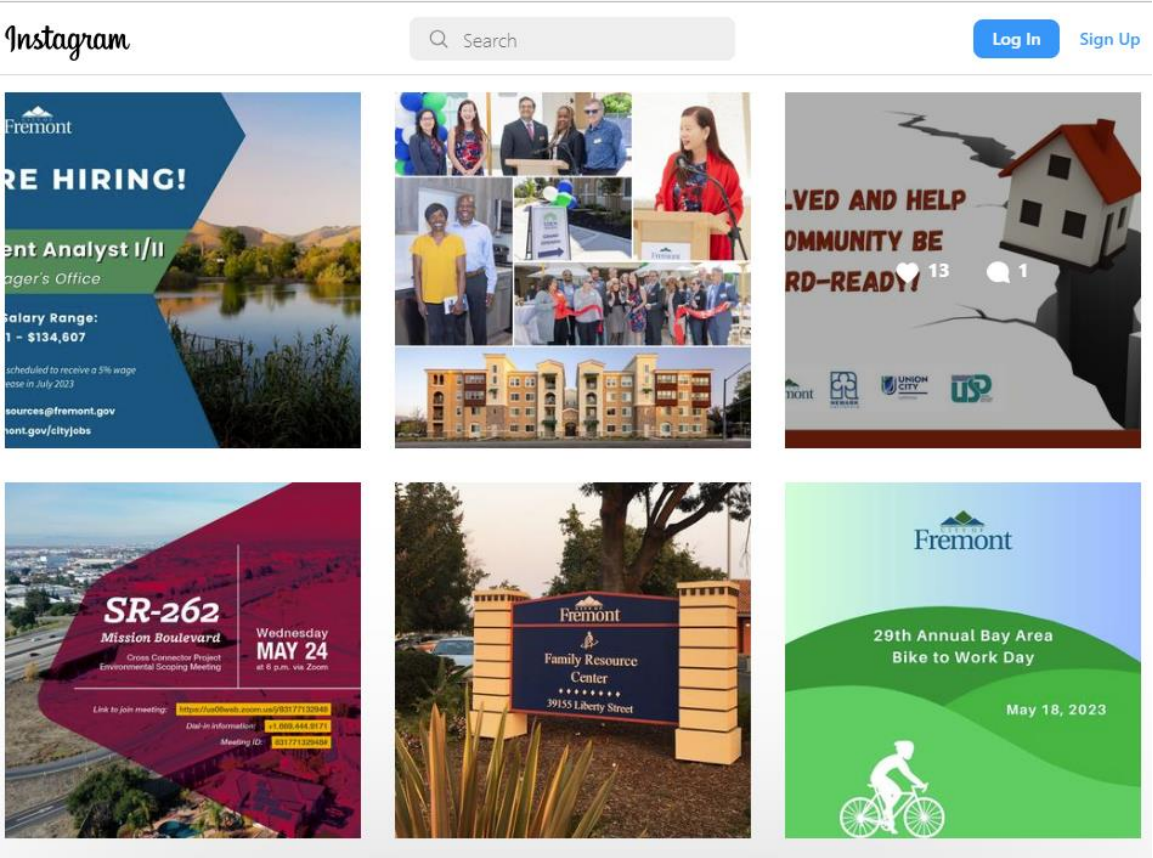
Get involved! Join us for an informational public meeting on July 13, from 6:00 pm to 7:30 pm at the Age Well Center at Lake Elizabeth, 40086 Paseo Padre Pkwy. in Fremont.

Learn More

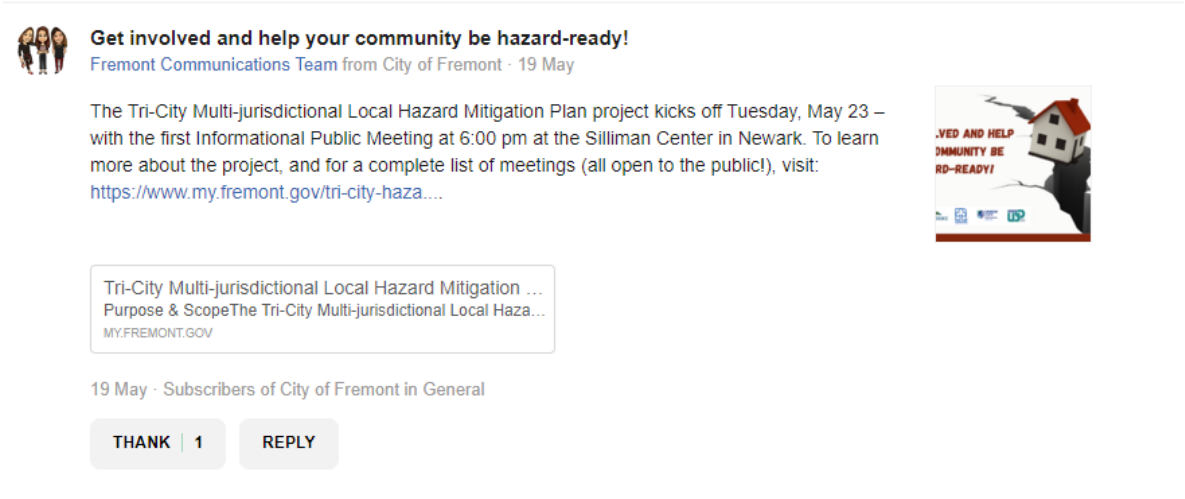
Early Public Kickoff Meeting Outreach (Facebook from 5/19/2023)



Early Public Kickoff Meeting Outreach (Fremont Instagram 5/19/2023)



Early Public Kickoff Meeting Outreach (LinkedIn 5/19/2023)



Early Public Kickoff Meeting Outreach (Nextdoor 5/19/2023)



Early Public Kickoff Meeting Outreach (Twitter 5/19/2023)

City of Fremont, CA @Fremont_CA · May 19

Get involved and help your community be hazard-ready! The Tri-City Multi-jurisdictional Local Hazard Mitigation Plan project kicks off Tues, 5/23, w/ first Informational Public Meeting at 6PM at Silliman Center in Newark. Project and meetings info here: my.fremont.gov/tri-city-hazar...



2 2 2,127

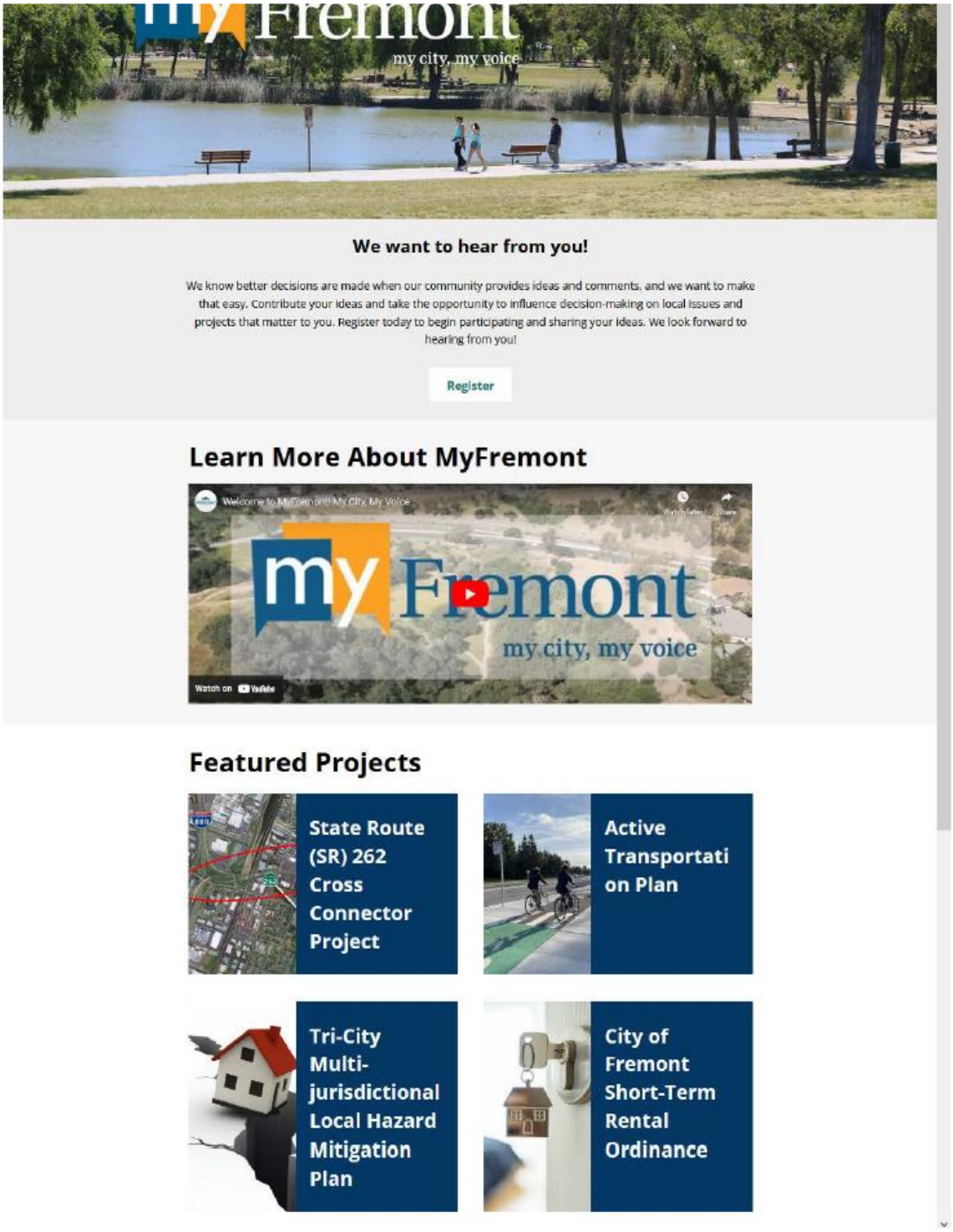
City of Fremont, CA @Fremont_CA · May 19

Press Release: Tri-City Agencies Working Together on New Local Hazard Mitigation Plan. Get involved and help your community be hazard-ready!

content.govdelivery.com
Press Release: Tri-City Agencies Working Together on New Local Hazard Mitigation Plan

533

Early Public Kickoff Meeting Outreach (My Fremont)



Early Public Kickoff Meeting Agenda

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) INFORMATIONAL PUBLIC MEETING (NEWARK)

TUESDAY, MAY 23, 2023
George M. Silliman Community Activity Center
Community Meeting Room
6800 Mowry Avenue
Newark, CA 94560

---

1. Introductions
2. Hazard Mitigation & the Disaster Mitigation Act Planning Requirements
3. The National Flood Insurance Program (NFIP) Community Rating System (CRS)
4. Schedule
5. Questions and Answers

Early Public Kickoff Meetings –Sign-in Sheets: May 23

Name (First, Last)	Department/Organization/ Affiliation/Resident	Email Address (Optional)	Phone (Optional)
Karoline Terrazas	USD	karoline+t@unitysanday.ca.gov	—
ALEC TUNE	FREMONT FIRE - OES	atune@fremont.gov	
RICARDO MARTINEZ	UNION CITY / NEWARK	Rich.martinez@newark.com	510-427-7772
Lenka Hovorka	CITY OF NEWARK	lenka.hovorka@newark.org	510-673-7640
MICHAEL HANNON	CITY OF NEWARK		

2

Public Risk Assessment Meeting Outreach Flyer/Press Release

Tri-City Local Hazard Mitigation Plan
Press Release/Outreach: Risk Assessment Meetings

Get Involved!

HELP YOUR COMMUNITY BE HAZARD-READY!

Help the Tri-City area with the development of their 2024 Local Hazard Mitigation Plan.

The Cities of Fremont, Newark, and Union City, and the Alameda County Water District and Union Sanitary Districts are partnering to develop a Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP). Floods, earthquake, fire, and severe weather are just a few of the hazards of concern to our community. While natural hazards such as these cannot be prevented, an LHMP forms the foundation for a community's long-term strategy to reduce disaster losses by breaking the repeated cycle of disaster damage and reconstruction. Communities with a FEMA-approved LHMP are eligible to apply for both pre- and post-disaster mitigation grant funding and are better positioned to respond and recover when disasters occur. The new LHMP will also provide a framework for each cities' floodplain management program, which may result in lower flood insurance premiums for area residents and businesses under FEMA's National Flood Insurance Program's (NFIP) Community Rating System (CRS).

Nationwide, taxpayers pay billions of dollars annually helping communities, organizations, businesses, and individuals recover from disasters. Some disasters are predictable and, in many cases, much of the damage can be reduced or even eliminated through hazard mitigation planning.

You are invited – to Planning and Public Meeting #2– the Risk Assessment Meetings

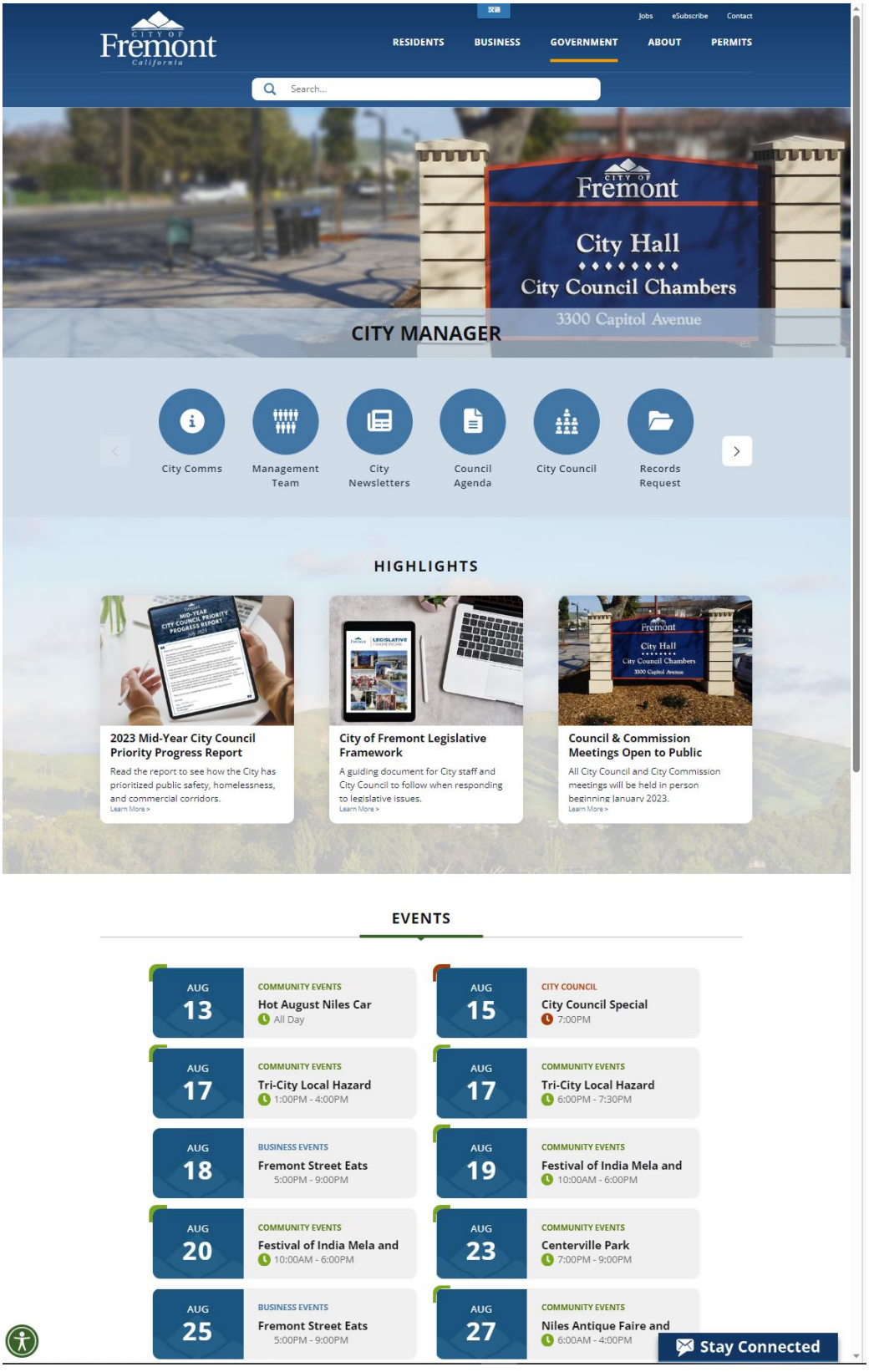
During our second Planning and Public Meetings, we will be reviewing the risk assessment data developed to date and are looking for your feedback in refining and adding to the in process Risk Assessment. *We encourage attendance and participation from the general public at either our upcoming Planning Committee or Public Meetings; please select the time that works best for you:*

Planning Committee Meeting
August 17, 2023 (Thursday)
1:00 – 4:00 pm
Newark Library
37055 Newark Blvd.
Newark, CA 94560

Public Meeting
August 17, 2023 (Thursday)
6:00 – 7:30 pm
Kennedy Youth Center
1333 Decoto Rd.
Union City, CA 94587

For more information on this project, please visit: my.fremont.gov/tri-city-hazard-plan. For questions, please contact Alec Tune, Emergency Services Manager, Fremont Fire Department at (510) 494-4256 or atune@fremont.gov.

Public Risk Assessment Meeting – Invitation on City of Fremont (City Manager) Website



Public Risk Assessment Meeting – Public Agenda

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) PUBLIC MEETING #2 - RISK ASSESSMENT

Thursday August 17, 2023
6:00 - 7:30 pm
Kennedy Youth Center
1333 Decoto Road
Union City, CA 94587

---

1. Introductions
2. Status of the LHMP Planning Process
3. Review and Input on Hazard Risk Assessment Maps, Information, and Data
4. Next Steps

Public Risk Assessment Meeting Sign in Sheets

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Mid-Term Public Meeting
August 17, 2023 (6:00 - 7:30 pm)
Kennedy Youth Center | Union City, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
ALEC TUNE	EMERGENCY SVCS. MGR.	FREMONT FIRE OES	atune@fremont.gov	510-494-4256
Jeanine Foster	PM/SR. mitigation planner	Foster Morrison	jeanine.foster@fosterm.com	303 717-7171
Karoline Terrazas	OPM	USD	karoline@unionsanitary.ca.gov	925-487-2839
Jeanne Jones			jeanne.marie.jones@gmail.com	
RICARDO MARTINEZ	~~DEP~~ EMERGENCY COOR	NEWARK/UNION CITY	RICARDOM@UNIONCITY.ORG	510-427-7772

Final Public Meeting Outreach Paid Ad (Tri-City Voice 1/16/2024)



The Fremont CONNECTION

Fremont

Tri-City Area Public Agencies Invite Comments on the 2024 Tri-City Local Hazard Mitigation Plan

Help Your Community Be Hazard-Ready!

ACWD Alameda County Water District | Fremont | Newark California | Union City California | USD Tri-City Wastewater

Floods, earthquake, wildfires, and severe weather are just a few of the hazards that could affect the Tri-City area. While natural hazards such as these cannot be eliminated, communities can reduce risk through mitigation.

In 2023, the cities of Fremont, Newark, Union City, and the Alameda County Water and Union Sanitary Districts partnered to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP) as an update to their previous plans. A Hazard Mitigation Plan is a foundational, long-term strategy to reduce the risk of natural disasters to communities – by assessing risk, and identifying potential actions, policies, and investments to reduce risk. The new LHMP will allow each agency to apply for Federal Emergency Management Agency (FEMA) mitigation grants to fund projects identified in the LHMP. In addition, the LHMP enhances each cities' floodplain management planning under FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS).

Following an award of a $187,500 grant to the City of Fremont by the California Governor's Office of Emergency Services and FEMA in September 2022, professional services were enlisted to develop the plan. In May 2023, planning began with the convening of a Planning Committee consisting of City and District personnel, as well as other key public agency and community stakeholders. The LHMP is scheduled to be finalized and submitted to Cal OES and FEMA for approval in Spring 2024.

Public Review Draft

The Public Review Draft of the Tri-City LHMP will be available online (in pdf format) beginning January 19, 2024, through February 16, 2024, at www.my.fremont.gov/tri-city-hazard-plan. The LHMP will also be available in print beginning January 25, 2024 through February 16, 2024 at the following locations, during normal business hours:

- Fremont Main Library – 2400 Stevenson Blvd., Fremont, CA 94538
- Newark Library – 37055 Newark Blvd., Newark, CA 94560
- Union City City Hall – 34009 Alvarado-Niles Road, Union City, CA 94587

Open Public and Planning Committee Meetings

Two final meetings are scheduled as follows:

Public Meeting
Wednesday, January 24, 2024
(6:00 pm – 7:30 pm)
Fremont Main Library, Fukaya Room
2400 Stevenson Blvd.
Fremont, CA 94538

Planning Committee Meeting
Thursday, January 25, 2024
(9:00 am – 11:30 am)
Downtown Event Center, Capitol Room
3500 Capitol Ave.
Fremont, CA 94538

All interested stakeholders and members of the public are welcome to attend either meeting.

Comments on the Public Review Draft

There are several options for providing comments on the Tri-City LHMP Public Review Draft:

1. Email comments to jeanine.foster@fostermorrison.com.
2. Drop off written comments or send by mail to:
   Fremont Fire Department
   Office of Emergency Services
   3300 Capitol Avenue, Building "A"
   Fremont, CA 94538
   Attn: Hazard Mitigation Plan
3. Bring comments to the public meeting.

All comments are **due by February 16, 2024.**

For more information, visit my.fremont.gov.

Frequently Asked Questions (FAQs)

What is Hazard Mitigation?

Hazard mitigation means any sustained action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.

What are Natural Hazards?

Natural hazards are events that occur in nature that threaten the safety of human lives and property. Some examples include earthquakes, severe storms, floods, wildfires, and tsunami.

Why is Natural Hazard Mitigation Important?

Rising costs associated with disaster response and recovery have focused the attention of local, state, and federal government officials on addressing natural hazards before they occur. Hazard events – such as torrential rains and flooding, wildfires, and earthquakes – cannot be prevented. However, their impacts can be reduced through hazard mitigation. Planning for natural hazards and the implementation of mitigation measures can substantially reduce impacts to the community. According to FEMA, each dollar invested in mitigation saves an average of six dollars in losses. Natural hazard mitigation can reduce loss of life, injuries, property damage, emergency response and recovery costs, and the economic and social impacts that natural disasters pose to our communities.

Hazard Mitigation Plan and Plan Update Process

Following an award of a $187,500 grant to the City of Fremont by the California Governor's Office of Emergency Services (Cal OES) and FEMA of a $250,000 grant to the City of Fremont in September 2022, professional services were enlisted to develop the plan. In May 2023, planning began with the convening of a Planning Committee consisting of City and District personnel, as well as other key public agency and community stakeholders. The LHMP is scheduled to be finalized and submitted to Cal OES and FEMA for approval in Spring 2024.

The plan assesses natural hazards and analyzes the likely impacts each hazard poses to people and property in each city, and in the Tri-City area. The plan establishes goals and prioritizes potential projects to reduce natural hazard risk. These projects may be considered for future hazard mitigation grant funding, which is administered by Cal OES and FEMA, and awarded on a competitive basis. Additionally, the LHMP enhances each cities' floodplain management planning under FEMA's National Flood Insurance Program, Community Rating System.

2023 Year-End City Council Priority Progress Report Now Available



and programs. It is important to note that all of this was completed while employers across the region, including the City of Fremont, confronted unprecedented hiring challenges and persistent high vacancy rates. While we made important progress this year in filling additional vacancies, we still have further to go. I commend staff for prioritizing workload and responses in an efficient manner, while balancing the staffing constraints we still face," stated City Manager Karena Shackelford.

Highlights include:

- Applied $7.5 million of one-time revenues and savings to increase the General Fund Budget Uncertainty Reserve to address future economic uncertainty.
- Launched the Homelessness Response Plan development process and conducted extensive community outreach including: a project overview, timeline, community/stake-

Final Public Meeting Outreach on Facebook



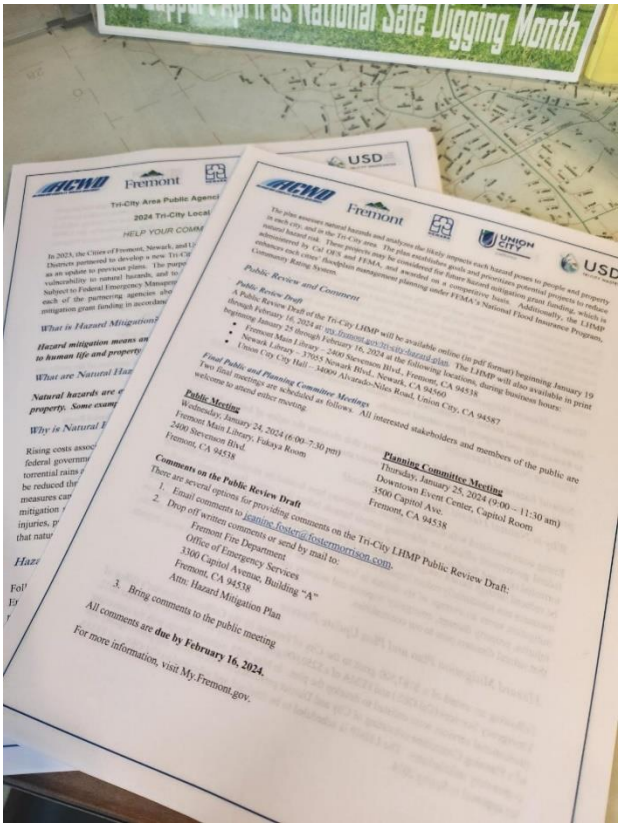
Final Public Meeting Outreach on Twitter

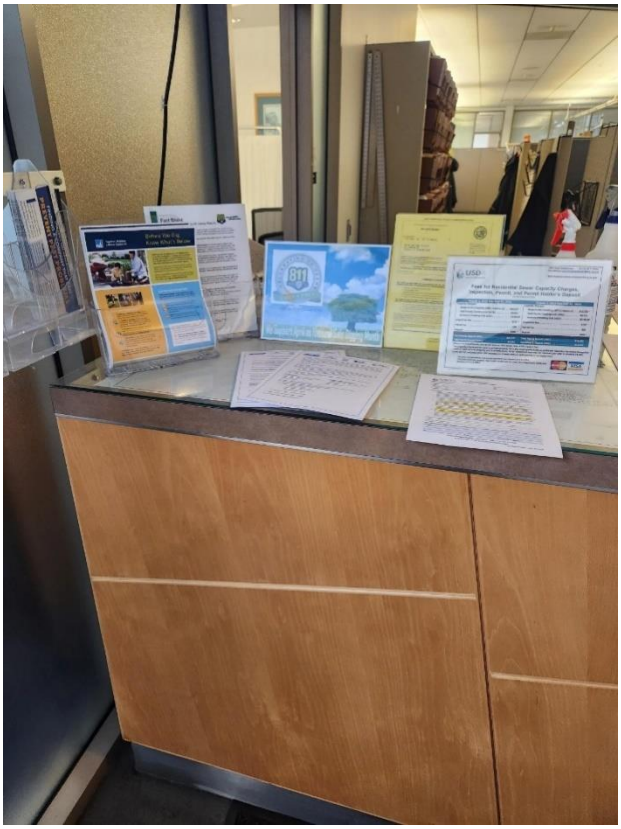


Final Public Meeting Outreach on Instagram



Final Public Meeting Outreach at USD Service Counter





Final Public Meeting – Public Agenda

AGENDA

TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN (LHMP) FINAL PUBLIC MEETING

Wednesday, January 24, 2024
6:00 - 7:30 pm
Fremont Main Library – Fukaya Room
2400 Stevenson Blvd.
Fremont, CA 94538

---

1. Introductions
2. Overview of the LHMP Development Process
3. Overview of the Tri-City LHMP
4. Public Comments and Input
5. Next Steps

Final Public Meeting Sign in Sheets

SIGN-IN SHEET
TRI-CITY MULTI-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN PROJECT
Final Public Meeting
January 24, 2024 (6:00 – 7:30 pm)
Fremont Main Library – Fukuyu Room | Fremont, CA

Name (First, Last)	Title	Department/Organization/ Affiliation	Email Address	Phone
Kathleen Josie Claxton		public	Veracloria@sbcglobal.net	(510) 792 7357
Steve Skala		Public	Steve_Skala@comcast.net	408 623 5849
Carin High		CCCR	cccr-refuge@gmail.com	510-378-2120
Paul Sethy		ACWD	paul.sethy@acwd.com	—
Alice Tune	EMERGENCY SVCS. MGR	FREMONT FIRE OES	atune@fremont.gov	(510) 494-4256
Reshmi Inamdar	President	Tri City Interfaith Council	Sya&R.Inamdar@gmail.com	510 206 8158
Jana Sokale		CCCR/NEWARK Resident	janasle@aol.com	—
Wayne Miller		CCCR/Newark Resid	WMCATS@AOL.com	510-676-1918
John Weed		Public	JHWEED@AOL.COM	510-651/885
Ricardo Martinez	Emergency Coor.	City of Union City/Hayward	RICARDO.M@unioncity.org	510 927 7772
Jacob Reed	Supervisor	A.C.W.D.	jacob.reed@acwd.com	(510) 504-6238
Kwelan Tevrizas	OPM	USD	KTevrizas@unionsanitary.ca.gov	(510) 477-7547
Jessica Yang	Resident of Newark	Public	jessicahartyang@gmail.com	(510) 366-0405
Alex Buga	Resident of Newark	Public	alexandergbuga@gmail	916 642 2331
Erin Pang		Save The Bay	epang@savesfbay.org	

1

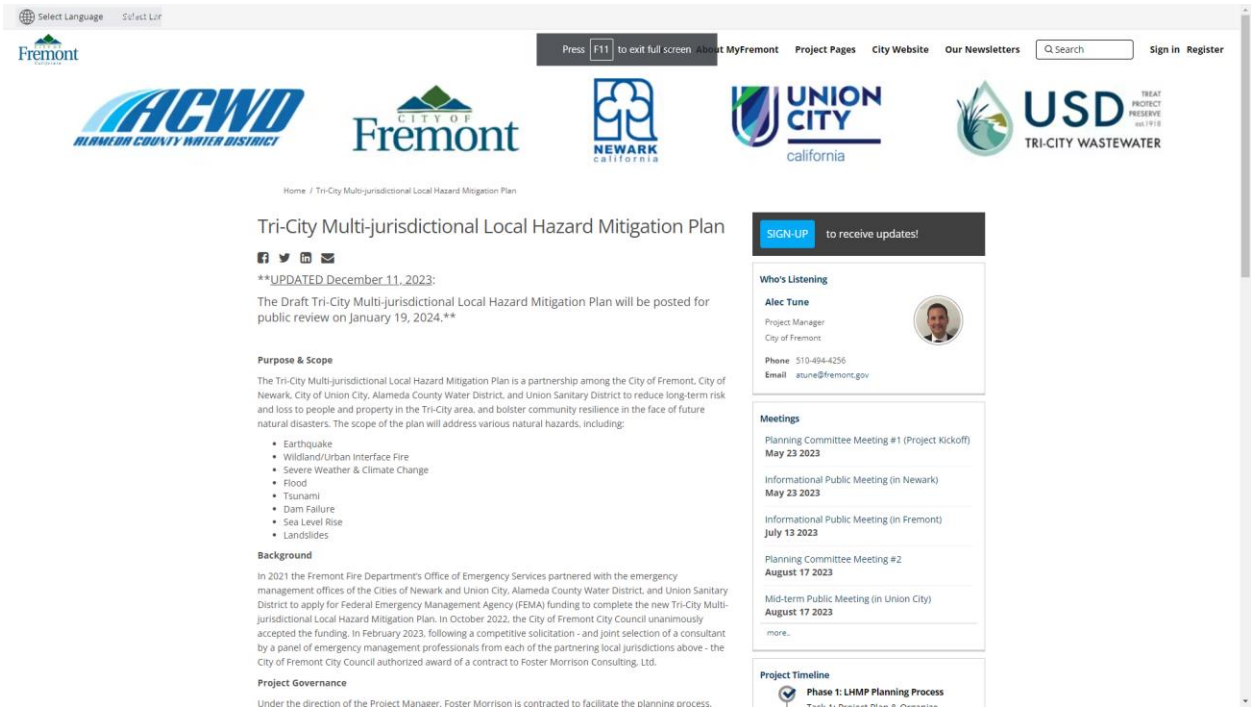
(d) Other Public Outreach Efforts

Public Outreach Activity	Description
MyFremont LHMP Update Website May 2023 – February 2024	MyFremont housed the official Tri-City 2024 LHMP Update webpage. Information on the Plan update process and location of documents, and all Planning Committee and public meeting locations were posted on the MyFremont website. This website also included a link to the Survey.
Public Outreach Flyer for Kickoff Meeting May 2023	An initial public outreach flyer was developed for the initial public and planning committee kick off meetings and updated throughout the project.
Public Outreach Flyer in Newark Community Centers May 2023	Public outreach flyer posted in the 3 Newark community centers. This included the Clark W. Redeker Newark Senior Center, the George M. Silliman Community Activity Center, and the Newark Community Center.
Union City Bike to Work Day May 18, 2023	In Union City held a bike to workday on 5/18/2023 - the City provided a hand out and the Public Outreach Flyer was included the flyer in the 150 bags that were distributed.
Newark Swearing-In Ceremony for new County Supervisor Vasquez May 2023	Richard Martinez attended the swearing in ceremony held in Newark for new County Supervisor Vasquez. As part of that ceremony, he did outreach for the LHMP Kickoff planning committee and public meetings and had the Public Outreach Flyers handed out.
ACWD posting of LHMP Flyer in their Lobby May/June 2023	The public outreach flyer was posted in late May/June 2023 in the ACWD lobby to let customers and visitors to the District know of the LHMP kickoff meeting and how they can be involved.
City of Fremont Website Fremont.gov July – February 2024	The City of Fremont Website has been providing coverage of the LHMP project. It is one of three highlighted initiatives on the City's Main pagefremont.gov. Additionally, all upcoming Planning Committee and Public Meeting dates appear on the City's calendar (at https://www.fremont.gov/residents/city-calendar), and are highlighted on the main page for the City Manager's Office, https://www.fremont.gov/government/departments/city-manager.
City of Newark Website	The City of Newark developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website linked to the MyFremont LHMP webpage.
City of Union City Website	The City of Union City developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website linked to the MyFremont LHMP webpage.
Alameda County Water District Website	ACWD has a link to the Tri-City LHMP on their website at https://www.acwd.org/125/Emergency-Preparedness.
Union Sanitary District Website	The Union Sanitary District developed a Tri-City 2024 LHMP webpage to keep their citizens informed on the LHMP plan development process and how to be involved. This website linked to the MyFremont LHMP webpage.
City of Newark Facebook May 20 & 23, 2023	The City of Newark posted on Facebook to remind everyone of the Tri-City 2024 LHMP kickoff meeting.
City of Union City Facebook, Twitter, Instagram May 19, 20, 33, & 23, 2023	The City of Union City posted on Facebook, Twitter, and Instagram to remind everyone of the Tri-City 2024 LHMP kickoff meeting.

Public Outreach Activity	Description
Tri-City 2024 LHMP Public Outreach Survey August 2023 – January 2024	A public survey was posted on the MyFremont website inviting the public to comment on how concerned and prepared the five participating jurisdictions and individuals are for a possible natural disaster, including flood events. The Survey was advertised through a variety of mechanisms throughout the Plan development process. This included utilizing a QR code embedded in the Public Outreach Flyer. See https://www.my.fremont.gov/tri-city-hazard-plan
Union City CERT table at the South Alameda Buddhist Bizarre Event June 25, 2023	The public outreach flyer was included at the Union City CERT table at the South Alameda Buddhist Bizarre Event promoting the LHMP and how the public can get involved.
Union Sanitary District Public Outreach July 2023	The Union Sanitary District placed the public outreach flyer at their from permit counter promoting the LHMP and how the public can get involved.
City of Newark Social Media and City Website LHMP Survey Outreach August 2023	The City of Newark promoted the LHMP Survey on both the City website and through social media.
City of Fremont Social Media Posting Facebook, August 8, 2023	The City of Fremont promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media outreach, including Facebook.
City of Fremont Social Media Posting Twitter, August 8, 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media, including Twitter.
City of Fremont Social Media Posting Nextdoor, August 9, 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media, including Nextdoor.
City of Newark Social Media and City Website LHMP Outreach August 2023	The City of Newark promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media.
City of Union City Social Media and City Website LHMP Outreach August 2023	The City of Union City promoted the LHMP Survey on both the City website and through social media.
City of Union City Social Media and City Website LHMP Outreach August 2023	The City of Union City promoted the LHMP Public Meeting #2 on the Risk Assessment on both the City website and through social media.
Fremont's Citywide weekly e-newsletter to residents, The Fremont CONNECTION August 18, 2023	Fremont's Citywide weekly e-newsletter to residents, The Fremont CONNECTION August 18, 2023 promoted the LHMP survey.
City of Fremont, Facebook LHMP Survey Promotion August 18, 2023	The City of Fremont promoted the LHMP survey on Facebook.
City of Fremont, LinkedIn LHMP Survey Promotion August 18, 2023	The City of Fremont promoted the LHMP survey on LinkedIn.

Public Outreach Activity	Description
Newark Days September 14-17	The public outreach flyer was included at the Newark CERT table at Newark Days promoting the LHMP and how the public can get involved.
Union City Community Outreach at Our Lady of the Rosary on Saturday October 7, 2023	The public outreach flyer for the LHMP was developed into a sign and index size cards to hand out at the Union City Community Outreach at Our Lady of the Rosary on Saturday October 7, 2023

MyFremont LHMP Update Website May 2023 – February 2024



Public Outreach Flyer for Kickoff Meeting - May 2023

Help Reduce Disaster Losses in Our Community!
We need your participation in the
Tri-City Local Hazard Mitigation Plan

The Cities of Fremont, Newark, and Union City and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The purpose of an LHMP is to assess community risk and vulnerability to natural hazards, implement actions to reduce future losses, and maintain eligibility for federal mitigation grant funding in accordance with the Disaster Mitigation Act of 2000.

Visit My.Fremont.gov
(or scan the QR code)

What is Hazard Mitigation?

Hazard mitigation means any sustained action taken to reduce or eliminate the long-term risk to human life and property from natural hazards.

What are Natural Hazards?

Natural hazards are events that occur in nature that threaten the safety of human lives and property. Some examples include earthquakes, severe storms, floods, wildfires, and tsunami.

Why is Natural Hazard Mitigation Important?

Most people who live or work in the Tri-City area have been impacted by natural hazards in one way or another. Rising costs associated with disaster response and recovery have focused the attention of local, state, and federal government officials on addressing natural hazards before they occur. Hazard events – such as the torrential rains and flooding which occurred in late December 2022 and January 2023, and high winds in March 2023 – cannot be prevented. However, planning for natural hazards and the implementation of mitigation measures to reduce risk can substantially reduce community impacts. Example mitigation measures include a seismic upgrade to a public safety building, strengthening a levee, or a policy to require clearing of vegetation in wildfire prone areas. Natural hazard mitigation measures can significantly reduce loss of life, injuries, property damage, emergency response and recovery costs, and the overall economic and social impact that natural disasters pose to our community.

Hazard Mitigation Plan and Plan Update Process

Utilizing a Federal Emergency Management Agency (FEMA) grant, the three cities and two districts are developing a new Tri-City LHMP that will meet all requirements to update the City of Fremont's 2016 LHMP and the 2017 Union City/Newark Multi-jurisdictional LHMP. A Planning Committee comprised of representatives from the Cities, Districts, County; neighboring jurisdictions; federal, state, and local agency stakeholders; and the public will guide development of the new plan.

The plan will address the natural hazards to which the Tri-City area is most vulnerable and will assess the likely impacts these hazards pose to people and property in the Tri-City area. Additionally, the plan will also establish goals and prioritize potential projects to reduce natural hazard risk.

Another benefit of mitigation planning is that it can reduce the cost of flood insurance to residents and businesses. The Tri-City LHMP will include a framework for improving floodplain management and reducing flood insurance premiums under FEMA's National Flood Insurance Program's (NFIP).

National Flood Insurance Program's Community Rating System

The NFIP's Community Rating System (CRS) is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premium rates are discounted to reflect the reduced flood risk resulting from community actions that meet the goals of the CRS Program. The reduction in flood insurance premium rates is provided according to a community's CRS classification. The City of Fremont is currently a CRS Class 7, which provides for a 15 percent discount on flood insurance to those located within the City's jurisdiction. The Cities of Newark and Union City are currently evaluating joining the CRS.

Public Engagement

Members of the community have a very important role in this process. Several Planning Committee and public meetings will be held over the next ten months. A draft of the Tri-City LHMP will be available by early 2024 for review and comment by the public and all interested stakeholders. Drafts will be posted at My.Fremont.gov and will be provided in select public locations, to be announced. Public meetings on the Draft Plan and a final Planning Committee meeting will also occur in early 2024. All interested stakeholders and members of the public are encouraged to attend public meetings – as well as Planning Committee meetings, which are open to the public.

For more information on this project and how you can get involved, visit My.Fremont.gov or contact:

Fremont	Newark	Union City
Alec Tune Emergency Services Manager Fremont Fire Department (510) 494-4256 atune@fremont.gov	Ricardo Martinez Emergency Coordinator City of Newark (510) 578-4806 RichM@newark.org	Ricardo Martinez Emergency Services Coordinator City of Union City (510) 675-5363 RicardoM@UnionCity.org

Alameda County Water District	Union Sanitary District
Jacob Reed O&M-Emergency and Security Services Alameda County Water District (510) 504-0230 jacob.reed@acwd.com	Karoline Terrazas Organizational Performance Manager Union Sanitary District (510) 477-7547 karolinet@unionsanitary.ca.gov

Public Outreach Flyer in Newark Community Centers - May 2023

From: Ricardo Martinez <RicardoM@UnionCity.Org>
Sent: Wednesday, May 24, 2023 2:58 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>; Jacob Reed <Jacob.Reed@acwd.com>; Alec Tune <atune@fremont.gov>; RichM <RichM@newark.org>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Cc: Caroline Abellar <Caroline.Abellar@acwd.com>
Subject: RE: weblink to Planning Committee Meeting #1

Hi All,

Once I get the new flyer, I will replace the one I have. I have had posted in the Newark community centers but I can have those replaced with the new one and I can get pictures taken and sent in.

Jeanine, last week I had flyers handed out at two events, one in each City. In Union City it was a bike to workday on 5/18 our City provided a hand out and I included the flyer in the 150 bags that were distributed. In Newark they held the swearing in ceremony for new County Supervisor Vasquez and did community outreach there and I had flyers handed out. In both cases I did not have pictures taken of the flyers. Moving forward I will do so.

Regards,
Richard

Union City Bike to Work Day - May 18, 2023

See image above under heading Public Outreach Flyer in Newark Community Centers - May 2023.

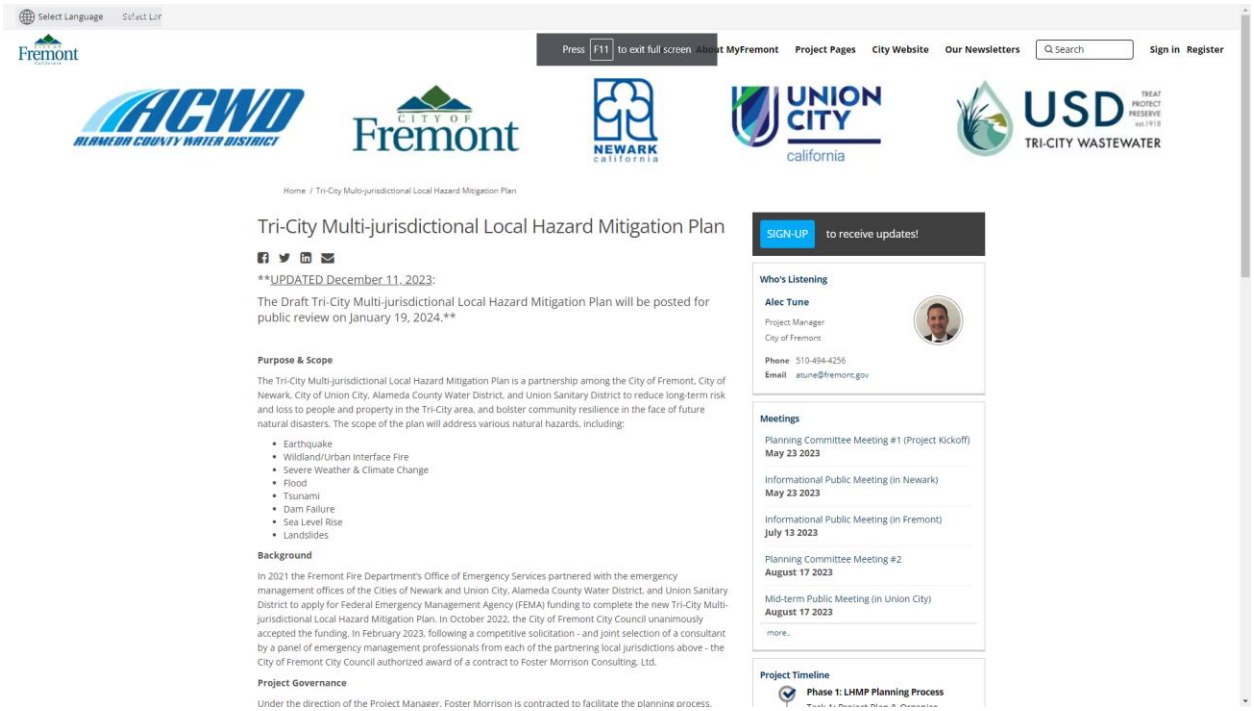
Newark Swearing-In Ceremony for new County Supervisor Vasquez - May 2023

See image above under heading Public Outreach Flyer in Newark Community Centers - May 2023.

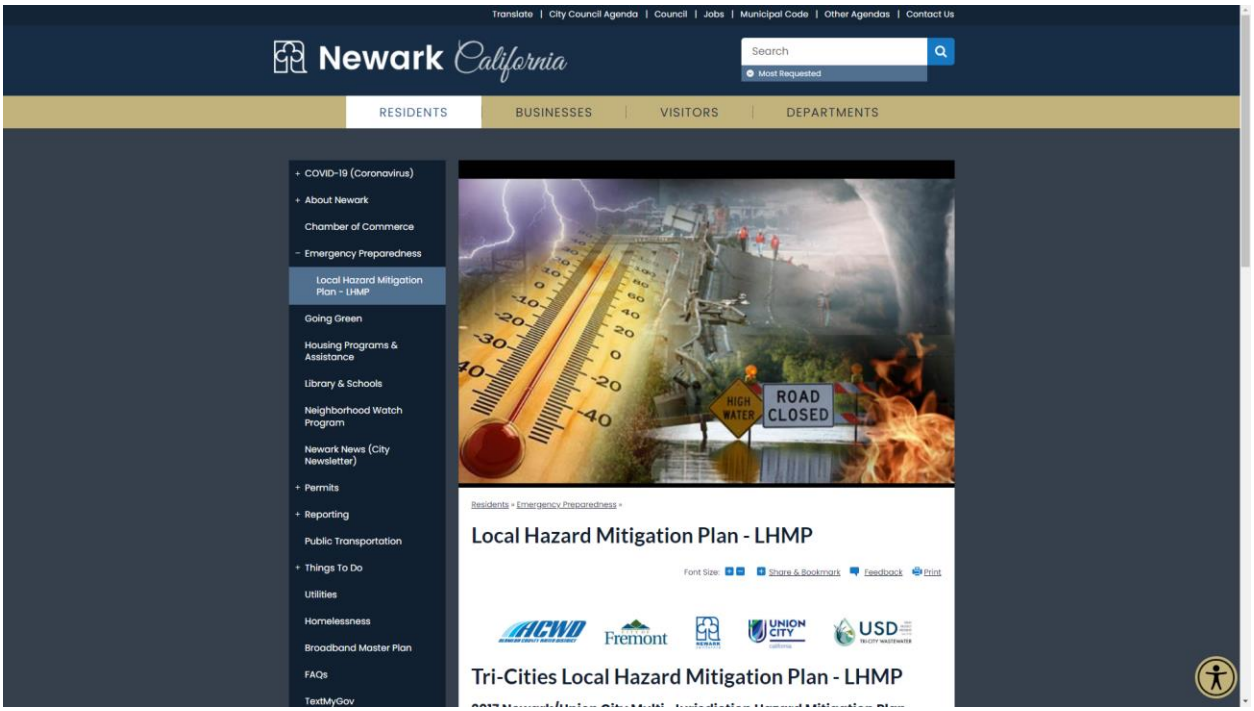
ACWD posting of LHMP Flyer in their Lobby - May/June 2023



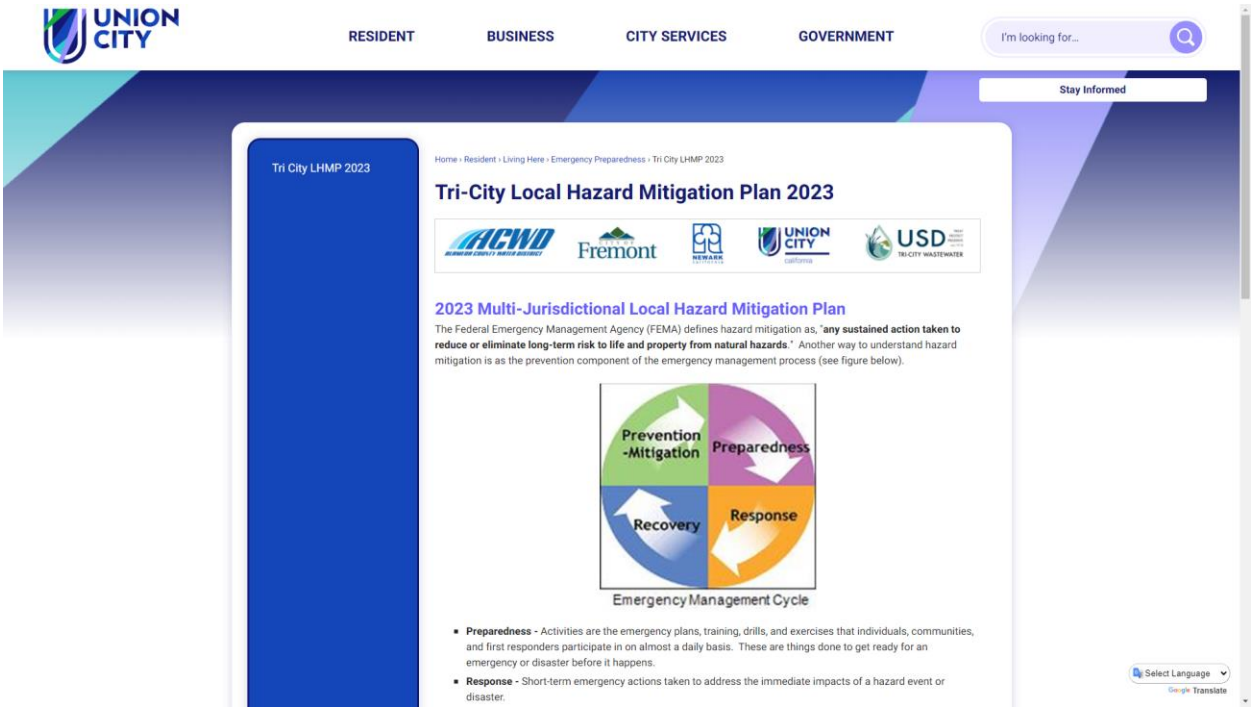
City of Fremont Website (Fremont.gov) - July – February 2024



City of Newark Website



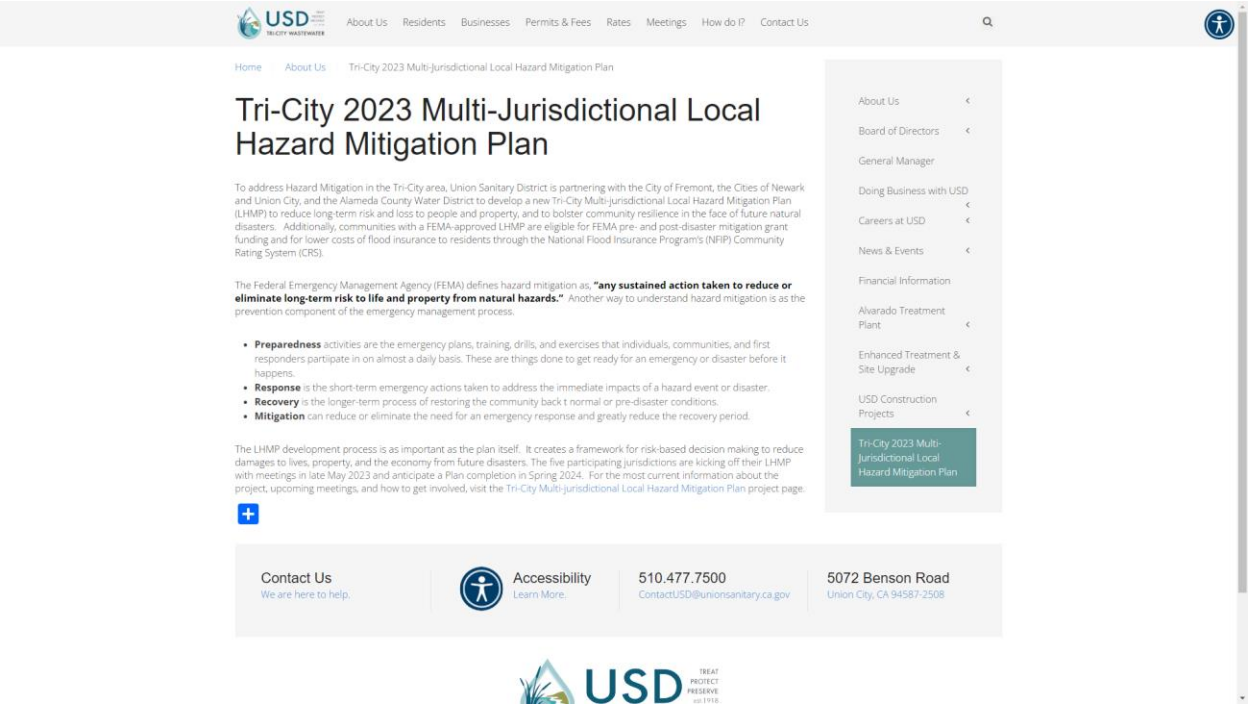
City of Union City Website



Alameda County Water District Website



Union Sanitary District Website



City of Newark Facebook – May 20 & 23, 2023

City of Newark, CA Government
5d ·

Help our community be hazard-ready! The City of Newark is partnering with the City of Fremont, City of Union City, the Alameda County Water District and Union Sanitary District to develop the Tri-City Local Hazard Mitigation Plan (LHMP) to reduce long-term risk and loss to people and property in the Tri-City area, and to bolster community resilience in the face of future natural disasters.

Attend the upcoming Planning Committee Meeting #1 (Project Kickoff):
Tuesday, May 23... See more



2 1 share

City of Newark, CA Government
2d ·

LOCAL HAZARD MITIGATION PLAN MEETING REMINDER:

Planning Committee Members: Attend the upcoming Planning Committee Meeting #1 (Project Kickoff):
Tuesday, May 23, 2023 (1:30 pm – 4:00 pm)
Downtown Event Center... See more



City of Union City Facebook, Twitter, Instagram - May 19, 20, 33, & 23, 2023

City of Union City, California
5d ·

The Cities of Union City, Fremont, and Newark, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The first informational public meeting is Tuesday, May 23, 2023, at 6:00-7:30 PM at the George M. Silliman Community Activity Center – Community Meeting Room in Newark, CA.

Visit https://www.unioncity.org/800/Tri-City-LHMP-2023 for more information.



City of Union City, California
2d ·

The Cities of Union City, Fremont, and Newark, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP). The first informational public meeting is tomorrow, May 23, from 6:00 PM - 7:30 PM at the George M. Silliman Community Activity Center—Community Meeting Room in Newark, CA.

Visit https://www.unioncity.org/800/Tri-City-LHMP-2023 for more information.

#LHMP



City of Union City @UnionCityCA_Gov · May 22

The Cities of Union City, Fremont, and Newark, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP).

Visit unioncity.org/800/Tri-City-L... for more information.

#LHMP



City of Union City @UnionCityCA_Gov · May 19

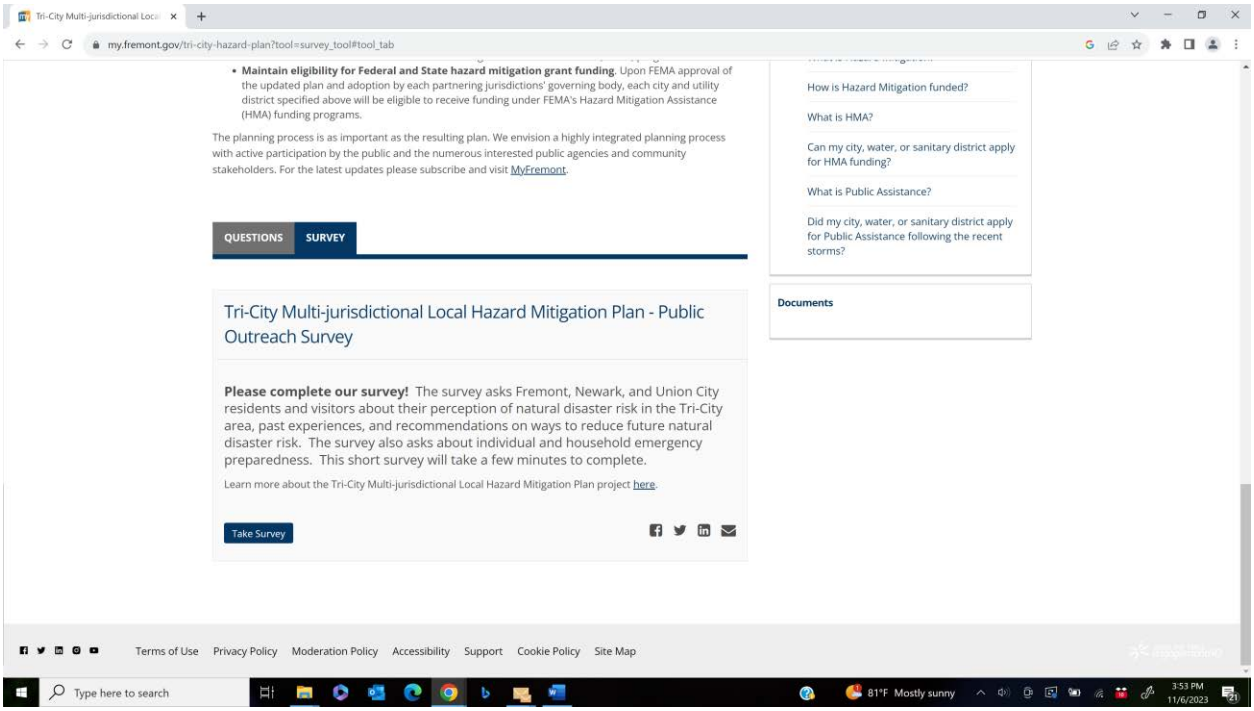
The Cities of Union City, Fremont, and Newark, and the Alameda County Water and Union Sanitary Districts are partnering to develop a new Tri-City Multi-jurisdictional Local Hazard Mitigation Plan (LHMP).

Visit unioncity.org/800/Tri-City-L... for more information.



176

Tri-City 2024 LHMP Public Outreach Survey August 2023 – January 2024

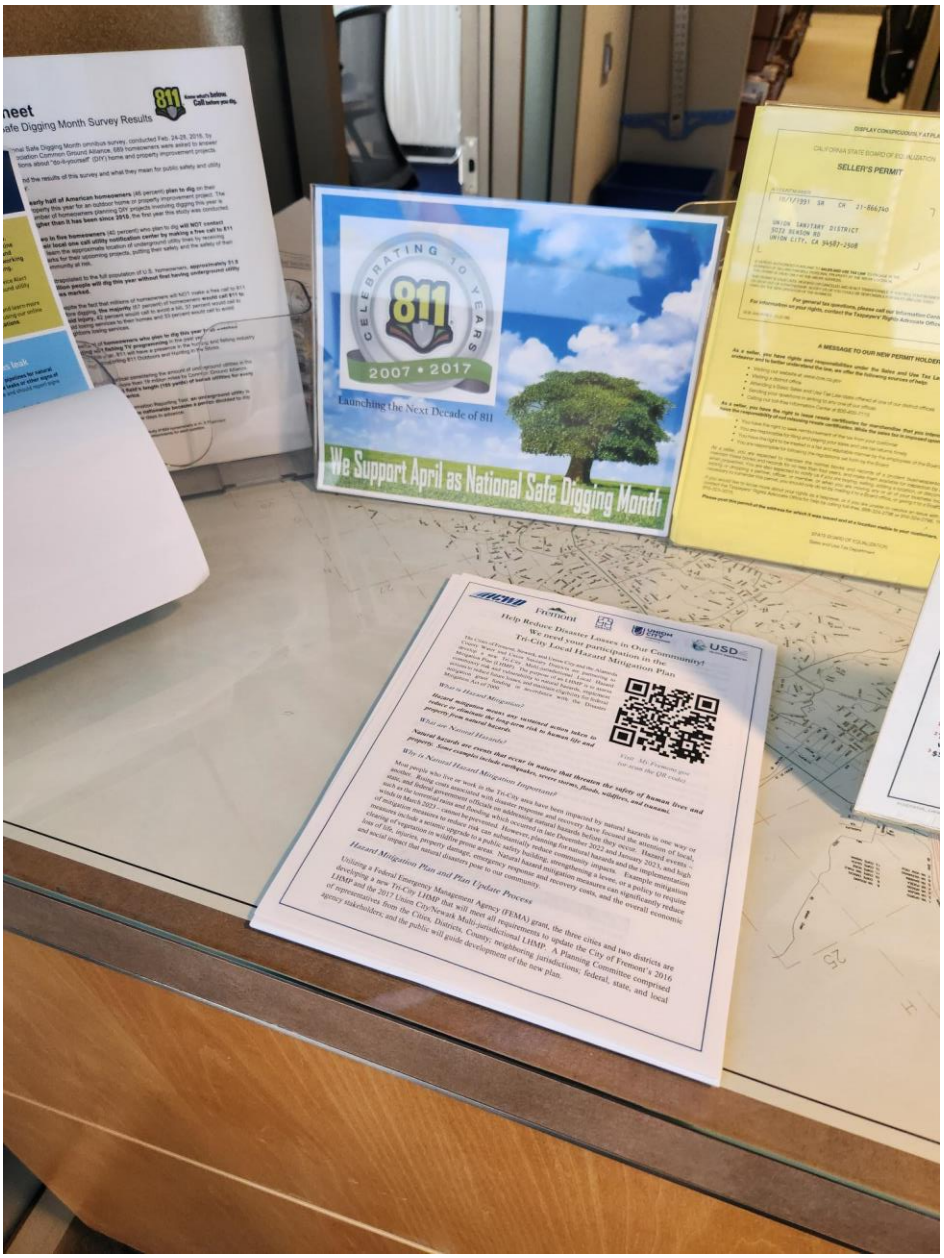


Union City CERT table at the South Alameda Buddhist Bizarre Event - June 25, 2023



Union Sanitary District Public Outreach - July 2023




811
CELEBRATING 10 YEARS
2007 • 2017
Launching the Next Decade of 811
We Support April as National Safe Digging Month
SELLER'S PERMIT
Fremont
USD

City of Newark Social Media and City Website LHMP Survey Outreach - August 2023

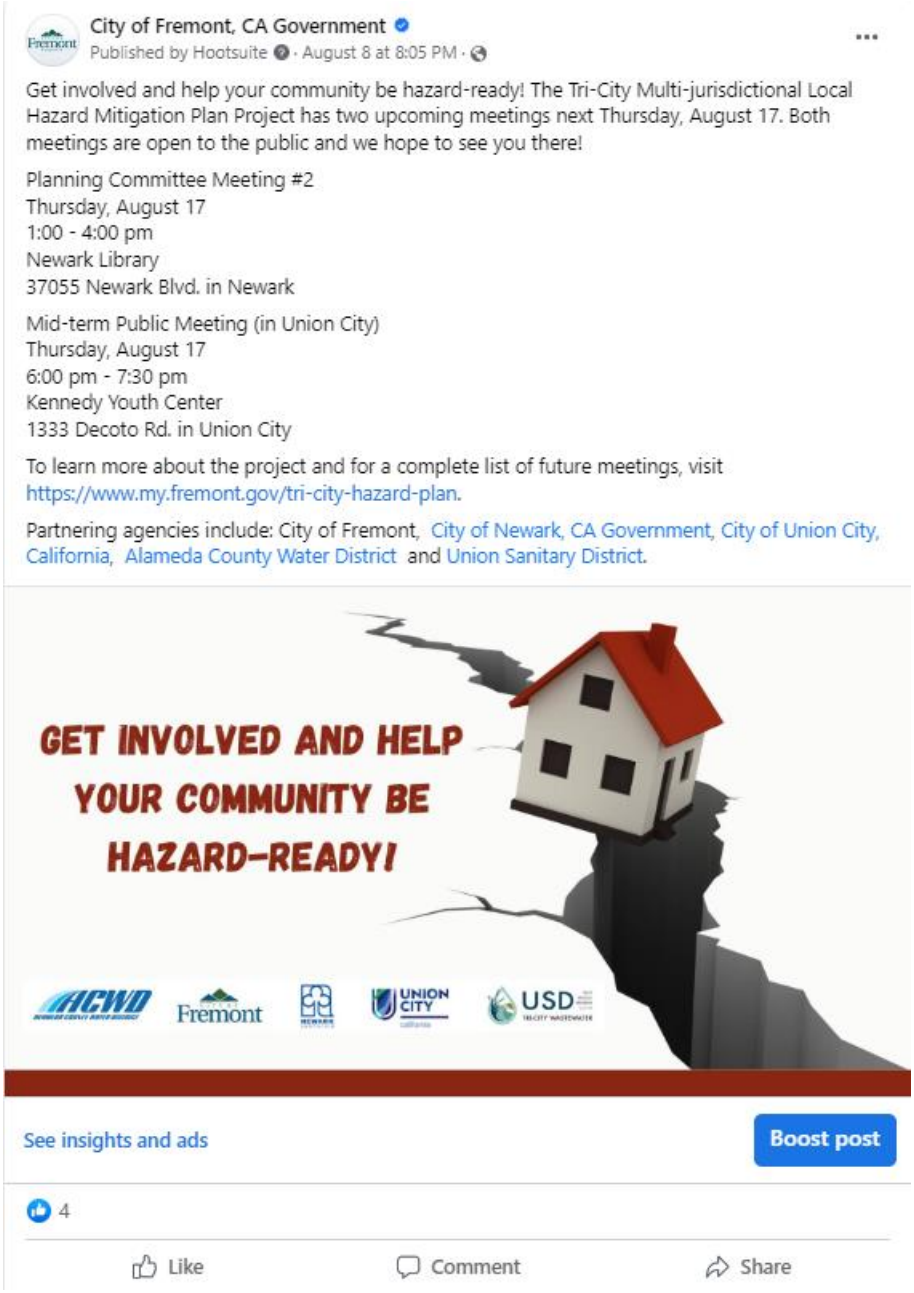
City of Newark, CA Government
1d ·

The cities of Fremont, Newark, and Union City, Alameda County Water District (ACWD), and Union Sanitary District (USD) want to hear from you! As part of the Tri-City Multi-jurisdictional Local Hazard Mitigation Plan project, Fremont, Newark, and Union City residents and visitors are being asked about their perception of natural disaster risk in the Tri-City area, past experiences, and recommendations on ways to reduce future natural disaster risk. Let us know by taking our ... See more



1 2 shares

City of Fremont Social Media Posting - Facebook, August 8, 2023



City of Fremont Social Media Posting - Twitter, August 8, 2023



City of Fremont Social Media Posting - Nextdoor, August 9, 2023



City of Newark Social Media and City Website LHMP Outreach – August 2023



City of Union City Social Media and City Website LHMP Outreach - August 2023

NEED

City of Union City Social Media and City Website LHMP Outreach - August 2023

NEED

Fremont's Citywide weekly e-newsletter to residents, The Fremont CONNECTION - August 18, 2023

The Fremont Connection, August 18, 2023 Issue

CO City of Fremont, CA <fremont@news.fremont.gov>
To Alec Tune

Reply | Reply All | Forward | ...

Fri 8/18/2023 3:52 PM

Retention Policy COFO365retention (2 years) Expires 8/17/2025

If there are problems with how this message is displayed, click here to view it in a web browser.



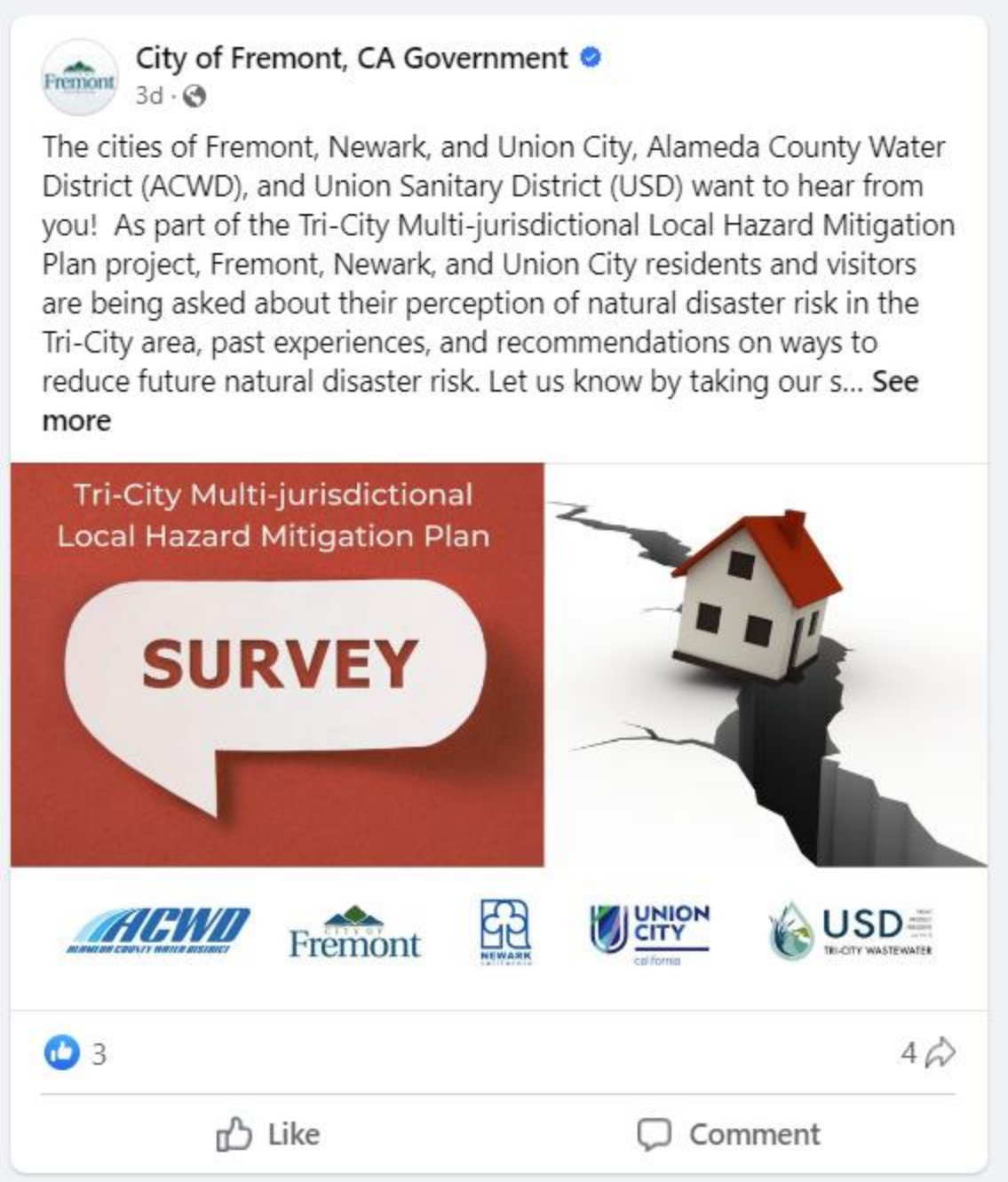
ACWD Fremont Newark Union City USD

Tri-City Multi-jurisdictional Local Hazard Mitigation Plan Survey

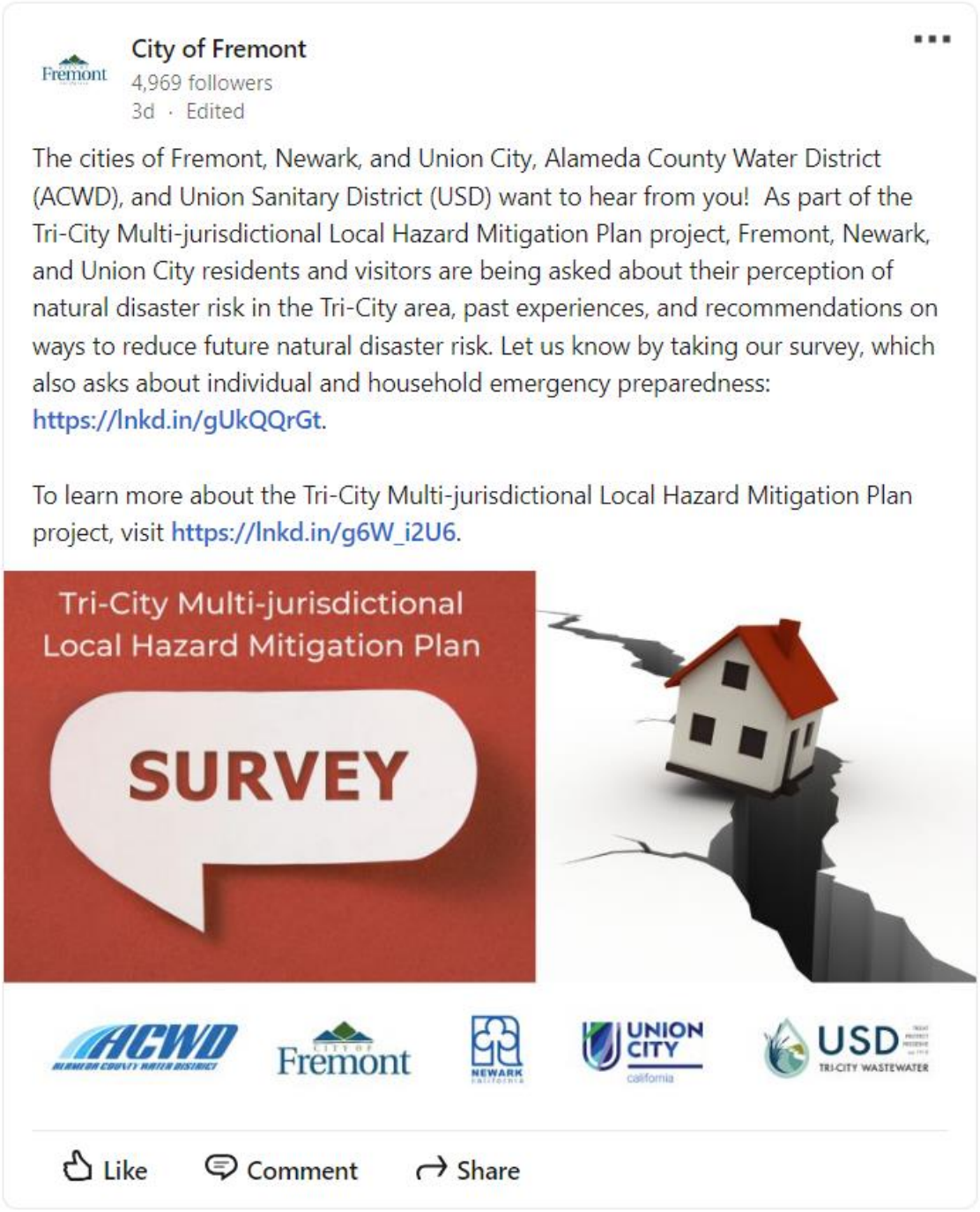
Fremont, Newark, and Union City residents and visitors are being asked about their perception of natural disaster risk in the Tri-City area, past experiences, and recommendations on ways to reduce future natural disaster risk. The survey also asks about individual and household emergency preparedness.

Take the Survey

City of Fremont, Facebook LHMP Survey Promotion - August 18, 2023



City of Fremont, LinkedIn LHMP Survey Promotion- August 18, 2023



Newark Days - September 14-17



Union City Community Outreach at Our Lady of the Rosary on Saturday October 7, 2023



Public Comments Received

Table of Contents

Comment Number	Comment Date	Mechanism	Commentor	Organization
1, 2, 3, 4	7-12-2023	MyFremont	Donna Liz Ames (twice) jsandoe	– – –
5	8-17-2023	Email	Liz Ames	BART Director Tri-City Ecology vice chair Save Our Hills chair
6	1-23-2024	Email	Anne Wein	USGS
7	1-23-2024	Email	Cora Chiu	–
8	1-24-2024	Email	Steve Skala	Fremont Resident
9	1-24-2024	Email	Carin High	Citizens Committee to Complete the Refuge
10	1-24-2024	In Person	Director Weed	ACWD/Resident
11	2-11-2024	Email	Florence Tsang	Union City
12	2-15-2024	Email	Jessica Yang & Alex Buga	Newark Residents
13	2-16-2024	Email	Jessica Yang	Newark Resident
14	2-16-2024	Email	Erin Pang	Save the Bay Greenbelt Alliance SPUR
15	2-16-2024	Email	Wayne Miller	Newark Resident
16	2-16-2024	Email	Alexandr Buga	Newark Resident
17	2-16-2024	Email	Carin High & Jana Sokale	Citizens Committee to Complete the Refuge
18	2-16-2024	Email	Cora Chiu	–
19	2-17-2024	Email	Rosalynn Liu	Fremont Resident
20	10/19/2022	Email	Kelly	Mission Peak Conservancy

Comment Number	Comment Date	Mechanism	Commentor	Organization
21	2/26/2024	Email	Josh Sonnenfeld	Alameda Creek Alliance California Native Plant Society - East Bay Chapter Center for Biological Diversity Citizens Committee to Complete the Refuge Golden Gate Bird Alliance Greenbelt Alliance Mission Peak Conservancy Ohlone Audubon Society San Francisco Baykeeper San Francisco Bay Wildlife Society Santa Clara Valley Audubon Society Save The Bay Sierra Club, San Francisco Bay Chapter SPUR

Comment 1, 2, 3, and 4

Why doesn't Fremont have a designated place to go for disaster like other cities have. Such as a community center or other designated place?

donna, 16 Nov 2023, 20:06

How can we use modeling scenarios to ensure coordination and alignment with the Tri-City and County to create a southern SF bay master plan based on sea level rise projections and flooding? How can we use modeling scenarios to stimulate conservation approaches and coordinate climate education programs for better collaboration between cities, counties and research institutes?

liz ames, 13 Jul 2023, 17:01

With limitations on funding to protect and expand critical infrastructure and ecosystems, the actions should serve the whole including the Tri-City and county. Deficiencies in addressing flood control, transportation, water supply, various underground infrastructure warrants a master plan as a project outcome. This outcome should be based on earthquake, flooding, water and food availability, ecosystem survival and sea level rise modeling scenarios. We must break the cycle of project-by-project damage and costly reconstruction. Without a larger picture of the climate's historic impacts -we will not be prepared to consolidate resources during the time and money we have available to us and our future generations. Please coordinate with the county's plan and create a holistic master plan and strategy. Appreciate your work to reduce and manage risk so we are not scrambling for funds between cities and counties.

liz ames, 13 Jul 2023, 16:28

Are the risks associated with train derailment within the scope of this effort. Fremont, Newark, and Union City all have active rail lines, several of which cross Alameda Creek. Many of the trains running on these lines carry hazardous chemicals.

jsandoe, 12 Jul 2023, 21:23

Comment 5

From: liz ames <liz4bart@gmail.com>
Sent: Thursday, August 17, 2023 12:38 PM
To: Alec Tune <atune@fremont.gov>
Cc: Harris Caroline <caroline.harris@earthlink.net>; Jana Sokale <janaslc@aol.com>; Elizabeth Ames <unioncityhills@gmail.com>
Subject: Tri-City multi-jurisdictional Local Hazard Mitigation Plan (LHMP) comments - critical infrastructure and biodiversity protection and conservation

Look forward to climate adaption and hazard prevention through smart land use planning as we should be planning for a much longer timeline than 5 -years to achieve climate change adaption to our tri-city area. More communities are being caught by surprise and are unprepared to plan ahead for this climate crisis on a local and regional level.

LHMP timeline and strategy

A 5-year short-range planning the LHMP effort should be phased for a longer timeline akin to proposed City General Plans that forecast 20 to 30 years ahead or longer. The typical city 20-30 year land use forecasting model is not sufficient to adapt to hazards in some cases based on emerging climate science.

Biodiversity in CA calls for conservation -these efforts are not evaluated in the LHMP. California is home to more plants and species than any state in the nation making CA a world hot spot.
CDFA - OEFI - Biodiversity (ca.gov)

california-biodiversity-action-plan.pdf (californiabiodiversityinitiative.org)

SLR threat to our San Francisco Bay Estuary, the 2nd largest in the nation.
Saving Tidal Marshes in the San Francisco Bay | U.S. Climate Resilience Toolkit
Sea Level Rise CA scenario for 2100 is currently up to 10 feet per guidance document used the the CA coastal Commission.

California Coastal Commission Sea Level Rise Policy Guidance Appendix B report in 2018

Long range planning for Alameda Creek

Land uses must be reevaluated to achieve a climate resilient plan for Alameda Creek. Areas of conservation include restoring natural streams entering into Alameda Creek Watershed and habitat for endangered steelhead trout and wildlife corridors.

Historic Conservation Agreement Signed for Apperson and Sunol Quarries With Center for Biological Diversity and Alameda Creek Alliance

Unlock Alameda Creek (Alameda County) — Bay Area: Resilient By Design Challenge (resilientbayarea.org)

Long range planning for critical infrastructure such as roads can embrace wildlife corridors and more

Creating a plan for roads used as wildlife corridors along interstates and highways is also recommended which could be used for people as well

Road Ecology Center (ucdavis.edu)

Eco-Logical / Crediting | Road Ecology Center (ucdavis.edu) improving habitat and project selection

Transportation Wildlife Corridors – Alameda County Resource Conservation District (ACRCD)

Planning for new critical infrastructure and opportunity conservation sites will minimize hazardous development and the need for rebuilding in areas not suited for development.

If LHMP includes short and long-term social, environmental and economic stability goals, our near and long-term development and conservation futures will be less entangled and more collaborative. We live in one of the most important biodiverse locations in the nation and in the world and look forward to working with you.

Liz Ames

BART Director

Tri-City Ecology vice chair

Save Our Hills chair

Comment 6

From: Wein, Anne <awein@usgs.gov>
Sent: Tuesday, January 23, 2024 2:34 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: TRi-city LHMP

Hi Jeanie
I poked my nose into the plan.
It is looking good!

I did not have to much time available right now. I just have one comment.
I appreciated the perspective of climate change influences on hazards.

I may have missed it but I did not see recognition of the interaction between liquefaction and sea-level rise. This is a question that HayWired engagement partners were asking. Our response is in a storymap that may be of interest:
https://storymaps.arcgis.com/stories/b5f973b6e4da45258c0b5a5368ca26f7

Regards

Anne Wein
U.S. Geological Survey
P.O. Box 158 (mailing)
350 N. Akron Rd. (physical)
Moffett Field, CA 94035
650-439-2463
650-521-3367 (cell)

Comment 7

From: Cora Chiu <musicwings@gmail.com>
Sent: Tuesday, January 23, 2024 4:56 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Tri-city (fremont Newark, Union city) hazard mitigation

I would like to suggest:

* do not allow houses build in the flood zone
* do not allow men made disaster destroy our natural habitat
* protect our wetlands

Cora Chiu

Comment 8

From: Steve Skala <steve_skala@comcast.net>
Sent: Wednesday, January 24, 2024 4:20 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: comment for City of Fremont Hazard Mitigation Plan

Hello Ms. Foster,

You're listed as a contact point to receive comments regarding the draft Tri-City Local Hazards Mitigation Plan. I have comments from the Annex A - City of Fremont attached.

Regards,
Steve Skala

Language from Attachment

Review of draft Local hazard Mitigation Plan Annex A: City of Fremont

By Steve Skala, resident of Fremont 1/24/24

Short-Term Flooding

I'm not sure if we have adequately captured risk of localized flooding from heavy rain atmospheric events. Note that such events are expected to become more frequent with climate change and we just had a devastating heavy rain event in SanDiego this week that was described in the news as a 1000 year event with 3-4 inches of rain in one day. Fremont is highly dependent upon the Alameda County Flood Control District (ACFCD) drainage system to protect the city from localized flooding. I think Fremont and the hazard preparation process should review possible rain events using the San Diego event as a guide and determine the impact on ACFCD infrastructure and if that infrastructure will be overwhelmed. If ACFCD infrastructure is overwhelmed, there will be significantly more risk areas for local flooding than shown in Figure A-75. In principle, there can be local flooding along any of the ACFCD channels. Additionally, I don't think the document fully captures risk to energy infrastructure. In particular, if ACFCD infrastructure is overwhelmed, there is a high possibility of flooding and water damage to underground electrical utilities, mostly from flooding transformers. We may need a mitigation that can deenergize parts of the electric grid that are vulnerable if a catastrophic local rain event shows risk of overwhelming some of ACFCD's infrastructure.

Earthquake

A note for a graphical error, the map on figure A-53 has the Hayward Fault pretty far off from it's actual location. The Hayward Fault is much closer to 680 in the area of 262 than is shown. Note that the fault is also shown to be a considerable distance from Tule Pond.

Figure A-60, Haywired Scenario 7.0 magnitude Number of Ignitions (50 MPH Winds) seems inaccurate. Many recent examples of wildfire have shown complete destruction of neighborhoods that have similar

housing density as all of Fremont in a strong wind. I presume a 50 MPH wind will be comparable to the winds that have driven recent wildfire urban disasters. If a 50 MPH wind will result in significant fire spread, then an earthquake event that has more ignition sources than the fire department can quickly control will result in significant loss to affected neighborhoods. The report ran a Monte Carlo simulation, but I could not find the number of ignitions sources that were presumed in the model. I will suggest that impacts will be much more significant than shown in figure A-60 if we have 100 homes that catch fire in a major earthquake and there is a 50 MPH wind. I don't know the number of expected fires from an earthquake, but Fremont does not have high rates of automatic gas shutoff values installed in buildings. I also don't know if the electric grid will be automatically deenergized and thus we may have ignition sources from various electrical shorts either in utility poles or in buildings. It seems to be very plausible to have 100 ignitions started in Fremont from a major earthquake and that I think with a 50 MPH wind can cause significant impacts until there is further adoption of mitigations like automatic utility shutoffs are in place.

There are a few other risks from a major earthquake that are associated from prolonged periods without electricity. There are, 1) certain people in nursing homes and assisted living facilities may run out of medical oxygen. Most people on oxygen have electric-driven concentrators and backup supplies of bottled oxygen are not sufficient to cover prolonged electric outages. We may want to consider a mitigation of requiring some level of local power backup at relevant facilities or have portable generators on hand that can be quickly deployed. 2) a major earthquake happening coincidentally with a heat event will place heat-vulnerable people at a large risk due to extended periods without power. This mitigation will require local shelters to have electric microgrids or other electric backup sufficient to provide needed cooling.

Comment 9

From: C/H High <howardhigh1@comcast.net>
Sent: Wednesday, January 24, 2024 5:25 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: quick questions for you

Hi Jeanine,

I hope you are doing well. I have a couple of quick questions (for now) regarding the Tri-City LHMP process.

- For tonight's meeting is there a formal public comment process and if so, how much time will be allotted to each speaker?
- What is the process moving forward. There appears to be quite large gaps in the information currently available within the draft plan and each of the annexes. I assume updates may be provided during tomorrow's meeting regarding the status of supplying that information. However, this leaves the public at a disadvantage in terms assessing whether all the risks have been identified, what mitigation measures are proposed, etc. for example the city of Fremont, despite what I believe is a commendable response, has yet to provide Tables 15 and 16. Will there be an opportunity to review and comment on the document once all of the yellow highlighted items are submitted and incorporated into the document? If not, in some cases, we will only be able to hazard guesses (sorry) regarding whether the risks are being adequately addressed.
- Can documents such as the San Francisco Bay Shoreline Adaptation Atlas: Working with Nature to Plan for Sea Level Rise Using Operational Landscape Units be referenced in the potential mitigation measures? And if it can, could inclusion of that document and the potential adaptation opportunities identified for further consideration result in funding implementation of nature-based solutions projects (once planning has occurred and they are shovel ready)? Or would there have to be more specific proposals under consideration for implementation?

This is a lot of information to digest in a short period of time. I'm glad we have until February 16th, but am concerned even then we won't have all the substantive information.

Regards,
Carin High
Citizens Committee to Complete the Refuge

Comment 10

John Weed (City of Fremont resident and Directory of ACWD) noted in the January 24th public meeting and a follow up phone call that the Mission Hills Fault should be addressed more comprehensively in the LHMP. Director Weed provided a fault map related to the Mission Fault prepared for Ohlone College. Director Weed also provided a USGS landslide study specific to the 1998 Mission Peak landslide and landslide susceptibility mapping (dated 2000) specific to the Mission Ridge area. Director Weed also asked a question of Fremont's previous participation in a BCDC (San Francisco Bay Conservation and Development Commission) project in where Fremont was to establish a shoreline area.

Comment 11

From: Florence Tsang <fmarafiles@gmail.com>
Sent: Sunday, February 11, 2024 12:12 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: TriCity LHMP Public Review Draft Comments

Hi Jeanine,

I do regret getting involved in this late in the game, but first I appreciate all the work in these documents with all the groups involved.

I'm a registered architect living in Union City, and my kids both go to school with NHUSD. My concerns right now are mostly with the Mitigation Strategies:
- All the items left blank in Fremont's LHMP update.
- All the action items that currently have no existing mechanisms through which action will be implemented.

I do hope that I'm not alone, but I'm seeing opportunities residents and the greater community can assist with in these efforts, especially with Action Item 24 in the Union City LHMP update. Is there someone from Public Works or NHUSD I can reach out to who may be leading this effort?

NHUSD is capable of mobilizing parent volunteers as I'm witnessing through Guy Emanuelle's Mandarin Immersion program. I also work at an architecture firm in Oakland with close to 50 people called Pyatok. We specialize in affordable housing but we're also concerned about climate change, its impact on communities, and building resiliency measures. I feel if there is a need for an architect or a team of architects and engineers to assist with conducting the feasibility study through Public Works or NHUSD, I'm curious to know. Then if it would help, I would like to start coordinating efforts with the leaders involved.

Thank you,

--
Florence Tsang,
Architect, AIA GA

33018 Carrara Terrace
Union City, CA 94587
510.304.6148

Comment 12

From: Jessica Yang <jessicaheartyang@gmail.com>
Sent: Thursday, February 15, 2024 5:07 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Cc: Rich Martinez <RichM@newark.org>; Ricardo Martinez <RicardoM@unioncity.org>; Jacob Reed <Jacob.Reed@acwd.com>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>; Alec Tune <atune@fremont.gov>; Megan Rivera <mrivera@fremont.gov>
Subject: Re: Tri-City Local Hazard Mitigation Plan

Hi Jeanine,
It was great to meet you on January 24th, 2024 evening at the Fremont Library. Alex and I live in Newark next to the Don Edwards wetland park. We consider the Bay Area our home and are greatly concerned about its future with only 10% wetland natural habitats for wildlife remaining. In addition we find that many of the city land use policies allowing further development on top of bay lands hazardous areas for future residents. A neighbor in one of those new developments reported cracked and uneven foundations due to standing water. This is just one example of how the city's decision to allow developers to build and sell homes in wetland areas as a liability for Newark residents city taxpayers. We believe the Tri-City Hazard Mitigation Plan can help better inform decision makers of the Land Zoning city council.

I have some feedback on the goals.

Could you please update Goal 3, Goal 7 and add Goal 8?

GOAL 3 (Improved): Promote public education, awareness, and understanding of how to prevent natural hazards and the risk and vulnerability
natural hazards present to quality of life, property, environment, and the economy .

Goal 7 (Improved): Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake
outcomes such as landslides by restricting housing development on at risk hill sides.

GOAL 8 (New): Build flooding resiliency, prevent and reduce flood impacts and mitigate undesirable flooding through wetland preservation and estuary restoration.

Thank you,
Jessica Yang & Alex Buga

Comment 13

From: Jessica Yang <jessicaheartyang@gmail.com>
Sent: Friday, February 16, 2024 11:46 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Cc: Rich Martinez <RichM@newark.org>; Ricardo Martinez <RicardoM@unioncity.org>; Jacob Reed <Jacob.Reed@acwd.com>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>; Alec Tune <atune@fremont.gov>; Megan Rivera <mrivera@fremont.gov>
Subject: Re: Tri-City Local Hazard Mitigation Plan

Hi Jeanine,
Wonderful to hear. Here's my last public comment with regards to that Actions. See below.
Thank you

Fremont Action 28. Prevent and protect against landslide and property loss by enforcing laws to stop new housing developments on earthquake zones landslide risk areas.

Fremont Action 35. In areas of new condo, apartment, single family home developments, require fire lane open spaces between houses blocks.

Newark Action 14. Replace Eucalyptus Groves with native tree species that grow to the height of the existing Eucalyptus Groves. Currently, the Eucalyptus groves are home to monarch butterflies, turkey vultures, white egrets.

Replacements of these large old trees should be conducted slowly to prevent further habitat loss while young new trees are introduce.

Or just don't remove these Eucalyptus Trees as they are currently home to native wildlife.

Fremont Action 18- Mitigate flooding impacts by restoring wetlands at Newark Site 4 where the current pick and pull is located. Instead of allowing Developers to build high density housing at the former wetlands site. Restoring wetlands as our natural flood protection brings back some of the flood waters and slowing the rate that water re-enters the stream channel, wetlands can reduce the severity of downstream flooding and erosion. This is also an act of Natural Resource Protection for the sensitive native wildlife in this area.

Newark Action 2 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Fremont Action 9- Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Union City Action 2 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Newark Action 11 - Install storm drainage improvements at Lindsay Tract in a way it is beneficial to restoration the natural environment. The drainage solution would involve bioswales or bioretention ponds.

Union City Action 16 - Requires all new homes to not be built on liquefaction soils in union city.

USD Action 1 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Comment 14

From: Erin Pang <epang@savesfbay.org>
Sent: Friday, February 16, 2024 7:14 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>; Alec Tune <atune@fremont.gov>
Cc: Victor Flores <vflores@greenbelt.org>; Rishika Rawat <rrawat@greenbelt.org>; satkinson@spur.org
Subject: Tri-City LHMP Comment Letter from SPUR, Greenbelt, and Save The Bay

Hi Jeanine and Alec,
Please find attached SPUR, Greenbelt, and Save The Bay's joint comment letter on the Tri-City LHMP draft. Thank you for the opportunity to give input.

Once you have a chance to review the letter, we'd appreciate the opportunity to meet with you or someone on your team to answer any questions you may have and to get your thoughts on our recommendations. Please let us know if you're available!

All the best,

Erin Pang
POLICY ASSOCIATE
epang@savesfbay.org | 510-463-6809 | www.saveSFbay.org
Pronouns: she, her

SAVE THE BAY

Protect and Restore San Francisco Bay
For People and Wildlife

A 15page pdf was attached and is included below.

Fremont Fire Department
Office of Emergency Services
3300 Capitol Avenue, Building "A"
Fremont, CA 94538
Attn: Hazard Mitigation Plan
(Submitted via email to jeanine.foster@fostermorrison.com)

February 16, 2024

Re: Comments on the Tri-City Local Hazard Mitigation Plan

Dear Tri-City LHMP Update Team,

Thank you for the opportunity to provide feedback on the Draft 2024 Tri-City Local Hazard Mitigation Plan (LHMP) Update. We are pleased to see that the draft addresses climate impacts like sea level rise, urban heat, flooding, wildfires, and earthquakes. In subsequent drafts of the LHMP, we encourage you to provide more specificity in the sea level rise, flood, earthquake, and multi-hazard resilience policies and to put a greater emphasis on nature-based solutions and preserving natural resources. To realize the following priorities, we encourage you to include the specific line-edit suggestions at the bottom of this document to more comprehensively incorporate disaster and climate resilience, nature-based solutions, and equity into the Tri-City LHMP.

- **Take a multi-hazard resilience approach to approving new developments, capital projects, and the city's climate resilience and adaptation plans.** The Tri-City area is exposed to multiple hazards that must be considered in parallel to determine effective mitigation policies.
- **Update earthquake mitigation actions to address structural and non-structural hazards for new and existing buildings, and critical lifeline services, in the event of a major earthquake.** Our region is operating on borrowed time and we must move swiftly to retrofit existing buildings and lifelines and adopt functional recovery performance standards for critical buildings.
- **Protect homes and facilities from current and future flood risk due to climate change.** Create collaborative sea level rise and groundwater rise resilience plans for all three cities. Update zoning and building codes to ensure new or significant construction and public infrastructure in flood risk zones can withstand future climate conditions. Understand and address flood risk due to stormwater.
- **Prioritize multi-benefit green solutions and protect wetlands to address sea level rise, flooding, urban heat, air pollution, and water pollution.** Green infrastructure (such as green streets and restored wetlands) can improve local water quality, minimize flooding, increase

shoreline resiliency, mitigate urban heat, and improve air quality. Prioritize multi-benefit green solutions in communities with overlapping vulnerabilities.

- **Co-develop solutions with community groups, community members, and the Ohlone people, such that residents feel ownership of the city and solutions reflect the lived experience of frontline communities.** Prioritize climate resilience solutions within historically underrepresented communities and communities most vulnerable to climate impacts. Compensate community members and community groups for their involvement and expertise.
- **Protect Environmental Justice (EJ) communities from exposure to toxic sites.** Assess the risk that toxic sites pose to nearby communities under future climate conditions, and require full cleanup of toxic sites before allowing housing to be built nearby.

The following specific recommendations draw on reports and guidance created by regional agencies and nonprofits. These include Save The Bay's Position Paper on San Francisco Bay Sea Level Rise & Flood Strategy, Greenbelt Alliance's Resilience Playbook, the San Francisco Estuary Institute's SF Bay Shoreline Adaptation Atlas, and the San Mateo County Flood & Sea Level Rise Resiliency District's (OneShoreline) Planning Policy Guidance.

Sincerely,

Sarah Atkinson
Earthquake Resilience Policy Manager
SPUR
www.spur.org | Phone: 510-589-1626 | satkinson@spur.org

Victor Flores
Resilience Manager, East Bay
Greenbelt Alliance
www.greenbelt.org

David Lewis
Executive Director
Save The Bay
www.savesfbay.org

Feedback On Goals

Goal 4: Build capacity and capabilities to increase disaster resilience for all hazards with a focus on the whole community.

- *Recommendation - Add or integrate new objective*: Develop disaster recovery plans that include strategies for shelter-in-place, emergency/interim housing and housing recovery, and how vulnerable communities with limited adaptive capacity will be supported through the process of post-disaster recovery (Adapted from 2022 San Francisco Safety and Resilience Element).

Goal 5 : Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards.

- *Recommendation - Add or integrate new objective*:Prioritize nature-based solutions such as wetland protection and restoration, green stormwater infrastructure, riparian restoration, and open space protection.

Goal 7 : Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake outcomes.

- *Recommendation - Change "Make life safety a priority" to*: Make life safety and functional recovery a priority in building and infrastructure retrofits and new construction.

Feedback On Mitigation Actions

The following table contains our recommendations for revising or adding new mitigation actions to the LHMP parties' mitigation action lists. The first column shows which of the LHMP's goal our recommendation helps to achieve, and the second column indicates which existing mitigation action our recommendation applies to and/or which city the recommended action should be added to. The third column includes our line edit recommendations, and the fourth column provides additional information, such as the sources of our policy recommendations.

Relevant Goals & Objectives	City & Action #	Recommended Changes Red text indicates language that should be added to the LHMP.	Additional Supporting Information
Multi-Hazard Actions			
Goal 1 Goal 2 Goal 4	[Add new Action to all cities]	*[Low-hanging fruit recommendations]* • Ensure foundations and structural systems are designed with consideration of site soils conditions when reviewing projects in areas subject to current or future risk of **liquefaction**, slope instability, sea level rise, **groundwater rise**, and other flood hazards. • Require multi-hazard risk assessments in private development, capital projects, and city's climate resilience programs. • New and/or substantial construction sited in "High" or "Very High" Liquefaction Susceptibility areas in the Bay Area Liquefaction Susceptibility Map provided by the U.S. Geological Survey shall account for liquefaction hazards and the impacts of rising shallow groundwater on liquefaction severity in project design. *[Next step recommendations]*	Low-hanging fruit recommendations: • Adapted from Oakland's Safety Element 2023 • Adapted from San Francisco Safety and Resilience Element • Adapted from OneShoreline Sea Level Rise Planning Guidance Next step recommendations:

		• Limit Development in Hazardous Areas and Minimize Erosion. Minimize threat to structures and humans by limiting development in areas subject to multi-hazard risks like landslide, **liquefaction,** repeated flooding, sea level rise, or other geologic threats. • Ensure that new developments are designed/constructed to meet functional recovery (beyond life safety standards) goals for all hazards. For known hazards, like liquefaction, development should seek performance equivalent to structures built on firm ground.	• Adapted from Oakland's Safety Element 2023 • Adapted from San Francisco Safety and Resilience Element
Goal 1 Goal 6	Newark Action 3: Continuously adopt the most current building standards and include appendices to mitigate hazards like floods, wildfires, and earthquakes Fremont Action 3: In the municipal code, adopt or exceed CA building code standards [Add Action to Union City]	*[Add to project description]* Create additional building standards for new development or significant redevelopment in developed areas that are at risk of hazards, including future climate hazards. For developed areas in current and future flood risk zones, set Base Floor Elevation standards and floodproofing requirements, and require new developments to plan for future flood conditions for the life of the project and contribute to shoreline resilience infrastructure. In developed areas at risk of groundwater rise, consider requirements for groundwater-resilient and corrosion-inhibiting building materials, sump pump restrictions, regular foundation inspections, and permitting limits in areas at risk of toxic contaminant mobilization.	These building requirements can be implemented through Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Zones (see our later recommendation regarding overlay zones). OneShoreline's Planning Policy Guidance offers model language for overlay zones.

Goal 1 Goal 6	Newark Action 4: Hardening and Retrofit of existing facilities [Add this action to Fremont and Union City]	*[Add to project description]* • Include an analysis of risk of future flooding over the life of the facilities and plan upgrades to these facilities with consideration for future increases in flooding, sea level rise, and shallow groundwater rise • Create an adaptation plan with clear triggers or time horizons detailing steps for maintenance, retrofitting, and/or relocation of the retrofitted facilities • Create a prioritization strategy with criteria such as the asset's vulnerability to inundation, sensitivity to inundation, and utility to disadvantaged communities • Develop sea level rise and stormwater checklists for Capital Improvement Projects to ensure flood resilience is incorporated and nature-based solutions are prioritized.	Example: San Francisco has Guidance for Incorporating Sea Level Rise into Capital Planning and a Sea Level Rise Checklist for capital planning.
Goal 1	Newark Action 6: Update and enhance the GIS data systems and mapping for water-related climate hazards Fremont Action 5: Enhance GIS mapping of natural hazard risks, with critical facilities and lifeline overlays	*[Add to project description]* Make sure updated maps address flood risk from all major sources, including major storms, sea level rise, and shallow groundwater rise, and compounding flood risk from these sources. Model the effects groundwater rise will have on buoyancy, seepage, infiltration, liquefaction, and corrosion. Include a layer showing where contaminated sites (as identified in Geotracker and EnviroStore) are located and which ones are at risk of inundation from flooding.	There are hundreds of hazardous sites in the Bay Area that will be exposed to sea level rise by 2100, over 20 of which are in Hayward.

	[Add this action to Union City]		
Goal 7 Objective: Mitigate secondary hazards associated with earthquake events…	Fremont Action 10: Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster. [TBD if included in plan update]	*[Include referenced action in plan update and add the following to project description]* Retrofit existing buildings (prioritizing EJ communities) to use heat pumps, which provide cooling and air filtration on extreme heat and smoke days, and reduce post-earthquake fires. Consider an ordinance requiring installation and periodic inspection and maintenance of gas shut-off valves in existing buildings at the time of sale, transfer of title, and when upgrades are planned for gas piping to minimize the risk of post-earthquake fires due to gas pipeline ruptures.	
	Alameda County Water District 2022 Action: Consider a post-disaster recovery plan and coordinate with Tri Cities on their debris management plans.	*[Add to project description]* Commission Shallow Groundwater Rise Vulnerability and Mitigation Assessments, and incorporate groundwater rise modeling into water infrastructure upgrades plans. Groundwater rise should not be considered separate from other sources of flooding. Evaluate vulnerability of water systems to groundwater rise corrosion/infiltration.	

Climate Change Actions			
Goal 1 Goal 2 Goal 5	Newark Action 7: Sea level rise resiliency plan [Add this Action to Fremont and Union City]	*[Add to project description]* The sea level rise resiliency plan will: • Be aligned with BCDC's shoreline resilience plan guidelines which will come out by Dec. 2024. • Coordinate with other jurisdictions in the city's Operational Landscape Unit (OLU) as outlined in SFEI's Adaptation Atlas to ensure the plan is regional in scope. Align the plan with the Hayward Shoreline Master plan and coordinate regionally. • Prioritize the shoreline's ecological value and ability to adapt to sea level rise. Incorporate "nature-based" design elements to the maximum extent possible to realize multiple benefits including water quality improvement, recreational opportunities, and habitat restoration. • Seek, support, and center the needs and concerns of vulnerable communities to ensure that planning is community-led.	Currently only the Newark LHMP includes developing a sea level rise (SLR) action plan as an action. We strongly recommend all three cities to include this action and develop their plans on the same timeline, as it's important for SLR plans to be regionally collaborative. The sooner cities complete BCDC-approved sea level rise resilience plans, the sooner they can qualify for state funding to implement the plans.

Goal 5	Fremont Action 12: Implement the Urban Forest Management Plan	*[Add to project description]* Integrate flood resilience and stormwater capture into tree planting efforts.	
Goal 5 Goal 6	[Add new Action to Newark and Union City]	*[Add this action to the Newark and Union City action lists]* Action: Prioritize growth in transit-oriented development areas as identified in the General Plan. Preserve open space in shoreline and hill areas.	This action is already included in the Fremont mitigation actions list, and it should be replicated by the other cities as all cities.
Goal 6	Union City Action 10: Update climate action plan	*[Add to project description]* • Integrate climate adaptation measures into the GHG mitigation actions where relevant. For example, actions on expanding multi-benefit green infrastructure can be incorporated into many of the land use and transportation goals. • Expand on the "Climate Adaptation" section by breaking Goals down into concrete actions with timelines and responsible departments the same way the climate mitigation goals were done. • Conduct thorough community outreach & engagement.	
Coastal Flooding and Sea Level Rise, Groundwater Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions			

Goal 5 Goal 6	Newark Action 12: Develop a storm drain master plan [Add this Action to Fremont and Union City]	*[Include red line edits in project description]* "Development of a Stormwater Master Plan will analyze the conditions of the City's existing storm drain system, performance, and operations, including its ability to function under future climate conditions. The results of the analysis will determine deficiencies in the system that will help in prioritizing improvements and eliminate the deficiencies and localized flooding under current and future flood conditions."	Here is an example of a Storm Drain Master Plan from East Palo Alto.
Goal 1 Goal 3 Goal 6	[Add new Action to all cities]	Action: Address the risk of toxic contaminant mobilization due to flooding. Project Description: Create a public inventory of toxic sites and pollutant sources at risk of contaminant mobilization due to sea level rise or shallow groundwater. Work with relevant agencies to comprehensively clean up contamination, prioritizing sites posing the highest and most immediate risk to communities. Partner with frontline communities to develop robust toxic site cleanup standards that must be adhered to before housing can be approved for the site: • Do not rely solely on capping as a solution for containing contaminants in areas that are at risk of inundation but sea level or groundwater rise • Requires all radioactive and hazardous materials to be completely removed from the site and disposed of in the	Hundreds of hazardous sites in the Bay Area will be exposed to sea level and groundwater rise, potentially mobilizing contaminants and threatening nearby communities. San Rafael's Safety Element Program S-5.4B requires hazardous soil cleanup. The City of Richmond passed an Action to Develop a Shoreline Resiliency Plan with Inclusion of an Inventory of Toxic Sites on the Richmond Shoreline

		least harmful way possible, in a facility that doesn't endanger EJ communities • Consider a site "cleaned" only when community-overseen independent testing determines that it reaches the highest Residential Standards, informed by the CalEnviroScreen 4.0 socio-economic, health, and environmental indicators	The recommended toxic site cleanup standards are adapted from the San Francisco Bay Shoreline Contamination Cleanup Coalition's Shoreline Cleanup Position Statement
Goal 1 Goal 2	[Add new Action to Union Sanitary District]	Action: Identify sewer pipes that are at risk of exposure to volatile organic compounds (VOCs) due to proximity to hazardous sites with VOC contaminants, and prioritize upgrading these pipes.	VOCs in soil at contaminated sites can be transported via sewer pipes into buildings and pose a serious health risk (Roghani et al., 2021).
Goal 2 Goal 4	[Add new Action to all cities]	Action: Adopt Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Zones that require specific design, retrofit requirements, and/or hazardous site cleanup requirements for underground infrastructure, roadways, and new shoreline development in already-developed high-hazard areas. Project Description: New developments in the overlay districts must meet the following requirements: • Have a minimum lowest floor elevation of 4 feet above the current base flood elevation and elevate critical equipment	OneShoreline, San Mateo County's Flood and Sea Level Rise Resiliency District, offers guidance for Shallow Groundwater Rise Overlay Districts and Sea Level Rise Overlay Districts in its *2023 Planning Policy Guidance*.[1]

[1] Ibid. *Planning Guidance Policy*. OneShoreline, 2023. https://oneshoreline.org/wp-content/uploads/2023/09/OneShoreline-Planning-Policy-Guidance-Final-June-21-2023-For-Web.pdf.

		• Maximize the use of natural infrastructure for flood resilience (i.e. wetland restoration, green stormwater infrastructure, flood plain restoration, and open space protection) before considering hardened structures • Plan for future flood conditions for the life of the project • Limit the building of emergency centers/shelters, fire stations, hospitals and health care facilities, schools, major electrical and natural gas distribution facilities, and subsurface parking in the overlay zones • Contribute to regional shoreline infrastructure funds • Additionally, existing wetlands and space for upland migration should be preserved for flood protection, habitat restoration, public access, and recreation.	
Goal 1 Goal 5	[Add new Action to all cities]	Action: Prioritize building and maintaining complete green streets. Project Description: Complete green streets are designed to be safe for all users, including pedestrians, bicyclists, and public transit users, and incorporate green stormwater infrastructure (GSI) which minimizes flooding, extreme heat, and pollution. The City will: • Identify communities experiencing heightened flood risk, urban heat, air pollution, and lack of green space to ensure equitable distribution of multi-benefit urban greening strategies • Align safe street, pedestrian and bicycle, climate resilience, storm drain, and urban tree canopy projects to ensure there	Fremont, Union City, and Newark have street safety programs or plans which should be integrated with urban greening and GSI goals so that there are no missed opportunities to include greening into roadway projects. The San Jose Conservation Corps is an example of a workforce development

		are no missed opportunities to incorporate GSI into the public right of way • Invest in workforce development programs for maintenance of urban greening features. • Engage and prioritize community knowledge when designing and planning greening projects.	program that maintains urban greening projects. See the San Mateo County Sustainable Streets Master Plan for an example of a green streets plan.
Earthquake Resilience Actions			
Goal 7	City of Fremont Action 24: Evaluate seismic risk to Lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling.	*[Add to project description]* Establish a Lifelines Council to provide a mechanism for comprehensive planning for lifelines recovery & response.	See SPUR Report on Lifelines.
Goal 7	[Add new Action to Newark and Union City]	1. Develop and implement an earthquake retrofit plan to reduce hazards from earthquakes. The plan should identify and tally the seismically unsafe buildings and structures, including unreinforced masonry, unreinforced concrete and soft-story buildings, and require inspection for these structures. It should also identify sources of funding to help reconstruct or replace inadequate structures and assist homeowners with earthquake	1. See Safety Element of the Alameda County General Plan, A15 2. See SPUR Report on Lifelines 3. See City of Fremont, Action 25

		retrofitting, and provide timelines for action and public education. 2. Evaluate seismic risk to lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling (Fremont's Action 24). **New Recommended Action:** Establish a Lifelines Council to provide a mechanism for comprehensive planning for lifelines recovery & response. See SPUR Report on Lifelines. 3. Ensure development complies with the Alquist-Priolo Earthquake Fault Zone Act, and otherwise avoid development of public facilities or intensive residential, commercial, or industrial development in the immediate vicinity of the Hayward Fault (Fremont Action 25).	
Goal 7	[Add new Action to all cities]	Abate structural and non-structural hazards in City-owned properties as well as special use buildings like retirement homes, childcare centers, schools, and community centers.	Adapted from San Francisco Safety & Resilience Element
Goal 7	[Add new Action to all cities]	1. Maintain up-to-date building codes and encourage or require new and existing buildings and infrastructure to be designed or retrofitted for timely restoration of service (functional recovery) following an earthquake, with particular attention on the effects of liquefaction on buildings and infrastructure. 2. Adopt recovery-based seismic performance targets for new buildings serving recovery-critical functions, so that citywide improvements can advance through the natural	1. Adapted from City of Alameda General Plan 2040. Policy HS-9 2. Recommendation from SPUR Report Building it Right the First Time.

		process of new development, building replacement, and adaptive reuse. Create incentives such as priority permit processing or	
Wildfire and Severe Weather Extreme Heat Actions			
Goal 1	Newark Action 15: Urban Forest Master Plan development Union City Action 23: Develop a long term urban forest management plan to address adverse future impacts on city's natural resources	*[Add to hazards addressed]*: Localized Flooding, Severe Weather Heavy Rains and Storm *[Add to project description]*: In the plan, identify opportunities for urban trees to also serve stormwater capture and flood resilience purposes, such as by incorporating tree wells, bioswales, or other GSI features. Assess opportunities to maintain the urban forest through partnerships with workforce development programs.	Green stormwater infrastructure (GSI) can improve local water quality, minimize flooding by absorbing and filtering stormwater, increase shoreline resiliency, mitigate urban heat, and improve air quality.

Comment 15

From: Wayne Miller <wmcats@aol.com>
Sent: Friday, February 16, 2024 8:41 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Comments on the draft LHMP, from Wayne Miller, Newark, CA

Dear Jeanine,

Thank you for all your work in presenting the LHMP to the public regarding the various jurisdictions and their potential to participate in the Plan, although not required.

Attached are my comments, 20 pages, in a pdf (LHMP=Comments-W.Miller-2-16-24.pdf) for your review.

I, amongst others in environmental groups have some questions and concerns about additional agencies that should be included and contribute to the Plan.

A regional plan has often been discussed, where cities cooperatively work together with all agencies, landowners and the public to produce a viable plan, in addressing the impacts of climate change/disruption and the potential hazards that can befall the public at large.

Sincerely,
Wayne W. Miller, Newark, CA

A 20 page pdf was attached and is included below.

February 16, 2024

Fremont Fire Department
Office of Emergency Services
3300 Capitol Avenue, Building "A"
Fremont, CA 94538
Attn: Hazard Mitigation Plan
*(Submitted via email to **jeanine.foster@fostermorrison.com**)*

RE: COMMENTS ON THE LHMP (LOCAL HAZARD MITIGATION PLAN) FOR THE TRI-CITIES AREA OF FREMONT, NEWARK AND UNION CITY, CA

INDEX TO HEADINGS

1. WHAT'S NEW
2. REGIONAL PLAN
3. REGIONAL CONNECTIONS--SF BAY NATIONAL WILDLIFE REFUGE
4. ENVIRONMENTAL INFLUENCE ON DEVELOPMENTS
5. EXAMPLES OF ENVIRONMENTAL INFLUENCE
6. MITIGATION--MEANING AND INTERPRETATION
7. NATURAL HAZARDS AND HUMAN-CAUSED—STATE OF THE LHMP
8. THE NEWARK PLAN AND ITS LHMP
    - Proposed future developments from the Newark Annex Plan document:
    - Outer region proposed developments, more vulnerable to SLR
    - Inner city area developments in Newark
    - Costs of property
        - Existing costs
        - Future costs
    - FEMA regulations
9. PROGRESSIVE WORLDLY EXIDENCE
    - Solutions—nature-based
10. STATE OF NATURAL AND HUMAN-CAUSED HAZARDS

1. WHAT'S NEW:

In the last part of meeting covered "what's new", to update 5-yr plan. For example, the FEMA 2013 publication, "Mitigation Ideas" a Source to Reduce Risk to Natural Hazards, only covers up to 2013. Fremont has developed a Hazard Mitigation Plan, 2016 to 2021, Approved by FEMA, Adopted by Fremont City Council. The 2024 Tri-City Local Hazard Mitigation Plan Update, Public Review Draft, January 2024 was presented. Annex publications for each city, Fremont, Newark and Union City also were presented.

- The new Tri-city Multi-Jurisdictional Local Hazard Mitigation Plan has solicited the input from the five jurisdictions, Fremont, Newark, Union City, Alameda County Water District and the Union City Sanitary District, with the partnership of other relevant agencies. The three cities have their own annex documents that can be addressed. Although considered separate entities, they need to foster collaborative agreements because all are inter-connected, in view of the overall impacts of climate change and potential hazards that can affect each of us.

    - ***Disappointment**: An action item should be added that commits all five jurisdictions to work collaboratively, with a regional goal, on a Multi-Jurisdictional Sea Level Rise and Groundwater Rise Resilience Plan. Cities must work together to provide resilience planning, Furthermore, it is imperative for success, to fold other relevant sources into the Tri-City Multi-Jurisdictional Plan: The Alameda County Water Conservation and Flood Control District, and other landowners such as the East Bay Regional Parks District (regional, indeed) and the Don Edwards San Francisco Bay National Wildlife Refuge-- to collaborate on a single sea level rise plan and groundwater rise plan.*

- The proposed LHMP needs to incorporate an action plan to add upcoming new risks and potential mitigations to avoid or reduce harm resulting from natural hazards, into New Tri-city Multi-Jurisdictional Local Hazard Mitigation Plan. We must provide public, private and institutional input along with city, county, state and federal concerns, due to changes in the environment, such as increasing and accelerating impacts of climate change/disruption on sea level rise, atmospheric storms, floods, fires, earthquakes, etc.

- A handout in the final January 25 meeting was used to go over a list of current conditions in 2024 and the requirement to address **significant changes,** was to be updated and sent out by Jeanine Foster of Foster & Morrison Consulting. The changes I suggest into the Plan and to add include much of what we are concerned about, as all are inter-related and relative, but we must address each one. In

addition, there are other concerns, not extensively discussed or exposed, except by verbal input, which also must be confronted, some of which are discussed herein.

2. REGIONAL PLAN:

The progression of climate change/disruption has been thoroughly examined, analyzed and published in the press and in scientific literature, for at least the last fifty years. New requirements from FEMA, CA OES and other governmental resources emphasize the importance to adapt plans to mitigate for potential natural hazards. Currently, proposals, through the LHMP, does not require a **[regional]** plan, with implementation, monitoring and corrective action.

- A regional plan of hazard mitigation requires coordination and cooperation between the Tri-cities, including adjacent cities, counties and federal and state lands. We are all interconnected when analyzing the causes of climate change/disruption, whether we consider it natural or man-made. Implementation of hazard mitigations are interrelated within all these environments, as well. However, certain cities, such as Newark, have repeatedly claimed that addressing potential flood inundation rise associated with rising sea level, groundwater and flood waters "is an issue beyond the scope of Newark's capabilities to address, because it is a regional issue and requires regional solutions."

  Planning decisions made by the City of Newark on low-lying lands subject to flood inundation, could result in impacts at the regional level, as our shoreline is interconnected and nature does not ***recognize the artificial boundaries that have been drawn on our maps****.*

- The relative connectivity means that what any one city does, regarding development or sea level rise mitigation, can affect adjacent cities, and beyond—as scientific evidence has revealed the world over.

- Further evidence from the BCDC, MTC and ABAG's joint report, as addressed in the LHMP, references the economic impacts of providing sea level rise adaptation for existing development/infrastructure/communities, which is estimated at $110 billion dollars, needed by 2050. This figure is likely to be an underestimate.

  In addition, the analysis did not include the impacts of fluvial flooding that is also exacerbated by climate change. Furthermore, sea level rise data

and maps are already outdated and require updating to present day, with added correction towards future projections.

3. REGIONAL CONNECTIONS--SF BAY NATIONAL WILDLIFE REFUGE:

The SF Bay National Wildlife Refuge must be incorporated into part of the integrated hazard mitigation plan, at least because of the present threat of fires and atmospheric river floods, as we have already experienced in Mayhews Landing, just last year. The details of the actual occurrence and the activity to extinguish the fire in Mayhews Landing was also described int the LHMP report, with a color picture of the intensity of the fire at its worst. The fire occurred near the old silo to the north of Mayhews Landing. More pictures and evidence of the fire are available, also reported in numerous locations in the press.

- The Refuge Complex, as discussed in the LHMP meetings, is geographically included in the Tri-cities LHMP plan. The Refuge was considered to be important, due to their possession of interconnected and adjacent lands that can experience potential disasters that could affect surrounding lands, such as the Tri-city area. Refuge flood control, in cooperation with Alameda Flood Control District, occurs through dredging, levee and flood-gate management, along with Baylands enhancement, publicly funded, which are a few examples linking the Refuge to our Tri-cities. Refuge lands also provide an immeasurable monetary, social and nature-based return on our investment through public access, our enjoyment, and benefits to other life-forms, such as wildlife and their habitat.

- The SF Bay National Wildlife Refuge clearly has regional boundaries, but has immediate connections to other adjacent lands, through flood drainage and sediment transport from tributaries and streams, and through flood gates that connect to the SF Bay. Newark is in close-proximity and within direct connectivity to the SF Bay National Wildlife Refuge. However, notwithstanding, certain 'ancient', manually controlled tidal flood gates are separately maintained through jurisdictions including the Refuge, Alameda County or the City of Newark. Hence, the need for cooperative indulgence.

Hydrology now becomes an important factor to address in the mitigation hazard assessments because of storm-front extremes. Drainage ditches and streams that empty into the Bay have the potential for sediment clogging due to the rapid influx of flooding from atmospheric river storms. The Refuge, in concert with the Alameda County Flood Control , the

affiliated agency, should monitor these drainage ditches for inspection, mitigation, dredging and other potential impinging factors.

- Awareness of sediment problems was inspired because an attendee of the last LHMP meeting on January 24 described the previous creek-sediment that overflowed into a residential area in Fremont, as related to atmospheric river storms and sediment movement from the creek. Other areas of the county are also having the same sediment problems, where USFWS is expected to be involved, as well.

  A REGIONAL plan should be all inclusive of the Tri-cities areas that connects with adjacent lands such as the Refuge Complex. The regional plan of LHMP hazard response should implicate private properties and structures as well as Refuge lands and their influence.

- In addition to flooding, mitigation of the threat of **wildfires** has been discussed in the past with the Refuge, because actual wildfires have periodically occurred over the years. Private property insurance, FEMA flood insurance and Refuge lands are items not discussed in detail in the LHMP—considering the state of insurance companies and their reluctance to ensure properties against growing disasters. Identification of hazards, risks and potential mitigation measures must be coordinated with the Don Edwards San Francisco Bay National Wildlife Refuge. Coordination should be with the DESFBNWR, because the complex is beyond the boundaries of the TCLHMP, and we should consider adding EBRPD.

- Alec Tune from Fremont sent out an email on Jan. 31 referencing the draft plan and to submit comments. He was to contact Don Edwards San Francisco Bay National Wildlife Refuge about the Plan, especially regarding immediate threats of **wildfires and flooding** from atmospheric storms—the 2023 fire on the Mayhews Unit of the Refuge connecting to Newark is a recent example, as cited in the LHMP. All agreed in the last meeting that the Refuge should be involved, as they are connected with all our other surrounding activities.

4. ENVIRONMENTAL INFLUENCE ON DEVELOPMENTS:

During the last Jan. 24 meeting for the new LHMP for 2024, the final handout had some quotes such as: "… mitigation to reduce or eliminate long-term risk to human life, property and the **environment** from hazards".

Within the confines of CEQA, we can argue **effects of new developments on the environment, which disregards references to peer-reviewed science**. On the contrary, the LHMP now cites our need to take action on the **effects of environment**

on both new and existing developments, also allowing for citations and references on peer-reviewed science.

- We must circumscribe new and existing developments with this level of awareness regarding the threats of accelerating climate change and potential disasters--rather a circular argument, demonstrating that ***developments can impact the environment, and the environment, in turn, can impact the developments***.

  *Developments that implicate mitigation strategies, now and in the future, must realistically stress the effects of "**on**" and "**from**" the environment.*

5. EXAMPLES OF ENVIRONMENTAL INFLUENCE:

Most important, the LHMP must consider "Total Water Level", which incorporates estimates of sea level rise, groundwater rise and storm events (usually the 100-year storm event), when evaluating impacts on new and existing developments. For the application of the LHMP, total water calculations are a more reasonable approach toward projecting the reality of inundation from water hazards. GIS mapping, as utilized in the LHMP, should encompass the hydrology of **Total Water Levels** for a more realistic estimate of sea level rise that should be coupled to ALL other contributions from the **Water Cycle**.

- Google the Water Cycle and view numerous, colorful 1-page illustrations of the influence of water on our environment—used for grade school educational tools by many generations, previously hand-drawn illustrations, now extensively digitized. As an example, you can begin to understand how warming oceans are being supercharged for evaporation, producing climate extremes, both on the ocean and on the land. Vapor storms (hence the terms atmospheric, sky river), followed by flooding of inland areas, are literally transferring the ocean into inland flooding, our most immediate threat, above that of just sea level rise.

  Consequently, we are experiencing flooding from both directions: inland from vapor storms moving towards the sea and from continual sea level rise that pushes towards us at the shorelines (adding to storm surge, ground water rise, subsidence and other forces of nature).

- Total water level should encompass and be all-inclusive in sea level rise maps, to demonstrate the additive and collective forces from all significant sources, such as flooding from sea level rise itself, storm surge, over-topping, groundwater intrusion/upsurge and the immediate influx from atmospheric storms, to name some of the most threatening activities.

Incorporation of the flood inundation impacts of total water level into city planning efforts is crucial to reducing risk for existing and future residents, development and infrastructure. We must upgrade our hazard-level and sea level rise maps to include total water level, to incorporate most recent data on sea level rise that is continually updated.

- **Unexpected Surprises**:

New, unexpected surprises surface to our attention and awareness as unforeseen forces of nature are magnified by climate disruption and can no longer be ignored. Consequently, extremes in climate activity are spread over a broad spectrum, where, for example, atmospheric storms and flooding foster the evolution of new growth of species of flora and fauna, replacing those that were previously stressed from high temperatures and drought from lack of water. Vulnerable existing species have been shown to become threatened and some have become extinct at an alarming rate.

Flooding and raging wildfires are becoming the new norm over the wide spectrum of extremes. Our system of climate activity becomes *autocatalytic, which self-feeds into a circular, irreversible course that enhances and amplifies itself into more progressive accelerating extremes.*

- **A more recent surprise: example of looming evidence in the US, as scientists warn of looming 'ecosystem collapse' in Louisiana's wetlands.**

"Rapid sea level rise could cause the loss of three-quarters of Louisiana's coastal wetlands — the state's natural buffer against hurricanes and storms — by 2070, new research shows. Read in The Washington Post: https://apple.news/AqfII2C-YQ8aeSIajQfpT7g, By Brady Dennis and Chris Mooney. Updated, Published February 15, 2024.

"The new research documents how a sudden burst of sea level rise over the past 13 years — the type of surge once not expected until later this century — has left the overwhelming majority of the state's coastal wetland sites in a state of current or expected "drowning," where the seas are rising faster than wetlands can grow."

The looming threat on Louisiana wetlands is one isolated example, similar to environmental stresses being experienced in other shoreline and wetland environments. Certainly, the SF Bay Area is victim to these same forces of nature and has had numerous registered impacts and reports, with publications of warnings, revealing continued expectations of even greater risk.

- ***Statistical Facts of Interest*: homo sapiens, as related to other life on Planet Earth (Scientific American, January 2023, by Barbara Ungar:**
-

Humans comprise a mere hundredth of a hundredth of the living, 0.01%.
*Half of Earth's **creatures have vanished** in the last half-century while we've redoubled."*
*"Even half-gone, **plants** outweigh us seventy-five hundred to one",,,but only for now.*

…And so..., the growing presence and expected future impact of homo sapiens on the planet continues its devastating march, despite the overwhelming size and influence of the complex of all other life forms--other than human."

6. MITIGATION--MEANING AND INTERPRETATION:

Future developments in the Newark Annex Plan were only referenced with proposals for additional housing needs, with cursory discussion about adhering to recommendations in the LHMP, with *no specific plan of action to actually address risks.* References toward protecting wildlife and their habitats, also under threat, were only a side-lined generic inference.

- Throughout the LHMP, nature-based solutions/mitigations were mostly ignored or generically addressed in relation to sea level rise, flood and wildfire issues. Nature-based solutions must not be ignored by Newark and must not become moot, avoiding the impacts of those new developments on existing properties and their structures.

- An inciteful and applicable comment from Britain's King Charles III, urging rapid environmental repair in COP28 speech in 2023:

"*Unless we rapidly repair and restore nature's economy, based on harmony and balance, which is our ultimate sustainer, our own economy and survivability will be imperiled."*

- In retrospect, an action item in the LHMP is to include and stress the approach towards restoring and sustaining a nature-based economy of harmony and balance, and to prohibit developments in undeveloped low-lying Baylands.

7. NATURAL HAZARDS AND HUMAN-CAUSED—STATE OF THE LHMP

LHMPs are stated in the plan to "focus on natural hazards and NOT human-caused." However, the term "*human-caused*" has a broad range of interpretations. Applying the interpretation of natural hazards and human-caused, to the LHMP:

I believe evidence has demonstrated that the totality of human-caused hazards, intentional or accidental, must include the additive anthropogenic effects (human influence on the environment) that contributes to hazards associated with climate change and its extremes. Natural-caused and human-caused have become inseparable in the current environment.

- Sea level rise, storm surge, warming oceans and atmospheric storms are a few examples of the contribution to human-caused activity. Otherwise, we would err in calculating the most important contribution to climate disasters if we circumvented our anthropogenic influence.

In retrospect, human history demonstrates that we are the cause and major source of climate disruption, primarily from the influx of the industrial era. Our over-arching impact on the forces of nature has generated a progressive immersion into a "victim reality", for us and all life--self-created by anthropogenic climate disruption.

8. THE NEWARK PLAN AND ITS LHMP:

Newark is most unique because it faces potential hazards both from floods and fires. As previously discussed, the Refuge has lands adjacent to and directly impacting Newark, creating a hydrologic system of wetlands that are vulnerable to sea level rise, storm surge, floods and fires.

- The cities of Newark and Union City has proposed **17** actions for mitigation. All items listed were at the early stage and very generic, with no specifics, yet. No actual specific actions for SLR or climate change mitigations.

However, as stated in the mitigation documents, ultimately, the City has the option to adapt or ignore our recommendations and concerns—a condition that is too flexible and rather alarming to most of the public.

The updated new 5-year FEMA plan is to add to the outdated 2013 FEMA recommendations more specifically-- addressing the current state of climate change. New regulations, ordinances and laws must

be adapted by agencies and cities to mitigate for these new recommendations—and the requirements for FEMA funding.

- Numerous concerns have been voiced and published regarding the risk of developing in sensitive areas exposed to sea level rise, flooding and inundation. Encroachment of developments that are marching towards the Bay, in and around wetlands, is raising awareness and demanding protection and enhancement of these wetlands. We found sources of agreement in the last LHMP meeting that it was an important item, in particular, with the proposed housing developments in Newark.
- Nature-based solutions, with wetland enhancement, not residential development in vulnerable areas, was discussed in the LHMP meeting. The CA OES is most emphatic about recommendations. The LHMP goal is to protect all assets, such natural resources and cultural.

- Within the LHMP document, in Tables and Maps, as quoted:

  "*Table B-25 shows the counts of each future development area in the City by Sea Level Rise Scenario. The area with the most vulnerability to sea level rise will be in the southern portion of the City, adjacent to the San Francisco Bay. Sea level rise not only affects housing, but other infrastructure such as roads, water and sewer infrastructure."*

- Hence, developments in vulnerable areas would also put roads, water, sewer, gas electricity, and other necessary infrastructure at risk.

  However, Alameda County Flood Control & Water Conservation District (ACFC&WCD) did not participate in the LHMP. This is a glaring omission in a multi-jurisdictional plan addressing flooding.

- Page 4-105 of the Newark Annex document, amongst numerous other citations, explained in the "Vulnerability Assessment" that "vulnerability is high." "Assets at risk from coastal flood and sea level rise include people and populations; structures; critical facilities and infrastructure, and community lifelines; natural, historic, and cultural resources: and economic assets and community activities of value", as discussed in their following sections.

  Comment: The Newark Annex sections addressing impacts, such as sea level rise, for the present and future are already outdated and must include more recent projections. Therefore assets, both natural and cultural, must be evaluated with recent data for protection and enhancement on a grand scale—all encompassing.

Discovery: Reviewing some of the LHMP documents and the Newark-Annex-Hazard Mitigation Plan:

Based on maps and tables provided by consultants in the LHMP, we can address sea level rise (SLR) and related hydrologic impacts. This section primarily addresses sea level rise and flooding.

Proposed future developments from the Newark Annex Plan document:

- Page B-30, "The City has 28 sites it anticipates will be developed in the next 5 years, according to the Plan." Newark states that "future developments should be sited in areas that are away from known hazard risks". Page B-60, Newark provided 28 future development areas, mapped on the GIS. Figure B-19, Figure B-20, and Figure B-21 show the locations of the future development areas overlayed on the CoSMoS Sea Level Rise Scenarios.

- As noted in the Newark report, page B-61, no [future] development areas fall in the [existing] conditions (tidal and storm) scenarios. Although the document claims that future developments do not fall into existing conditions, B-20 and B-21 maps show significant SLR from one- and two-meter rise, as expected in the future. And at the same time, SLR scenarios have been currently updated and need to be incorporated to provide the present conditions for SLR, for now and in the future.

  The SLR data does not adequately take into account most recent and current impacts of rapidly accelerating climate change/disruption, both herein and throughout the world. (See also IPCC references, Cal OES mitigation plan for 2023, etc.)

  Furthermore, we are not successfully mitigating the anthropogenic impacts of climate change. A variety of newer evolving discovery of scientific and oceanographic data demonstrates that accelerating climate change is continually progressing and dwarfing any efforts to mitigate, exacerbated by interference from objectionable sources such as climate deniers. Evolving data is to be published for public and governmental review, to adapt into the plan for sea level rise scenarios.

- In the Newark Annex, "Table B-25 shows the counts of each future development area in the City by Sea Level Rise Scenario. The area with the most vulnerability to sea level rise will be in the southern portion of the City, adjacent to the San Francisco Bay. Sea level rise not only affects housing, but other infrastructure such as roads, water and sewer infrastructure."

- In building in Area 4, the city is removing a rare opportunity to provide resilience for the existing community to flood inundation, and avoiding the potential risk of

increased flood risk for adjacent communities if the lands are protected instead of developed.

Outer region proposed developments, more vulnerable to SLR:

- More vulnerable developments, according to consultant's maps provided (see Table B17, page B-33). Adding to SLR, we must include storm surge, levee and creek bank over-topping, atmospheric river storms, and rising/infiltration of groundwater. (Newark: "Heavy rains and storms--highly likely", page B-175).
    - Mowry Village, page 5-23 = 203 units.
    - Sanctuary West page B-34 = 469 units

      Total = 672 (vulnerable units).
- Much of the city of Newark is at topographic low elevations, and in vulnerable locations experiences flooding. As an example, a proposed development in Newark's Baylands, of over 200 houses, lies in a vulnerable area, which is surrounded on three sides by wetlands, creeks and open space, and is within the Newark Area 4 floodplain. Development and retention of existing wetlands have been proven to be nature-based environments that can protect against flooding and sequester and store carbon to mitigate climate change.
- Building pads raised to mitigate sea level rise, groundwater rise and flooding may temporarily protect those developments, but they will be short-lived. We must ask, what about the impact on lower elevations of roads, infrastructure, water, sewer lines and power that projects like the proposed Mowry Village will depend upon? Flooding and groundwater rise will inundate roads, other properties and structures that are submerged by the flooding, thus creating island communities such as a "Mowry Village Island" that simultaneously may not have any access in or out.
- Controversial land use of Newark's Area 4, as designated on the City's maps, has been continually disputed over the years by many organizations, regulatory agencies and local residents. As an example, the Area 4 of Newark is designated a regional conservation priority for San Francisco Bay in: The Baylands and Climate Change: What We Can Do. Baylands Ecosystem Habitat Goals Science Update 2015[1], and by the Recovery Plan for the Tidal Marsh Ecosystems of Northern and Central California[2].

[1] California State Coastal Conservancy. 2015. The Baylands and Climate Change: What We Can Do. Baylands Ecosystem Habitat Goals Science Update 2015. Oakland, CA.
[2] U.S. Fish and Wildlife Service. 2013. Recovery Plan for the Tidal Marsh Ecosystems of Northern and Central California.

Inner city area developments in Newark:

- Newpark Mall page B-34 is proposed for 1000 units within the built environment of the city is more climate resilient instead of developing vulnerable, future high-risk areas near the Bay.

For above development areas, alone, the total is 672+1000 = 1,672.

- The "expectation" from Newark development is that mitigation can be effective and completed in time to keep ahead of accelerating climate change and SLR. However, based on current science, these developments would have a finite end-of-life, likely, sooner than expected. Consequently, the best scientific alternative to protect Newark against SLR is to utilize nature-based solutions, such as wetland expansion and enhancement--rather than sacrificing those areas to risky housing developments that will disturb the integrity and resilience of the wetlands. Because ocean temperatures are increasing, we can expect more climate/weather extremes in intensity and volume.

Current costs of property:

Economic cost, coupled with risk of property and loss of life becomes a future threat when we build housing in vulnerable areas such as Newark Area 4's proximity to wetlands and the SF Bay.

- **Existing costs:** Page B-18: "This section looks at the parcels (and associated structures) that make up the built environment of the City. The data from the Alameda County Assessor's Office is based on the 2023 Assessor's data provided by the City of Fremont GIS and includes the associated parcel layer." Parcels and structures, total value for Newark appears to be about $5.8 billion for existing properties.

- **Future costs**: Does not take into account current, updated values of units and land. Rising property insurance must be additive, as well. Regarding future developments, they should include estimated values, factoring in inflation, for the expected minimum 5-year completion of the proposed future of new units. Many of the proposed units in Newark Area 4 will be at greatest risk of financial loss because of their vulnerable location, closer to the Bay and wetlands. Evaluating existing and new, future developments in the Bay Area needs to include all these risk factors.

FEMA Regulations:

- The FEMA, February 13, 2013 document provided in the LHMP is outdated, but is currently being updated for the next 5-year plan. Nevertheless, the 2013 FEMA

document, in Local Planning and Regulations, emphasizes the risk of new developments placed in harm's way (pages 56 to 58). In SS-7, Protect and Restore Natural Buffers, where natural resources provide floodplain protection…to mitigate storm surge risk.

- The FEMA document, "Mitigation Ideas", of 2013, already outdated, as included and referenced in the LHMP, at least provides some generic suggestions for mitigation of potential hazards from sea level rise. Reference page 41 states:

"SEA LEVEL RISE

Local Planning and Regulations

SLR-1 Map and Assess Vulnerability to Sea Level Rise

SLR-2 Manage Development in High-Risk Areas

Local governments can mitigate future losses resulting from sea level rise by regulating development in potential hazard areas through land use planning, including:

- Using zoning, subdivision regulations, and/or a special sea level rise overlay district to designate high-risk areas and specify the conditions for the use and development of specific areas.
- Promoting *conservation and management of open space, wetlands, and/or sea level rise boundary zones* to separate developed areas from high-hazard areas.
- Prohibiting the redevelopment of areas destroyed by storms or chronic erosion in order to prevent future losses.
- Encouraging compact community design in low-risk areas.
- Establishing *setbacks in high-risk areas* that account for potential sea level rise."

Additional FEMA recommends user SLR-1 Map and Assess Vulnerability to Sea Level Rise:

Using GIS to map hazard areas, at-risk structures, and associated hazards (e.g. flood and storm surge) to assess high-risk areas.
Adding future conditions hydrology and areas that may be inundated by sea level rise to Digital Flood Insurance Rate Maps (DFIRM).

- We are urging the actions above to be incorporated into the LHMP and the respective annexes.

The updated new 5-year FEMA plan is to more specifically add to these recommendations, addressing the current state of climate change. New regulations, ordinances and laws must be adapted by agencies and cities to mitigate these new impacts.

9. PROGRESSIVE WORLDLY EVIDENCE:

Updates on climate change and its impacts are published continuously, as evidence reveals that climate change is indeed accelerating faster than expected, and the impacts of catastrophic floods, wildfires, heat domes and storms are being felt much sooner than predicted.

- Previous climate projections have become rapidly outdated, as climate change has accelerated faster than the slower-moving publication of academic scientific studies and reporting that have not been able to keep pace and report current results. Expectations that were once considered as being far into the future, are now being considered more realistic and relevant to planning, revealing potential catastrophic and alarming consequences, which could occur sooner than expected. We can no longer accept the ignorance of climate denial, as the science provides more than enough evidence of the inexorable advancement of the climate's potential for environmental peril.

- Added to these extremes is flooding from increasing and expected atmospheric (vapor, sky-river) storms, due to warming oceans, which are already in progress throughout the world, as global climate change is advancing inexorably.

- Oceans are absorbing most of the energy from atmospheric heating (greenhouse gases) and are becoming "supercharged", thus increasing surface water vapor pressure that is causing the evaporation of voluminous amounts of water from the oceans. Increasing cloud density and storm intensity over the oceans is then recirculated and transferred inland, condensing in cooler areas into "falling rivers", dropping torrential rains into vulnerable inland areas.

- Ocean warming is primarily driven by greenhouse gasses, such as carbon dioxide, which contributes to the overall warming of the planet. Carbon dioxide is continually rising above the 400 ppm level, to move past the tipping point. Other gases such as methane, even worse, are also on the rise, creating a greater contribution to over-heating. Numerous reports throughout the scientific literature, such as IPCC, NOAA, Ocean Protection Council, etc. reveal that global warming is continually releasing additional methane to the atmosphere. Furthermore, the chain of oxidative reactions of methane (CH_4) breaks methane down to produce carbon dioxide (CO_2), still adding to greenhouse gasses in the atmosphere. Included with methane, there is a myriad of other environmental pollutants, man-made, that are contributing to global atmospheric and ocean warming. The result has been linked to poor overall health of the planet and its life.

- We have been witnessing the alarming speed of increased flooding from atmospheric storms all over the world, in unexpected locations, leaving them unprepared and with little time to respond. Loss of property, infrastructure and [all forms of life], already are set in motion. Extinctions of terrestrial wildlife and ocean life commences, including migratory birds and insects such as pollinating bees, to name some of the more important threated species.

  And we are most vulnerable, due to our proximity to the Bay and Pacific Ocean, exposing us to direct impacts.

Solutions to risks—nature-based:

Other cities and counties are starting to address mitigation measures regarding sea level rise and flooding, with nature-based solutions-less expensive in the long-term and far more resilient for long-term protection than hard structures or hasty attempts to temporarily mitigate hazards in the present.

- Newark, as a prime example, has a long history of designating areas adjacent to the SF Bay, which consist of vulnerable lowlands, wetlands, marshes and salt ponds, for development. Outer lying areas are dangerously at risk to sea level rise and other related climate calamities.

- **Newark** could follow suit and ***set an example, an adaptive approach to*** address the identified potential hazards, by implementing nature-based solutions within its outlying areas (restore tidal wetlands and create wetland protections) through amendments to zoning and ordinances. Emphasis should be placed on wetlands, which will act like a sponge during flooding and can protect other areas of existing low-land developments--much of the existing City of Newark, as well as low-lying undeveloped areas adjacent to existing wetlands that can serve a tidal wetland migration pathways. Restoration, enhancement or creation of wetlands through sediment accretion, as sea level rises, can provide increased protection and resilience for the community, with the added benefit of expanded habitat for SF Bay wildlife and migrating waterbirds. Clearly, coordination with Refuge must occur and be integrated into any proposed resilience plans.

  *Remember that we have **lost at least 90 percent of our shorelines** in the Bay Area since the industrial revolution. Any amount of restoration or creation of new wetlands becomes a significant benefit to the survival of both humans and wildlife.*

- Tidal marsh restoration is the fastest and cheapest mitigation measure to implement to minimize our carbon footprint. Newark could immediately implement tidal restoration to offset the carbon Newark residents are emitting into the atmosphere every time we hop in a car to consume and consume and turn on our

appliances to heat and cool our homes. The environmental caveat to climate science is that tidal wetlands can sequester and store more carbon than tropical rainforests, despite the advancement of illegal removal of rainforests (e.g. Amazon, not the corporate delivery system).

- We have witnessed extreme flooding throughout the world, followed by destruction of structural and infrastructural developments. Failure of existing flood protection can introduce toxins and trash from structures and contaminants from infrastructure that flow into nearby waters, thus affecting life in surrounding areas—another reason to implement restoration and wetland protections, rather than develop in vulnerable areas.

- An alternative to sprawling development into vulnerable lands, near the Bay, is to create **high-density housing** in the core of the city. Retain areas close to the Bay as **buffers** to sea level rise and flooding. The recent built congested housing developments in Newark also have produced minimum, limited parks and open space for the population, which exemplifies the need for conveniently accessible park lands to improve the quality of life for all residents.

- Residents have been invited to contribute to the update for the 2017 Newark Citywide Parks Master Plan, for future park planning and development. Parkland, as proposed by the Areas 3 and 4 Specific Plan, provides needed park space for the increasing population, and at least allows for the potential of future restoration of the lands into wetlands, thus providing climate resilience for existing properties, structures and infrastructure. **Conversion to wetlands**, rather than building housing that will sprawl into areas at risk of future flood inundation is needed for climate adaptation and resilience for the community of Newark.

Affordable Housing: Linked to mitigation hazards, needed [affordable] housing, can be emphasized with climate-smart development within the core of the city, avoiding degradation of sensitive surrounding lands.

10. STATE OF NATURAL AND HUMAN-CAUSED HAZARDS:

During the industrial revolution, human expansion and growth has generated an unexpected effect of humans on climate and on the planet, despite the propaganda of continued climate denialism. Currently, we know that we can no longer separate **"natural hazards" from "human-caused"** because of the *evolution and immersion of anthropogenic impacts* that blend into and add to natural-caused hazards, throughout the world.

Scientific evidence: Revelation of the cycle of reproduction and growth, death, and even extinction, as an inherent property of all life, including that of humans. ***Climate change, a symptom****, is no doubt contributing to this cycle of existence as we have seen in worldly reports--our anthropogenic contribution.*

- Overpopulation of a species from over-consumption of its available resources, such as food and water, concomitant with the by-products it produces, eventually can morph into the demise of the species. Disease typically follows and overtakes the species, as it competes for resources with each other, as well as other surrounding life.

- Following the depletion of resources, starvation and disease, population reduction commences, which in extreme cases can eventually trigger extinction—a path that many species have already followed, reinforced by climate disruption and forced migrations. Unfortunately, human over-population, over-consumption and pollution, coupled with interference with this cycle of evolution has imperiled the existence of many other species--to the point where we are entering the *sixth mass extinction*, to add to the prior extinction cycles throughout the known history of the earth.

  The process of species survival is engrained in the genetic DNA of evolution, from the smallest microorganism to the largest mammals, including human species. Many have come and gone, and many continue to exist or have gone extinct over time. Scientific consensus is that over 95 percent of life on this planet has gone extinct over the known period of life on the planet since life began.

- Desperate for survival, population and resource stress has contributed to inevitable competition between species. Wars waged by humans, through their 'intelligence' to develop technologic advantages, have been utilized to acquire and overtake lands and resources. Thus, migration of species is an outcome in the quest for safety and survival into potentially sustainable territory, at least for basic existence.

- Growth and human overpopulation have unfortunately evolved into a state of worldly interference, fostered by the ecological forces of climate disruption. "Too many people and not enough resources (space, housing, food, water, etc.) is the **cause** and the crux of our growing problem for existence of all life on the planet, including the human race. Yet, we mostly avoid the cause, us, and our population growth, with the excessive consumption and the pollution that follows, ignoring and

suppressing the haunting reality that is forcing us to continually pay the price, both economically and ecologically.

- Instead, most of us, and the media, still focus on **symptoms** of population expansion, reproduction, and growth, coupled with the disinformation, masked by mythical beliefs, and political and traditional religious propaganda. The goal is to attempt to manufacture self-deceiving excuses to override and suppress the cause of climate disruption, contributing to the destructive impact to the planet.

- We will never correct the threats if we don't focus on, at least, minimizing and controlling our population expansion and its incursion into vulnerable areas and habitats of the world, including much of the land, air and the sea that encompasses the planet. However, evidence demonstrates that exposure of the human cause of climate disruption to the public, as fact, can generate an immediate over-reaction and knee-jerk response of fear and anger, triggered by the threat of having to confront and consciously change our lifestyle and beliefs. Thus, the courage to change becomes difficult for most people.

- Nevertheless, we can believe what we want, but if people want to confront the issues, we must at least take action and, above all, inspire and encourage public support to transform our economy and environment to a sustainable system for all life on the planet. It starts from the ground up, from grassroots efforts and local evidence-based information and education, emphasizing the importance of science in our quests.

- *We need a two-pronged approach where we address and correct:*

  *(1) the environmental impacts of population expansion, the **cause**, and*

  *(2) the resultant impacts on nature that produce the environmental **symptoms** of population growth. Focusing on the symptoms, solely, has inspired a response to mitigate the hazards, which are the symptoms, while ignoring the most problematic causes.*

- Consequently, we must confront our beliefs and nurture conscious awareness, with analytical critical thinking to make the transition. If we could all collectively take our families and relatives, hand-in-hand, stand in front of a giant virtual mirror and say:

  *"**We are the cause and the problem**. And now it is time to take corrective action to adapt and 'mirror' the dictates and needs of nature—to do something*

significant, mitigating and even correcting our deleterious impact to all life and the health of the planet".

- Otherwise, we will likely become engulfed in the peril of the sixth mass extinction, with the possibility of never returning or evolving out of a scorched earth, on an irreversible path similar to that of the evolution of the Martian environment."

Sincerely,

Wayne W. Miller
Newark, CA

Comment 16

From: Alexander Buga <alexander8buga@gmail.com>
Sent: Friday, February 16, 2024 9:49 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Subject: Tri-City Local Hazard Mitigation Plan

Hi Jeanine,

I live in Newark and I own a home in Newark. Here are some comments with regards to that Actions. See below.

Fremont Action 28: it's better to not allow building housing in the area where there is land slide Hazard.

Newark Action 7: Add to the Sea level rise resiliency plan to stop building new housing at the areas of sea level rise.

Newark Action 14: I believe replacing Eucalyptus tree should be done with minimal impact to wild life. Namely, these large mature trees are home for big bird like vultures and egrets, and also small bird like huminbirds where they get food, and shelter. My concern with young tree is that many of them will die before they get mature and it could be waste of money. Also it takes a decade for a tree to become big enough so the birds can shelter there.

Union city Action 15. It's better to stop or not allow building new housing in liquefaction areas.

Newark Action 2 Multi Hazard public education on how to build communities that can coexist with nature, and also protect natural resources.

Fremont Action 9 Multi Hazard public education on how to build communities that can coexist with nature, and also protect natural resources.

Union city Action 2 Multi Hazard public education on how to build communities that can coexist with nature, and also protect natural resources.

USD Multi Hazard Action 1 public education on how to build communities that can coexist with nature, and also protect natural resources.

Regards,
Alexandr Buga

Comment 17

From: C/H High <howardhigh1@comcast.net>
Sent: Friday, February 16, 2024 11:32 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Cc: Jana Sokale <janaSLC@aol.com>; RicardoM@UnionCity.Org; atune@fremont.gov
Subject: Comments submitted on behalf of the Citizens Committee to Complete the Refuge regarding the Tri-city Multi-jurisdictional Local Hazard Mitigation Plan and Annexes

Dear Ms. Foster,

Please find attached comments submitted on behalf of the Citizens Committee to Complete the Refuge (CCCR) regarding the Tri-city Multi-jurisdictional Local Hazard Mitigation Plan and Annexes.
Thank you for the opportunity to provide comments.

At your convenience we would appreciate acknowledgement of receipt of this email. We also request that we be kept informed of any future opportunities to review and comment on the LHMP.

Respectfully submitted,

Carin High & Jana Sokale
CCCR

A 10 page pdf was attached and is included below.

Citizens Committee to Complete the Refuge

P.O. Box 23957, San Jose, CA 95153 Tel: 650-493-5540 Email: cccrrefuge@gmail.com www.bayrefuge.org

Comments submitted via electronic mail

Fremont Fire Department
Office of Emergency Services
3300 Capitol Avenue, Building "A"
Fremont, CA 94538
Attn: Hazard Mitigation Plan
jeanine.foster@fostermorrison.com

16 February 2024

Re: Draft 2024 Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan

Dear Ms. Foster,

These comments are submitted on behalf of the Citizens Committee to Complete the Refuge (CCCR). Thank you for the opportunity to provide comments regarding the Draft 2024 Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP). We commend the three cities and agencies that have come together to collaborate in the development of the LHMP. Natural hazards certainly do not recognize artificial boundaries such city boundaries, and actions undertaken by one city or agency, can have positive or negative impacts on neighboring communities. It is also fitting that the five annexes (City of Fremont, City of Newark, City of Union City, Union Sanitary District and the Alameda County Water District) have recognized the value of developing a joint LHMP to reduce the risks associated with natural hazards. The report does an excellent job of identifying the risks and vulnerabilities associated with the hazards present within the Tri-cities area. We thank you for the opportunity to provide comments on the draft plan.

The Citizens Committee to Complete the Refuge (CCCR), with a membership of 1,800, has an ongoing history of interest in wetlands protection, wetlands restoration and wetlands acquisition. Our senior members were part of a group of citizens who became alarmed at the degradation of the Bay and its wetlands. We joined together, and with the support of Congressman Don Edwards, requested that Congress establish the Nation's first national wildlife refuge in an urban setting. The process took seven long years and in 1972 legislation was passed to form the San Francisco Bay National Wildlife Refuge (Refuge). We turned to Mr. Edwards again, and in 1988 (the first year he submitted it), his legislation to double the size of the Refuge was signed into law. The Refuge now bears his name in honor of his efforts.

We have taken an active interest in Clean Water Act (CWA), California Environmental Quality Act (CEQA), Porter-Cologne Water Quality Act and Endangered Species Act (ESA) and California Endangered Species Act (CESA) regulations, policies, implementation, and enforcement. We are stakeholders on the San Francisco Estuary Partnership Implementation Committee, the San Francisco Bay Joint Venture, the

South Bay Salt Pond Restoration Project, and are on the Advisory Committee for the San Francisco Bay Conservation and Development Commission's (BCDC) Regional Shoreline Adaptation Plan (RSAP). We provided input for the 1999 *Baylands Ecosystem Habitat Goals* (and 2015 update), and the 2013 U.S. Fish and Wildlife Service's Tidal Marsh Ecosystem Recovery Plan. All these actions demonstrate our awareness of and deep interest in protecting the natural resources of the Bay ecosystem. The habitats of the Bay provide crucial ecosystem services that benefit the San Francisco Bay region and beyond. It is imperative that in developing mitigation strategies that will provide resilience for our communities, the adaptation measures proposed and implemented, recognize, and also protect the irreplaceable value of our baylands habitats.

Based upon our review of the Draft LHMP and the five Annexes, we submit the following comments that focus on the shoreline and are specific to the natural hazards posed by climate change and in particular coastal flooding and sea level rise, flood: (1% and 0.2% annual chance), flood: localized/stormwater associated with storm events and added in groundwater rise.

Goals and Objectives:

Goal 1 of the LHMP – We recognize the requirement of considering the impacts of natural hazards on the *environment* and *cultural resources* is a recent addition to the Federal Emergency Management Agency (FEMA) LHMP process. Goal 1 mentions preventing damage to the environment, however, none of the objectives speak to assessing or developing mitigation measures that would reduce or mitigate damage to the environment resulting from natural hazards. A new bullet should be added:

- Acknowledge that natural habitats can act as natural infrastructure that can provide community resilience to the impacts of climate change, and incorporate protection of these resources as an important mitigation strategy, into all aspects of community resilience planning.

Goal 2 of the LHMP – "*Provide protection and minimize impacts to critical facilities, infrastructure, and community lifelines. Create redundancy and reliability to significantly reduce risk of interruption or failure, minimize loss and the impacts of a disaster, and facilitate recovery.*"

- Natural habitats such as baylands habitats should be recognized as "*natural* infrastructure" and should be included in the development of mitigation measures that will "minimize loss and impacts of a disaster, and facilitate recovery."

Goal 5 of the LHMP - states that we should "Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards." This is highly commendable given the body of science that recognizes the importance of habitats like tidal wetlands and the breadth of benefits they provide our communities especially with respect to climate resilience. Such habitats should be considered critical natural infrastructure.

Goal 6 of the LHMP – states, "*Integrate mitigation principles and strategies into laws, regulations, policies, and guidance to promote cross-functional planning and regulatory initiatives and to support equitable outcomes to benefit the whole community.*" We heartily support this goal.

Consideration of the benefits provided by tidal wetlands should not be siloed off from on-the-ground strategies for resilience and risk reduction. A great example of the incorporation of tidal wetlands as a

resilience strategy is the City of Fremont's identification of baylands within the open space frame of its general plan – this achieves a number of mitigations simultaneously – protection of the environment and avoids placing people, development, and infrastructure in harm's way. We urge that similar risk reduction measures be included for the Newark and Union City annexes as well. We also encourage the potential opportunities for climate resilience, identified in the 2019 Shoreline Adaptation Atlas, be incorporated into these documents.

Identification of Natural Resources at Risk:

The mapping of natural resources provided in the LHMP and the Annexes, may significantly underestimate the extent of wetlands natural resources.

As an example, the list of wetlands habitat provided in Table B-2 of the Newark Annex (and Figure 4-9 of the LHMP) fails to include all the wetlands habitats that exist within Area 4, totaling approximately 253.18 acres of Section 404 CWA jurisdictional wetlands and waters (the area of open water may have been included in the LHMP mapping). These areas included open water, diked salt marsh, seasonal wetlands, freshwater marsh and brackish marsh – see the Table 1. below, extracted from the EIR for the Newark Area 3 & 4 Specific Area Plan:

Table 1. Biotic Habitat/Land Use Acreages in Newark Specific Plan Areas 3 and 4.

Biotic Habitat/Land Use	Acreage	Percent of Total
All Agricultural Habitats	**471.5**	**53%**
Upland Agriculture	269.3	30%
Agricultural Field/Seasonal Wetland (Saline to Brackish)	186.8	21%
Agricultural Field/Seasonal Wetland (Brackish to Fresh)	15.4	2%
Ruderal, Herbaceous Field	**134.0**	**15%**
Developed	**195.0**	**22%**
Aquatic	**38.2**	**4%**
All Marsh Wetlands	**42.7**	**5%**
Diked Salt Marsh	29.1	3%
Muted Tidal Salt Marsh	6.6	<1%
Freshwater Marsh	4.4	<1%
Brackish Marsh	2.6	<1%
Seasonal Wetland	**4.2**	**<1%**
Wrecking Yard Detention Basins	**1.2**	**<1%**
Coastal Scrub	**2.2**	**<1%**
Total (all acreages are approximate)	**889**	**100%**

Figure 4 – Tri-City Planning Area – Wetland Areas mapping is incomplete and misses many of the creeks and drainage channels within the Tri-city area. This map also inaccurately identifies the extensive salt pond complexes as "Lake" with the figure legend. The salt ponds must be differentiated from the freshwater lakes within the planning area. It appears that for the most part, creeks are not mapped in the LHMP base plan or the annexes, even though numerous flood risk and other hazards have been identified within the LHMP that may be associated with proximity to creeks. A map of creeks within the

LHMP area should be provided within the plan to facilitate the identification of locations that may be at risk and to facilitate consideration and implementation of appropriate mitigation measures to avoid or reduce hazards. The Oakland Museum of California has developed detailed mapping of natural creeks and manmade drainage channels within the Tri-City area. The map can be accessed at:

https://explore.museumca.org/creeks/WholeMaps/3_Fremont%20Creek%20Map.pdf

Creek mapping may also be available from the Alameda County Flood Control & Water Conservation District.

In addition, existing wetland mitigation lands should be mapped and included in the LHMP. Some of these mitigation lands include Plummer Creek wetlands, Mayhews Landing wetlands and Ohlone Community College wetlands in Newark, Warm Springs Vernal Pool Complex, Stevenson Blvd. wetlands and Stivers Lagoon Natural Area in Fremont to name just a few. All of these important natural habitats should be mapped in the LHMP. Mitigation lands are mapped through the EcoAltlas which is available at:

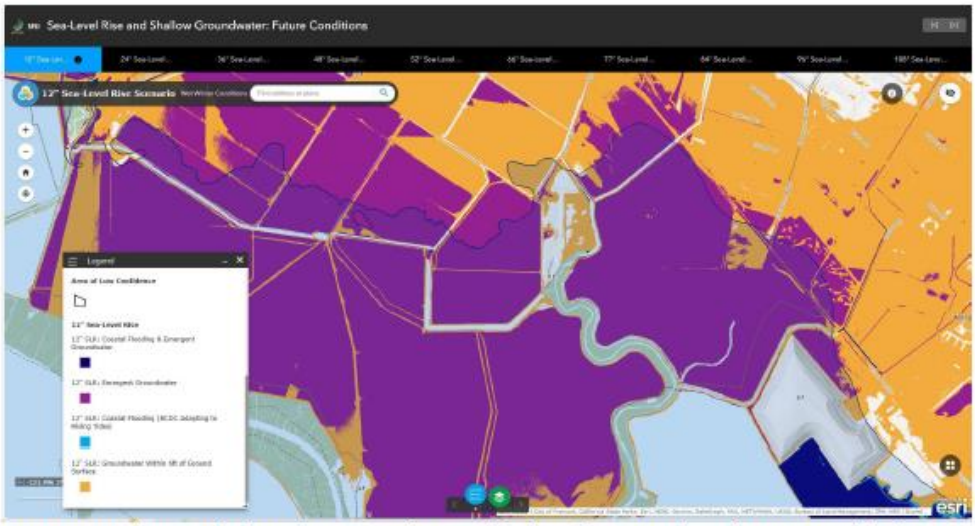
https://www.ecoatlas.org/regions/ecoregion/bay-delta

It would be useful to provide a table of all the natural resources within the LHMP area. List the names of all creeks and drainage channels, lakes, naturally occurring freshwater and tidal wetlands, wetland mitigation lands, etc.

Risk Assessment – Hazard Identification Assessment – Groundwater Rise

Rising groundwater is missing from the list of hazards impacting the five agencies. We believe this hazard should receive the same attention as those identified in Hazard Identification Assessment tables. Rising groundwater level in response to sea level rise, is a reasonably foreseeable phenomenon and maps depicting the potential for groundwater rise can been accessed through the Out Coast Our Future (*https://ourcoastourfuture.org/hazard-map/*). The San Francisco Estuary Institute (SFEI) has also mapped potential groundwater rise in response to sea level rise. The SFEI mapping of groundwater rise under differing levels of sea level rise can be explored at: *https://sfei.maps.arcgis.com/apps/instant/portfolio/index.html?appid=2ab0c998497f4f7398aa54f176a6fb26*

The map below depicts the potential for groundwater rise with 12" of sea level rise along the Newark bayfront as one example of the extent of this hazard.



Rising groundwater also has the potential to amplify liquefaction and resulting ground shaking in the event of an earthquake. May et al[1] authored a report focusing on the response of shallow groundwater to rising sea levels. One of the issues discussed includes the impacts of groundwater rise on liquefaction:

> "The areas most at risk of liquefaction are generally located along the Bay shoreline and Bay tributaries in former floodplains, marshplains, wetlands, mudflats, and open water areas that were filled for development (Witter et al., 2006). These same areas are at risk of rising groundwater, and as the groundwater table rises, the liquefaction risk is likely to increase (Grant et al., 2021; Quilter et al., 2015; Risken et al., 2015)." [emphasis added]

Dong et al[2] state:

> "The degree of saturation is a decisive factor that influences the liquefaction potential. With the rise of sea levels, the groundwater level may increase in some coastal areas, causing unsaturated sand soil and silt layers to become saturated. In this case, the effective stress of the sand would thus decrease, leading to an increase in the excess pore water pressure, which is needed to achieve a liquefaction state [95,96]. For this reason, areas with higher groundwater levels are more easily liquefied compared with areas with lower groundwater levels when they experience the same-intensity earthquake. Sea-level rise can influence underground water levels in two ways. Firstly, when sea levels rise, the water head of underground water to seawater decreases, thus leading to an underground runoff decrease. Second, sea-level rise also increases the intensity of tidal action in estuary areas, which also decreases the underground runoff. When the

[1] May CL, Mohan A, Plane E, Ramirez-Lopez D, Mak M, Luchinsky L, Hale T, Hill K. 2022. *"Shallow Groundwater Response to Sea-Level Rise: Alameda, Marin, San Francisco, and San Mateo Counties."* Prepared by Pathways Climate Institute and San Francisco Estuary Institute. doi.org/10.13140/RG.2.2.16973.72164

[2] Dong, L.; Cao, J.; Liu, X. *"Recent Developments in Sea-Level Rise and Its Related Geological Disasters Mitigation: A Review."* J. Mar. Sci. Eng. 2022, 10, 355. *https://doi.org/10.3390/jmse10030355*

tidal level surpasses the underground water level, a great deal of seawater flows back into the underground water and increases underground water levels."

And:

> "As the sea level rises, the original site conditions are changed, resulting in an increased risk of liquefaction of sand in coastal cities. In this case, it is necessary to consider the risk of liquefaction in coastal areas [97,98]. By comparing liquefaction hazard maps before and after the sea-level rise, Murakami, Yasuhara [99] described a procedure for liquefaction hazard mapping, which shows that sea-level rise can expand the liquefaction areas." [emphasis added]

The potential for groundwater rise to exacerbate the potential for and magnitude of liquefaction across the Tri-cities area is an analysis that must be incorporated into the Tri-Cities Multi-jurisdictional LHMP.

Risk Assessment – Hazard Identification Assessment – Co-occurrence of Hazards

The Risk Assessment does an admirable job assessing the risks associated with each identified hazard. However, to truly assess the harm that the hazards pose to the natural and built environment, it is crucial the plan also illuminates the fact that hazards can co-occur and synergistically magnify impacts as noted above with groundwater rise and liquefaction. ***While each hazard is assessed and presented separately, when hazards co-occur in space and time, as is often the case, vulnerabilities can increase significantly.*** The Tri-Cities Multi-Jurisdictional LHMP should provide a description and some examples of how hazards do co-occur. Mitigation strategies should also acknowledge this potential for co-occurrence and be developed to address these simultaneously occurring hazards.

Mitigation Strategy – Mitigation Goals and Objectives

The language of Goal 5, of "valuing the natural environment as a partner," "recognizing the ecological services provided by nature and harness these ecological processes to mitigate hazards" is truly admirable. We heartily support this language. This document should also acknowledge the rarity of habitats such as coastal wetlands and the fact that increasingly, scientists are identifying coastal wetlands as one of the most important habitats on earth. Within San Francisco Bay we have lost up to 90% of our coastal wetlands, and yet the remaining 10% represents 77-80% of the coastal wetlands in the entirety of the state. The Natural Resource section of the LHMP does provide a brief description of the value of wetlands and the ecosystem services they provide. But there is no description of how any of the annexes should incorporate or harness the functions of habitats such as coastal wetlands into a plan to mitigate hazards.

We strongly urge that the LHMP include a section that delves deeper into resilience strategies and mitigations that incorporate the use of natural infrastructure and nature-based solutions. Some example language might be:

- Tidal wetlands provide important flood protection benefits by reducing wave height and by absorbing water and sequestering atmospheric carbon. There is growing interest in, and funding available for the use of natural and nature-based solutions as tools to combat the impacts of climate change at the state and federal level. However, the appropriate use of natural and

nature-based solutions is location dependent and there may be situations where hybrid strategies involving the use of natural and nature-based solutions and grey infrastructure is appropriate. An example of a hybrid approach for protection infrastructure may be an ecotone levee, constructed above the high tide line, and is a vegetated gentle slope connected to the marsh and backed (shoreward) by an accredited levee. Where natural and nature-based infrastructure alone will not suffice, a hybrid approach should incorporate natural features to conserve ecosystem values and functions while also providing flood protection.

- An easily accessible description of various nature-based solutions, as well as conceptual mapping of where use of each type might be appropriate along the San Francisco Bay Shoreline, can be found in the Shoreline Adaptation Atlas.[3]
- Funding of natural and nature-based solutions by state and federal agencies has increased, and agencies such as FEMA[4,5], the U.S. Army Corps of Engineers (USACE) "Engineering with Nature" program[6], and the California Ocean Protection Council[7] recognize the value of utilizing nature-based solutions and natural infrastructure. A document released by the White House in 2022[8] entitled "*Opportunities for Accelerating Nature-Based Solutions: A Roadmap for Climate Progress, Thriving Nature, Equity, and Prosperity*" states:

  "Now is the time to embrace the powerful potential of nature-based solutions. As we aggressively invest in emissions reductions through electric vehicles, clean energy, and industry, we must as aggressively invest in forests, urban parks, coastal wetlands, and other ecosystems."

The White House document also states:

> "Nature-based solutions, like protecting forests or restoring coastal marshes, are a fundamental pillar of fighting the climate crisis, just like reducing greenhouse gas emissions, deploying renewable energy, and increasing energy efficiency. Natural solutions can reduce emissions, remove carbon from the atmosphere and lock it away, make ecosystems more resilient, and lower climate change risks for people. These solutions are often lower in cost than conventional alternatives, and compatible with existing technology. Nature-based solutions are known to be highly effective and create multiple benefits, including improving human, economic, and ecosystem health." [emphasis added]

---

[3] Beagle, J.; Lowe, J.; McKnight, K.; Safran, S. M.; Tam, L.; Szambelan, S. Jo. 2019. San Francisco Bay Shoreline Adaptation Atlas: Working with Nature to Plan for Sea Level Rise Using Operational Landscape Units. SFEI Contribution No. 915. SFEI & SPUR: Richmond, CA. p 255. https://www.sfei.org/documents/adaptationatlas

[4] Federal Emergency Management Agency (FEMA). "Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities." (2020).

[5] Federal Emergency Management Agency (FEMA). "Building Community Resilience with Nature-Based Solutions: Strategies for Success." (March 2023).

[6] U.S. Army Corps of Engineers (USACE). "Engineering with Nature." https://ewn.erdc.dren.mil/about/

[7] Sea-Level Rise Leadership Team. (February 2022). State Agency Sea-Level Rise Action Plan for California.

[8] White House Council on Environmental Quality, White House Office of Science and Technology Policy, White House Domestic Climate Policy Office, 2022. Opportunities for Accelerating Nature-Based Solutions: A Roadmap for Climate Progress, Thriving Nature, Equity, and Prosperity. Report to the National Climate Task Force. Washington, D.C.

- The FEMA document *"Building Community Resilience with Nature-Based Solutions"*[9] specifically states:

  "FEMA recently elevated the potential CRS credit values for nature-based solutions. Credit is given for actions such as preserving open space, restoring wetlands and developing a living shoreline. The number of points awarded for preserving open space is now among the highest given in the program. Credits are awarded according to the percentage of preserved open space in a community's floodplain. The larger the percentage, the more credit is awarded, accompanied by potentially higher insurance discounts." [emphasis added]

All of the federal language regarding the use of natural and nature-based solutions demonstrates a recognition of the urgent and critical need to prioritize the use of natural infrastructure and nature-based solutions as important tools to provide climate change resilience for the natural and built environment.

The 2019 Shoreline Adaptation Atlas mentioned earlier, provides descriptions of various nature-based solutions, and provides guidance on where this type of adaptation is most appropriate. This report should be incorporated as a reference document for the LHMP.

Mitigation Strategy – Regulatory Mitigation Capabilities

All of the agencies in the Tri-Cities area should be developing and implementing ordinances that:

- Preserve and restore tidal wetlands, marshes, freshwater wetlands, springs and seeps, watercourse and historic baylands as well as low lying uplands immediately adjacent to these habitats to serve as flood buffers to ever increasing, climate change fueled storms and sea level rise, to sequester and store carbon as mitigation for our local carbon emissions and to provide land for SF Bay and its habitats to move inland as sea levels increase. It is critical that local agencies protect and secure this natural infrastructure to enhance the resilience of our communities from climate change driven hazards.
- Secure additional and expanded existing setbacks along watercourses (rivers, creeks, streams and flood control channels) to plan for future flood control needs. The cities have built right to the edge of both natural and man-made watercourses providing no room to accommodate higher flood flows or for flood control infrastructure. For undeveloped adjacent lands and for locations where land is redeveloped, new and larger setbacks should be secured to protect immediately adjacent redevelopments as well as provide space for future flood control improvements.
- All five jurisdictions involved in the Tri-City Multi-jurisdictional LHMP and the Alameda County Water Conservation and Flood Control District should collaborate on one regional sea level rise and groundwater rise resilience plan. This plan should be prepared in partnership with regional, state and federal agencies, key stakeholders, and scientific experts such as the San Francisco

[9] Federal Emergency Management Agency (FEMA). "Building Community Resilience with Nature-Based Solutions: A Guide for Local Communities." (2020).

Estuary Institute. This plan should consider the built environment, vulnerable communities, natural and cultural resources, and other elements from the new FEMA 2023 guidance. The City of Newark is proposing to undertake a sea level rise plan as a mitigation strategy for the LHMP, but this analysis and the resulting mitigation strategies need a larger geographic context to effectively implement a solid plan. The six agencies noted above might consider a plan that extends from Coyote Creek in the south to Ward Creek and Alameda Creek to the north. This regional plan should look at watersheds and the bay shoreline and not be limited by city boundaries. Regional planning should also help to ensure access to state and federal funding assistance to implement the mitigation strategies.

Capability Assessment – Administrative/Technical Mitigation Capabilities:

The adoption of the Tri-City Multi-jurisdictional LHMP should allow the participating jurisdictions to seek grant funding for implementing the mitigation strategies. Some of the agencies do not have the technical capacity to seek funding as they lack GIS and grant writing capabilities on their staff. These agencies should seek to fill these staffing holes through new positions or contractors. It is possible SB 1 funding might be available to fund resilience planning efforts.

Mitigation Strategy – Annual coordination should be required:

The LHMP should include an action item/mitigation measure, that requires the five Annexes meet on an annual basis to assess the continued relevancy of the LHMP. In addition to the five Annexes, this meeting should include the Alameda County Flood Control & Water Conservation District, major land holders such as the East Bay Regional Park District, the Don Edwards San Francisco Bay National Wildlife Refuge, and the San Francisco Public Utilities Commission at minimum. The annual review could also include interested state and federal regulatory and resource agencies and scientific experts to provide up-to-date information and to increase the likelihood that proposed permit applications will move through the review process more efficiently.

Conclusion:

The LHMP is a crucial step in adapting our communities to be resilient to rising sea and groundwater levels and more intense and flashier storms. We urge that more emphasis be placed on the prioritization of the use of nature-based solutions and natural infrastructure. Comments from an April 2023 Scientific American staff editorial[10], reinforce why it is so important this is reflected in the Goals and Objectives of the LHMP:

- "Wetlands, coastal plains, sand dunes, forests, and many other permeable surfaces do cheaply (or even for free) what engineered levees, seawalls and pumps do at a cost of billions of dollars. They protect the land around them from storm surge, flooding rains, erosion and pollution. They are vital infrastructure that makes us more resilient against climate change, and the cost of

[10] Scientific American. *Use Nature as Infrastructure*. April 1, 2023. Accessed 1-23-2024. https://www.scientificamerican.com/article/use-nature-as-infrastructure/

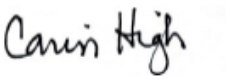
destroying them or weakening their ability to function must be factored into the decisions we make to build and grow."

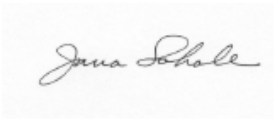
- "Failing to measure the benefits of ecosystem services in policy and management decisions is a major reason many of those ecosystems disappeared."
- "Climate change makes the undervaluation of ecosystem services more dangerous." And the example provided is, "Wetlands that mitigate flooding in a community during rare deluges will have far more economic value in 2050 when damaging storms arrive more frequently." The same holds true for our tidal wetlands. [emphasis added]

We believe the direction of the Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan is a very positive step in the right direction in identifying, assessing and mitigating the impacts of natural hazards on our communities and on our natural and cultural resources. We thank you for the opportunity to provide comments.

During our review of the LHMP Base Plan and the Annexes, it appeared there were instances where sections of the document had yet to be received and incorporated into the drafts. We would appreciate another opportunity to review and potentially comment on the draft final versions of the LHMP Base Plan and Annexes. We also request that we be informed of any future opportunities to review and comment on these documents.

Respectfully submitted,





Carin High
CCCR, Co-Chair
cccrrefuge@gmail.com

Jana Sokale
CCCR
cccrrefuge@gmail.com

Comment 18

From: cora chiu <musicwings456@gmail.com>
Sent: Friday, February 16, 2024 11:55 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Tri-City Local Hazard Mitigation Plan

Hi Jeanine,

Here's my last public comment with regards to that Actions.

Fremont Action 35. In areas of new condo, apartment, single family home developments, require fire lane open spaces between houses blocks.

Newark Action 14. Replace Eucalyptus Groves with native tree species that grow to the height of the existing Eucalyptus Groves. Currently, the Eucalyptus groves are home to monarch butterflies, turkey vultures, white egrets.

Replacements of these large old trees should be conducted slowly to prevent further habitat loss while young new trees are introduce.

Or just don't remove these Eucalyptus Trees as they are currently home to native wildlife.

Fremont Action 18- Mitigate flooding impacts by restoring wetlands at Newark Site 4 where the current pick and pull is located. Instead of allowing Developers to build high density housing at the former wetlands site. Restoring wetlands as our natural flood protection brings back some of the flood waters and slowing the rate that water re-enters the stream channel, wetlands can reduce the severity of downstream flooding and erosion. This is also an act of Natural Resource Protection for the sensitive native wildlife in this area.

Newark Action 2 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Fremont Action 9- Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Union City Action 2 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Newark Action 11 - Install storm drainage improvements at Lindsay Tract in a way it is beneficial to restoration the natural environment. The drainage solution would involve bioswales or bioretention ponds.

Union City Action 16 - Requires all new homes to not be built on liquefaction soils in union city.

USD Action 1 - Enhance Public Education and Awareness of Natural Resources protection strategies for Hazards mitigations. (Ie not building homes in sea level rise risk areas, landslide areas, preservation of wetlands… fire corridors)

Thanks!

Cora Chiu

Comment 19

From: Rosalynn Liu <rosalynnliu@yahoo.com>
Sent: Saturday, February 17, 2024 2:05 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Regarding Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan

Dear Ms. Foster,

Thank you for your & your colleagues' efforts on the Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan. I am a resident of Fremont, CA, and I simply wanted to request that those working on this plan try to work toward preserving as much of the wetlands in this region as much as possible, particularly in light of the risk of rising sea levels in coming years due to climate change.

Thanks so much for your consideration, and sorry for this comment coming a bit late!

Sincerely,
Rosalynn Liu

Comment 20

From: Kelly <abrfar-eb@yahoo.com>
Sent: Wednesday, October 19, 2022 12:53 PM
To: Christina Briggs <CBriggs@fremont.gov>; Raj Salwan <RSalwan@fremont.gov>; ralvarado@fremont.org
Cc: Alec Tune <atune@fremont.gov>; Donna Do <DDo@fremont.gov>; Suzanne Wolf <SWolf@fremont.gov>; William Yragui <wyragui@missionpeakconservancy.net>; Joel Pullen <JPullen@fremont.gov>; David Wage <DWage@fremont.gov>; Clifford Nguyen <cnguyen@fremont.gov>; Jim O'Connor <joconnor@ebparks.org>; Dennis Waespi <dwaespi@ebparks.org>; Jason Rosenberg <jrosenberg@ebparks.org>; Bronwen Lacey <BLacey@fremont.gov>
Subject: Mitigation plan ought to discourage further development in hazardous areas

Ms. Briggs, Councilmember Salwan, and Mr. Alvarado:

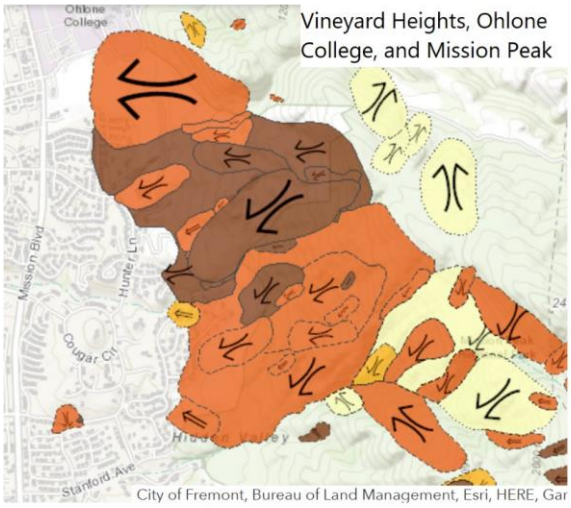
On October 18, 2022, the city council voted to accept $190,000 to update its hazard mitigation plan. The revised plan ought to incorporate hazards that are already known to the city such as landslide inventories, earthquake faults, and (modest) tsunami hazards.

The state of California has mapped some of the known hazards, as shown below.

The city should discourage further development of housing in the hazardous foothills near Mission Peak, Weibel Dr, Ohlone College, Vineyard Heights, and Avalon Heights. Any housing that is permitted must be held to stricter standards for vertical seismic acceleration. The areas at the highest risk should be designated for parklands and recreational use instead of housing.

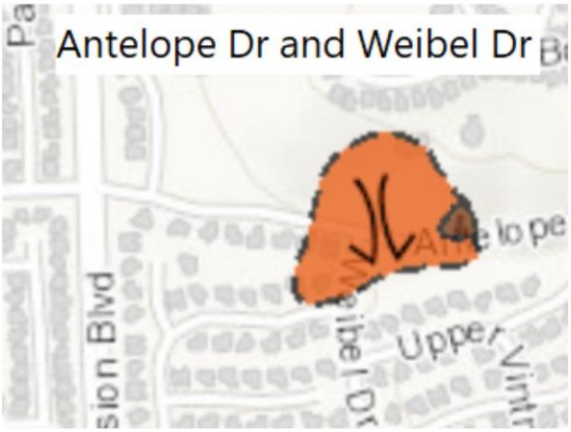
— Kelly
Mission Peak Conservancy

Landslide zones

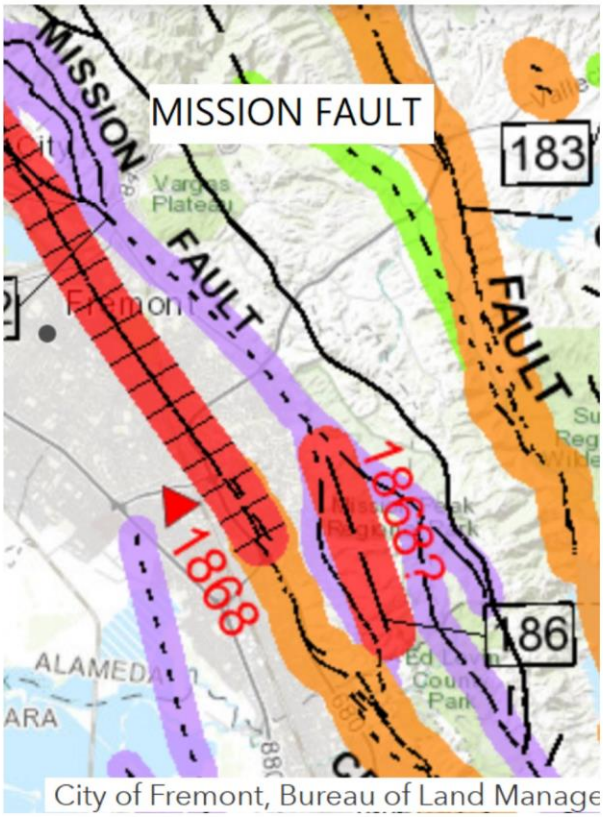


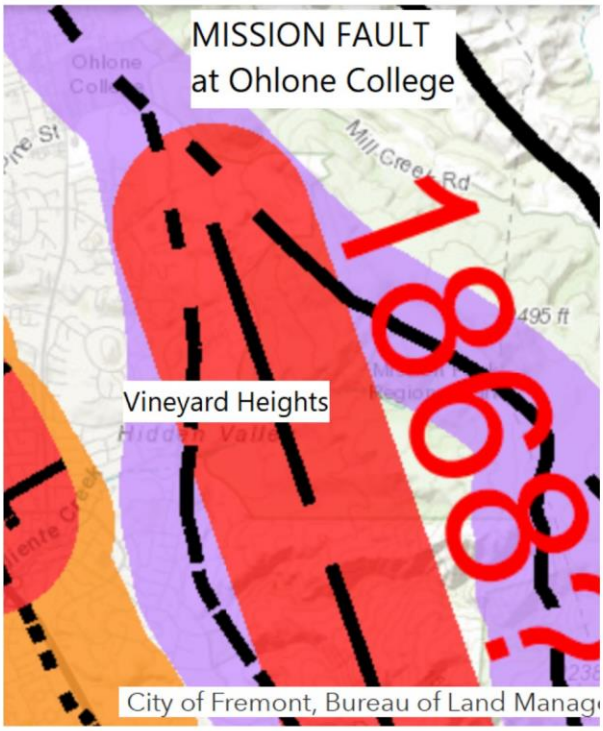
Vineyard Heights, Ohlone College, and Mission Peak



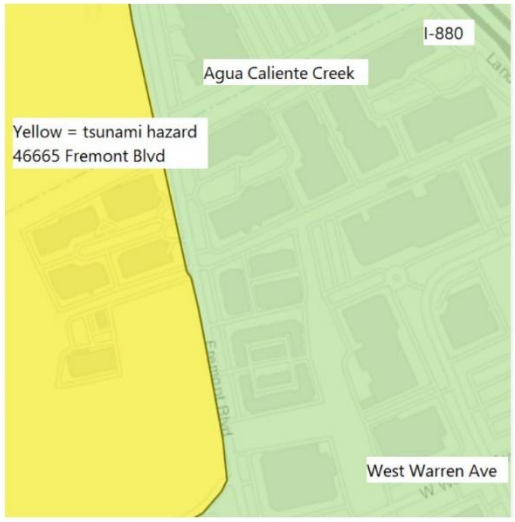


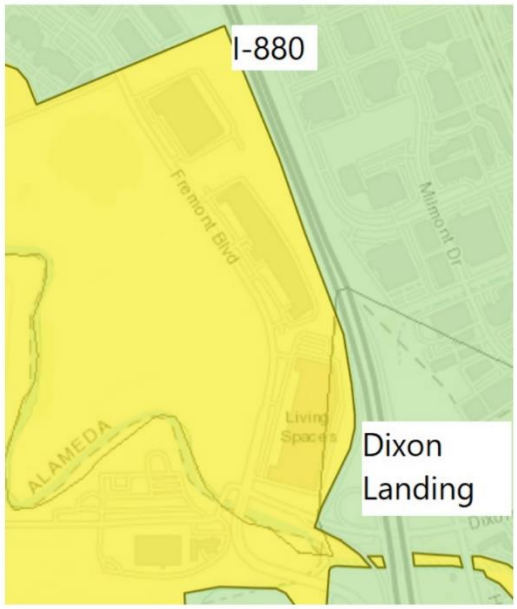
Earthquake faults

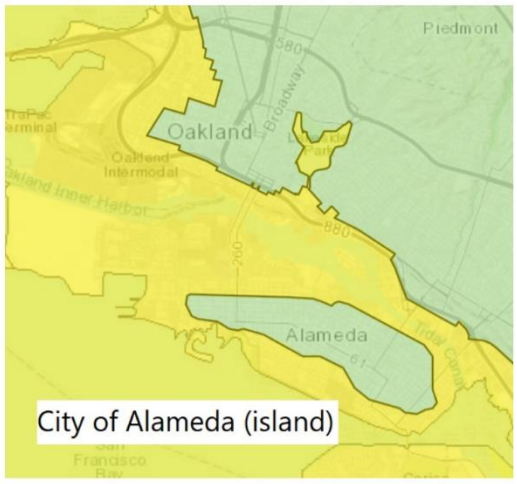




Tsunami hazard zones







Fremont City Council
3300 Capitol Avenue
Fremont, CA 94538
SCHEDULED

Meeting: 10/18/22 07:00 PM
Div/Dept: Fire Department
Category: Grants

Sponsors:
DOC ID: 4714

STAFF REPORT (ID # 4714)

HAZARD MITIGATION GRANT FUNDS - Accept and Appropriate Federal Emergency Management Agency Hazard Mitigation Grant Funds in the amount of $187,500 to Update the Local Hazard Mitigation Plan

Contact Persons:

Name:	Alec Tune	Donna Do
Title:	Emergency Services Manager	Management Analyst II
Div/Dept:	Fire Department	Fire Department
Phone:	510-494-4200	510-494-4200
E-Mail:	atune@fremont.gov	ddo@fremont.gov

Executive Summary: Staff seek City Council approval to accept a grant award obligated by the Federal Emergency Management Agency (FEMA) and the California Governor's Office of Emergency Services (Cal OES) to the City of Fremont in the amount of $187,500, and to enter into an agreement with Cal OES to appropriate and use the funds to update the City's Local Hazard Mitigation Plan (LHMP). Pursuant to FEMA rules and best practices, staff propose a partnership among neighboring jurisdictions to prepare a new, Tri-Cities Multi-jurisdictional LHMP that will meet all FEMA regulatory requirements, including requirements to update the City's LHMP.

Link to staff report #4714 and meeting agenda
http://fremontcityca.iqm2.com/Citizens/Detail_Meeting.aspx?ID=1859

Geological report on the Mission Fault (1999)

J. David Rogers 1 and Patrick L. Drumm
UM-Rolla Dept. of Geological Engineering

Our evaluation of exposed outcrops at the base of Mission Ridge (described earlier under "Mission fault studies") suggested that the Mission fault does not lie at the base of the ridge, as suggested by Hall (1956, 1958) and others who succeeded him. The sharp break in slope appears to be stratigraphically controlled, at the gradational contact between overturned sequences of the Orinda/Cierbo formation and older Briones sandstone, which is much more resistant. Graymer, Jones, Brabb and Helley (1994) suggested that the Mission fault is located about 500 to 600 feet downslope of the contact (Fig. 2), which appears to be supported by our more recent work.

In order to evaluate the potential impact of uplift along the Mission fault on the subject landslide complex, a series of 14 cross sections were drawn through the headscarp graben area (Fig. 6), and small increments of downslope translation were modeled along with even smaller increments of vertical uplift along the Mission fault, assuming its underlying position to be about 500 feet downslope of Mission Ridge. One of the interesting aspects of this model was the compressional flower structure that is suggested to develop above the fault, within the landslide. A similar "step" in the prototype landslide"s basal slip surface appears to exist, as evidenced by the marked backward rotation of the headscarp with simple translation for several hundred feet downslope, wherein the basal slip surface(s) steepen markedly, downslope of the prominent "secondary ridge" forming the southwest side of the landslide headscarp graben.

In addition, recent uplift along the Mission fault could also account for the prominent "secondary ridge", which parallels Mission Ridge, about 500 feet southwest, along the strike of the Mission fault. Although this is conjecture, based upon geometric relationships and assumed rates of offset and uplift, such a model does appear to replicate the physical aspects of the field situation. If such a model were true, the ongoing movement and uplift along the Mission fault is one of the primary mechanisms reactivating the landslide, probably every few hundred or few thousand years.

Reference (May 8, 1999) https://web.mst.edu/rogersda/hazard_mitigation_techniques/landslides/fremont/MP.htm#BM1998_MISSION_PEAK_LANDSLIDE

Comment 21

From: Josh Sonnenfeld <josh@joshsonnenfeld.com>
Sent: Monday, February 26, 2024 11:30 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: Re: Joint comment letter from climate & conservation groups on Draft Tri-City Multi-jurisdictional Local Hazard Mitigation Plan

Hi Ms. Foster -

Just wanted to confirm you received this joint comment letter on the Draft Tri-City Multi-jurisdiction Local Hazard Mitigation Plan?

Thank you,
Josh Sonnenfeld

On Fri, Feb 16, 2024 at 9:05 AM Josh Sonnenfeld <josh@joshsonnenfeld.com> wrote:
Dear Ms. Foster,

On behalf of 14 organizations representing thousands of residents in Newark, Fremont and Union City, with expertise in climate resilience and conservation, I am submitting the attached joint letter in response to the Draft Tri-City Multi-jurisdictional Local Hazard Mitigation Plan.

Specifically, the letter urges the significant strengthening of the sea level rise and coastal resilience sections of the draft plan by embracing the critical importance of protecting and restoring our wetlands and baylands as a critical action that can protect the region's residents and property from future flooding.

I would be grateful if you could confirm receipt of our letter -- and thank you in advance for your consideration of our comments.

Sincerely,
Josh Sonnenfeld

On behalf of:

Alameda Creek Alliance
California Native Plant Society - East Bay Chapter
Center for Biological Diversity
Citizens Committee to Complete the Refuge
Golden Gate Bird Alliance
Greenbelt Alliance
Mission Peak Conservancy
Ohlone Audubon Society
San Francisco Baykeeper
San Francisco Bay Wildlife Society
Santa Clara Valley Audubon Society
Save The Bay
Sierra Club, San Francisco Bay Chapter
SPUR

A.3 Tri-City County Step 3: Coordinate with other Agencies

This planning step credits coordinating with other agencies and key stakeholders and incorporating other plans and other agencies' efforts into the floodplain management plan or LHMP. Other agencies and organizations were contacted to determine if they have studies, plans and information pertinent to the floodplain management plan, to determine if their programs or initiatives may affect the community's programs, inviting them to participate in the planning process, and otherwise asking them to support the community's efforts in this LHMP Update. Coordination efforts with these other agencies and stakeholders are documented in Table A-2 below.

Table A-2 List of Agencies and Key Stakeholders Coordinated with Through the 2024 LHMP Tri-City Update Process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
CA DWR / Michael Gill	7/7/2023		X			FM reached out to obtain NFIP Community Information System Data to support the LHMP Update process
USGS / Anne Wein	6/27/2023		X	X		FM reached out to discuss the earthquake hazard and earthquake Hazus scenarios for the Tri-City Planning Area
USGS / David Wald	6/30/2023		X		X	FM reached out to discuss the earthquake scenario selection for the Tri-City Planning Area

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Cal OES Tsunami Program / Yvette Duke	6/27/2023		X			FM reached out to discuss Tsunami and Earthquake hazards in for the Tri-City LHMP
Cal OES Tsunami Program / Yvette Duke	5/10/2023		X			Alec Tune, Fremont Project Lead, reached out to invite Yvette Duke to our Planning Committee Meetings
California Geological Survey Tsunami Unit / Nick Graehl, Engineering Geologist	7/11/2023		X			Alec Tune, Fremont Project Lead, reached out to invite Nick Graehl to our Planning Committee Meetings
California Geological Survey Tsunami Unit / Nick Graehl, Engineering Geologist	7/17/2023		X			FM reached out to Nick Graehl to see if he could help obtain a downloadable version of their landslide data in GIS and discuss other data they may have to support the LHMP risk assessment.
Santa Clara Valley Water District /Nina Merrill, Sr. Water Resources Specialist	7/17/2023		X			Alec Tune, Fremont Project Lead, reached out to invite Nina Merrill to our Planning Committee Meetings

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Myfloodrisk@water.ca.gov	7/31/2023		X			FM reached out to Cal DWR see if they could help us obtain the LFPZ data from their web viewer as their LFPZ tool did not seem to be working.
Independent Living Resources of Solano and Contra Costa Counties and Voluntary Organizations Active in Disasters / Ron Halog	7/8/2023		X		X	Alec reached out to Ron Halog at a meeting and by follow up email to invite him to be part of the planning committee to our Tri-City LHMP Update project
Independent Living Resources of Solano and Contra Costa Counties and Voluntary Organizations Active in Disasters / Ron Halog	7/7/2023 and 8/8/2023		X			FM reached out to Ron Halog to see if their were other individuals support vulnerable populations that should be invited to our Tri—City LHMP Update project meetings and be part of the planning committee

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.
EDENIR / Lars Eric Holm	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.
Community Resources for Independent Living / Michael Galvan, CRIL Hayward	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Community Resources for Independent Living / Alejandra Hacker, CRIL Hayward	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.
Regional Center of East Bay/ John Lee	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.
Community Resources for Independent Living / Dawna Smylie, CRIL Hayward	8/9/2023		X			FM followed up with a group of individuals working with various AFN and vulnerable population groups to invite them to participate in our LHMP planning committee meetings.

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
San Luis and Delta Mendota Water Authority / Frank Ramus	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Pleasanton / Leo Lopez	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Pleasanton / David Luera	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Pleasanton / David Luera	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Pleasanton / Giacoma Demonte	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
USACE / Patrick Sing	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Dublin Police / Nate Schmitt	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Zone 7 / Michael Miller	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
LPFD / Tracy Hein	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
DWR, OFD / Pardeep Singn	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
DWR, OFD / Erdon Abraham	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
ACWD / Leonard Ash	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Livermore / Herbert Cole	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
DWR / Arnoldo Soto	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
DWR Delta Field Division / Travis Faria	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Zone 7 / Josh Chapman	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
East Bay Regional Park District / David Vance	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
East Bay Regional Park District / David Vance	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Zone 7 / Elke Rank	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
East Bay Regional Park District / David Vance	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Contra Costa County OES / Beatrice Ponhillo	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
LARPD / Emily Muniz	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
LARPD / Seth Eddings	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
DWR / Tracy Pettit	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Cal OES / Brian Buchhout	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
Cal OES / Melani Gilbert	7/13/2023	Meeting: WR Delta Field Division Emergency Action Plan (EAP) Seminar			X	During this meeting, Alec Tune, Fremont OES, notified all that the Tri-City LHMP project was underway and welcomed them to participate in the Plan development process
City of Newark/ Michael Hammon, Mayor/Chair David Benoun, City manager Lenka Hovorka, Assistant City Manager Krysten Lee, Finance Director Soren Fajeau, Public Works Director Steven Turner, Community Development Director Gina Anderson, Police Chief Ed Miranda, Information Technology Director Jane Maoas, Police Chief	6/22/2022	Meeting: Newark Disaster Council			X	During this meeting, Richard Martinez, Newark OES, notified all that the Tri-City LHMP project was going to be started soon and would welcome their input

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Ohlone / Director of Campus Police	6/22/2022	Meeting: Newark Disaster Council			X	During this meeting, Richard Martinez, Newark OES, notified all that the Tri-City LHMP project was underway would welcome input to the Plan
ACFD / Lincoln Casimere, Emergency Manager	6/22/2022	Meeting: Newark Disaster Council			X	During this meeting, Richard Martinez, Newark OES, notified all that the Tri-City LHMP project was underway would welcome input to the Plan
National Weather Service/ Brian Garcia	10/31/2023		X			Reached out to Brian Garcia, NWS, to see if he could obtain a record of red flag days affecting the Tri-City Planning Area since 2016
PG&E / Barry Stallard	10/31/2023		X			Reached out to Barry Stallard, PF&E, to see if they could provide a record PSPS events affecting the Tri-City Planning Area since 2016

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
California Highway Patrol / Brent Bartusch Tim Willcock	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Alameda County Sheriff's Office / David Blanchard Thomas Boyd Andrew Brosi Val Courtney Matthew Farrunggia Marc Petrini Yesenia Sanchez Brett Scheuller Jason Podany	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Sunol Fire Safe Coalition/Diablo Fire Safe Council / Rosemary Chang	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
SF Public Utilities Commission / Scott Chenue Marcus L. Coleman Rick Duffey Josh Gale Amanda Giggins Pat Jones Clayton Koopmann Jeremy Lukins Oscar Miron Tim Ramirez Brad Killgore Ed Skubic Victor Rivers Kyle Randolph Robert Cyr	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
SF PUC Lessee: Cronin Ranch / John Cronin	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Sunol Citizens Advisory Council / Connie De Grange	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Santa Clara County Fire Department / Brian Glass Dennis Lollie	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
East Bay Regional Park District / Matt Graul Ernie Haga Mark Pollard Bordon Willey	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Cal Fire / George Huang Jeff Nichols Ed Orre Matt Collyer Omar Jesus Baraka Carter Ratt Westerman Cody Schaake John Reynolds	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
SF PUC Lessee / Imhof Tractor Service, Inc. / Frank Imhof	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
California Department of Fish & Wildlife / Ryan McCoy	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Alameda County Fire Department / Eric Moore Derrick Thomas	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Spring Valley Fire Department / Jerry Serpa Simon So M. Hacke	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Livermore-Pleasanton Fire Department / Jason Solak	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Pacific Gas & Electric / Barry Stallard	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

Agency Name/ Contact	Date	Mechanism	Contacted via Mail/email	Contacted via Phone	Contacted Face-to Face/Virtual Meeting	Topics Discussed
Alameda County Board of Supervisors / Shawn Wildon	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process
Pleasanton Police Department / Jacey Kurtz Jason Knight	6/1/2023	2023 First Responders Meeting			X	Alec attended the first responder's meeting and announced the Tri-City LHMP Update project and let people know how they could be involved in the process

CA DWR / Michael Gill

Hi Jeanine,

Please see attachments for the flood insurance information on Fremont, Newark, and Union City. If you need anything else please let me know.

Best,

Michael Gill
Engineer, Water Resources
Community Assistance Unit
Division of Flood Management
(916) 699-8393

From: Jeanine Foster <jeanine.foster@fostermorrison.com>
Sent: Thursday, June 29, 2023 12:04 PM
To: Gill, Michael@DWR <Michael.Gill@water.ca.gov>
Subject: RE: NFIP Data Request

Hi Gill,

I wanted to follow up on this previous request for the Cities of Fremont, Newark and Union City. The reports are dated 12/2/2022. The communities, especially Fremont found this very helpful as Fremont participates in the CRS program. They are wondering if this data has been updated since 12/2022 or how often they are updated. They are preparing for a CRS visit the end of July.

Can you update this flood insurance information (similar to the below request) if there is more recent data?

Thanks very much. I hope you are having a good start to your summer.

Jeanine Foster
Foster Morrison Consulting
(303) 717-7171

USGS / Anne Wein

Hi Jeanine

I appreciate that you are on to the science of hazards.

Here's my follow up so far:

1. HayWired Hazus
   results: https://www.sciencebase.gov/catalog/item/5d2e5ae8e4b038fabe22dddc

2. HayWired fire following earthquake results: https://www.usgs.gov/data/fire-following-mw-70-haywired-earthquake-scenario

3. Hayward fault scenarios (simulations) - M6.8, M7.0 and M7.2 (Hayward + Calavederas)

https://earthquake.usgs.gov/education/shakingsimulations/hayward/
HayWired is M7.0 with Oakland epicenter

5. USGS earthquake scenario
   catalog: https://usgs.maps.arcgis.com/apps/webappviewer/index.html?id=14d2f75c7c4f4619936dac0d14e1e468

   I am consulting with seismologists on advice for selecting from these scenarios. If you click on stars/epecienters near fremont a set of scenarios is available for viewing.

6. Liquefaction and sea-level rise
   storymap: https://storymaps.arcgis.com/stories/b5f973b6e4da45258c0b5a5368ca26f7

7. Jamie Albrecht for Berkeley LHMP. Contact information is JAlbrecht@berkeleyca.gov

8. Let me know if you need help contacting CGS about shallow landslides.

Happy to take any questions. I'm seeking advice on the 4-5 scenarios for you.

Regards

Anne Wein

USGS / David Wald

Hi Jeanine,

I run the ShakeMap/PAGER systems at USGS and I'll be glad to advise on the use of our scenarios. You might first peruse our scenario catalog, in particular, open the scenario map browser and zoom into the region of interest to see what scenarios are already available. One can list the events on the map with the up arrow on the bottom of the page and use the layer commands to control other aspects of the view. Any event you select will take you right to the ShakeMap web page for that event.

Whether or not that works for you, we can discuss what your needs are, and we'll help find what you need. I am available today (Friday), but I have quite substantial travel coming up.

Cheers,
David

From: Wein, Anne <awein@usgs.gov>
Date: Thursday, June 29, 2023 at 8:12 PM
To: jeanine.foster <jeanine.foster@fostermorrison.com>, Wald, David J <wald@usgs.gov>
Subject: EQ Scenarios for tri-city LHMP

Hello Jeanine and David
I am introducing you to each other about earthquake scenario selection for Fremont, Newark and Union City LHMP.

Regards
Anne

Cal OES Tsunami Program / Yvette Duke

Hi Yvette,

We are the consultants working on the Tri-City LHMP in Alameda County. Alec Tune is the local project lead – you might have met him during CESA this year. We have been doing LHMPs in California since 2004 but always want to make sure we keep up on the most current available data and resources.

I was wondering if you had any time to discuss Tsunami and Earthquake hazards in Alameda County. I would also be interested in connecting with your Hazus person at some point.

Let me know if you have time for a call this week. Next week would work also.

Thank you very much,

Jeanine Foster
Foster Morrison Consulting
(303) 717-7117

From: LaDuke, Yvette@CalOES <Yvette.LaDuke@CalOES.ca.gov>
Sent: Wednesday, May 10, 2023 10:56 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>; Alec Tune <atune@fremont.gov>
Subject: RE: Project Kickoff: Local Hazard Mitigation Plan

Thank you Jeanine. 2021 is the most recent dataset for the tsunami hazard areas.

Cal OES Tsunami Program / Yvette Duke

Hi,

Thanks for the email. The last Tsunami dataset we used was from 2021. We will be sure to reach out to ensure we have the most current data sources for this project.

Thanks again,

Jeanine Foster
Foster Morrison Consulting
(303) 717-7171

From: Alec Tune <atune@fremont.gov>
Sent: Wednesday, May 10, 2023 9:29 AM
To: LaDuke, Yvette@CalOES <Yvette.LaDuke@CalOES.ca.gov>
Cc: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: RE: Project Kickoff: Local Hazard Mitigation Plan

Hi Yvette:

Appreciate it.

Our second meeting – on August 17 in the afternoon, held in nearby Newark – and will dive into risk assessment. It would be great if you can attend, if you happen to be free then.

We plan to incorporate Cal OES' latest (2022) Tsunami mapping into the plan, and will be in touch with any questions as we go. I'm copying in Jeanine, our consultant.

Thanks!

Alec

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

California Geological Survey Tsunami Unit / Nick Graehl, Engineering Geologist

From: Alec Tune <atune@fremont.gov>
Sent: Tuesday, July 11, 2023 1:37 PM
To: Graehl, Nicholas@DOC <Nicholas.Graehl@conservation.ca.gov>
Cc: Wilson, Rick@DOC <Rick.Wilson@conservation.ca.gov>; Bott, Jacqueline@DOC <Jacqueline.Bott@conservation.ca.gov>; Palmer, Matthew@CalOES <Matthew.Palmer@CalOES.Ca.Gov>; Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: RE: Tri-City LHMP Planning Committee Meeting #2 (Risk Assessment)

Hi Nick,

Great! I hope DOC can join us, along with Cal OES.

We're committed to incorporating the latest and best tsunami information into our new LHMP. (I'm copying in Jeanine Foster, of Foster Morrison Consulting, whose team is in the midst of data collection for the risk assessment at the moment.)

Given the large number of attendees at our Planning Committee meetings, we've decided to opt for in-person only. I hope that won't dissuade you from attending – as we'd really like to have our State partners as a part of this important project.

Alec

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

From: Graehl, Nicholas@DOC <Nicholas.Graehl@conservation.ca.gov>
Sent: Tuesday, July 11, 2023 12:14 PM
To: Alec Tune <atune@fremont.gov>
Cc: Wilson, Rick@DOC <Rick.Wilson@conservation.ca.gov>; Bott, Jacqueline@DOC <Jacqueline.Bott@conservation.ca.gov>; Palmer, Matthew@CalOES <Matthew.Palmer@CalOES.Ca.Gov>
Subject: Tri-City LHMP Planning Committee Meeting #2 (Risk Assessment)

Good afternoon,

Matt Palmer forwarded the meeting invite to our group, as we are all a part of the California Tsunami Program, which is composed of Cal OES and California Geological Survey (CGS) tsunami subject matter experts. We can help relay tsunami information for your Tri-City MJ LHMP project.

Was there an option to attend virtually?

Thank you,

California Geological Survey Tsunami Unit / Nick Graehl, Engineering Geologist

Hi Nick,

We are the consultants working with Alec Tune on the LHMP for the Tri-City area. I see you work in the Tsunami Program. We have the current Tsunami GIS layer. I am wondering if you can help with a related data needs question. We are trying to locate where we can obtain a GIS layer for the Landslide Zone
Mapping: https://gis.data.ca.gov/maps/08d18656a0194881a7e0f95fde19f08c/explore?location=37.150687%2C-120.122077%2C7.98

The site doesn't seem to have a GIS download option. We have the layers for Earthquake induced landslide and for Susceptibility to Deep-seated landslides, but have not found where to download the GIS data for the landslide zone mapping data.

I saw you are with the Department of Conservation, is this something you can help with or can direct me to who might be able to provide the data?

I had tried to leave messages with the GIS person with CGS and have not received a response. Any help would be much appreciated.

Also, as mentioned, we do have the Tsunami evacuation layer, is there any other current information we should be referring to for the LHMP?

Thank you very much,

Jeanine Foster
Foster Morrison Consulting
(303) 717-7171

Santa Clara Valley Water District /Nina Merrill, Sr. Water Resources Specialist

From: Nina Merrill <NMerrill@valleywater.org>
Sent: Monday, July 17, 2023 12:41 PM
To: Alec Tune <atune@fremont.gov>
Cc: Alexander Gordon <AGordon@valleywater.org>
Subject: RE: Verifying Contact Information Used in Dam Emergency Action Plans

Hi Alec,

Thanks for the link to the Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan. I will try to attend as it pertains to potential dam failure. I've copied Valley Water's OES principal Alexander Gordon for his information.

Thanks again for your attention to our dams inundations.

Nina

NINA MERRILL
SENIOR WATER RESOURCES SPECIALIST
Dam Safety Program
nmerrill@valleywater.org
Tel. (408) 630-2640 / Mobile (408) 891-2832

Valley Water

Clean Water • Healthy Environment • Flood Protection
SANTA CLARA VALLEY WATER DISTRICT
5750 Almaden Expressway, San Jose CA 95118
www.valleywater.org

From: Alec Tune <atune@fremont.gov>
Sent: Monday, July 17, 2023 12:23 PM
To: Nina Merrill <NMerrill@valleywater.org>
Cc: Megan Rivera <mrivera@fremont.gov>; Anya Gupta <AGupta@valleywater.org>
Subject: RE: Verifying Contact Information Used in Dam Emergency Action Plans

***** This email originated from outside of Valley Water. Do not click links or open attachments unless you recognize the sender and know the content is safe. *****

Hi Nina,

Thanks – appreciate the information. We'll await the updated EAPs in the coming weeks.

In the meantime, I wanted to let you know that the City of Fremont is partnering with several public agencies in southern Alameda County to prepare a Tri-City Multi-jurisdictional Local Hazard Mitigation Plan. That plan will address risk associated with a number of natural hazards, as well as high hazard dams. Our next meeting, on August 17, will focus on risk assessment – based on information collected to date regarding the various hazards. I've extended an invitation to that meeting to you; please feel

Myfloodrisk@water.ca.gov

From: Chris Morrison <chris.morrison@fostermorrison.com>
Sent: Monday, July 31, 2023 3:54 PM
To: myfloodrisk@water.ca.gov
Cc: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: LFPZ GIS Viewer

Good afternoon,

We are looking to get LFPZ maps for our FEMA required Hazard Mitigation Plan for the City of Fremont, Newark, and Union City (as well as Alameda County Water District and Union Sanitary District). I have accessed the Flood Risk Map Web Viewer with two different browsers and have encountered the same issue with both. When I select the icon (eyeball) for Levee Flood Protection Zone the Viewer progress bar starts, and then continues in perpetuity. Not sure what we are doing wrong. Can you forward us maps for those locations?

Thanks for your help!

Chris Morrison, MPA, CFM
Owner/Mitigation Planner
Foster Morrison, Ltd.
701.318.4445
chris.morrison@fostermorrison.com

Independent Living Resources of Solano and Contra Costa Counties and Voluntary Organizations Active in Disasters / Ron Halog

Hi Jeanine -

I spoke with both Lars Eric and Ron, inviting both to join our Planning Committee.

No immediate commitments to attend from either (I'll keep both on our invite list), except that Ron said if he cannot participate, he can at minimum help with identifying some local partners. I let him know I had provided his business contact information to him; I think he'd welcome your call - best to try next week, after the conference.

Alec

Sent from my iPhone

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

On Jun 26, 2023, at 9:45 AM, Jeanine Foster <jeanine.foster@fostermorrison.com> wrote:

Perfect, I wrote down the VOAD connection, but then didn't see it in the contact emails. They would both be great, and you also mentioned they have been added to the Master list.
It would be great to get one or both involved.
Thanks

Get Outlook for iOS

From: Alec Tune <atune@fremont.gov>
Sent: Monday, June 26, 2023 10:41:17 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Subject: RE: [External] Contact Information

Will do.

Lars Eric and Ron are Chair and Co-Chair of Alameda County VOAD – even though their employment is with other agencies (and serving other counties, in Ron's case).

Will keep you posted.

Thanks!

Alec Tune
EMERGENCY SERVICES MANAGER

Independent Living Resources of Solano and Contra Costa Counties and Voluntary Organizations Active in Disasters / Ron Halog

Hi All,

I would like to introduce you to Jeanine Foster. Jeanine is with the Tri-City Local Hazard Mitigation Plan and I want to connect you all with her. The group has a meeting on August the 17th from 1 – 4. You all may find beneficial.

Hope to see you at the meeting.

Ron Halog
Emergency Preparedness Coordinator
ILRSCC (Independent Living Resources of Solano & Contra Costa Counties)
(925) 536-9553
ronh@ilrscc.org
www.ilrscc.org

Independent Living
RESOURCES
of Solano & Contra Costa Counties

From: Jeanine Foster
Sent: Tuesday, August 8, 2023 3:06 PM
To: Ron Halog
Subject: [External] FW: [External] Tri-City Local Hazard Mitigation Plan

**** This is an EXTERNAL email. Please Exercise caution when opening attachments or clicking links from unknown senders or unexpected email. Please verify that you recognize the email address. ****

Hi Ron,

I wanted to follow up to this email from a few weeks ago. You indicated that you might have some folks that would be interested in attending the Tri-City LHMP Meetings. As detailed below, our next meeting is next Thursday, August 17th, from 1-4 pm. You should have received an invite.

You had previously indicated that there are some organizations that might benefit from attending the Tri-City LHMP meetings: CRIL, Regional Center of the East Bay, Friends of Children with Special Needs and the Developmental Disabilities Council of Alameda County. Likewise, our planning committee and

Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division

Hi Everyone,

We are the consultants working with the Cities of Fremont, Newark, and Union City and the Alameda County Water District and the Union Sanitary District on a Tri-City Local Hazard Mitigation Plan Update. We held a project kickoff meeting in May of 2023 and have our next meeting on the Risk Assessment coming up next week. If anyone is interested in natural hazard mitigation planning at the local level, it would be great to have you attend our planning committee meetings or participate in any way that might work for you. We will also have a public review draft of the LHMP in December and would welcome your comments and input on the document. Equity in hazard mitigation and hazard mitigation planning is a key focus of FEMA and we want to make sure that we have the right people at the table to help integrate these issues into the plan itself and through the equitable implementation of any resulting mitigation strategies.

For more information on the project see: https://www.my.fremont.gov/tri-city-hazard-plan

I will also forward an invite for next week's Risk Assessment meeting. Please reach out if you have questions or would like additional information.

Thank you,

Jeanine Foster
Foster Morrison
(303) 717-7171

From: Ron Halog <ronh@ilrscc.org>
Sent: Wednesday, August 9, 2023 1:47 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>; Chen, Benjamin, Public Health, FHS <Benjamin.Chen2@acgov.org>; Lars Eric Holm <leholm@edenir.org>; 'michael.galvan@crilhayward.org' <Michael.Galvan@crilhayward.org>; Alejandra Hacker <Alejandra.Hacker@crilhayward.org>; John Lee <JLee@rceb.org>; Dawna Smylie <Dawna.Smylie@crilhayward.org>
Subject: RE: [External] FW: [External] Tri-City Local Hazard Mitigation Plan

Hi All,

I would like to introduce you to Jeanine Foster. Jeanine is with the Tri-City Local Hazard Mitigation Plan and I want to connect you all with her. The group has a meeting on August the 17th from 1 – 4. You all may find beneficial.

Hope to see you at the meeting.

Ron Halog
Emergency Preparedness Coordinator
ILRSCC (Independent Living Resources of Solano & Contra Costa Counties)

EDENIR / Lars Eric Holm

See image above under the heading Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division.

Community Resources for Independent Living / Michael Galvan, CRIL Hayward

See image above under the heading Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division.

Community Resources for Independent Living / Alejandra Hacker, CRIL Hayward

See image above under the heading Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division.

Regional Center of East Bay/ John Lee

See image above under the heading Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division.

Community Resources for Independent Living / Dawna Smylie, CRIL Hayward

See image above under the heading Alameda County Public Health / Chen, Benjamin, Public Health, Family Health Services Division.

San Luis and Delta Mendota Water Authority / Frank Ramus

Hi Jeanine,

Please see attached sign in sheet, which is for the meeting detailed on the second attachment.

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

From: McGrath, Delia@DWR <Delia.McGrath@water.ca.gov>
Sent: Thursday, August 10, 2023 12:29 PM
To: Alec Tune <atune@fremont.gov>; Trujillo Jr., Joseph@DWR <Joseph.Trujillo@water.ca.gov>
Cc: Herrera, Octavio@DWR <Octavio.Herrera@water.ca.gov>; Megan Rivera <mrivera@fremont.gov>
Subject: RE: DWR Delta Field Division Emergency Action Plan (EAP) Seminar

Hello Alec,

Attached is the sign in sheet.

On another note. I will not be able to attend the Tri-City Local Hazard Mitigation Plan meeting scheduled for August 17th. I'll call to find out more information and see how best DWR can participate.

Delia

Delia McGrath, PE
Operational Readiness Lead
SWP Emergency Preparedness Program
California Department of Water Resources
Cal OES EOC Credentialed
Desk Phone: (916) 902-6939
Cell Phone: (916) 804-1463



Pleasanton / Leo Lopez

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Pleasanton / David Luera

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Pleasanton / David Luera

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Pleasanton / Giacoma Demonte

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

USACE / Patrick Sing

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Dublin Police / Nate Schmitt

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Zone 7 / Michael Miller

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

LPFD / Tracy Hein

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

DWR, OFD / Pardeep Singn

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

DWR, OFD / Erdon Abraham

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

ACWD / Leonard Ash

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Livermore / Herbert Cole

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

DWR / Arnoldo Soto

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

DWR Delta Field Division / Travis Faria

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Zone 7 / Josh Chapman

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

East Bay Regional Park District / David Vance

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

East Bay Regional Park District / David Vance

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Zone 7 / Elke Rank

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

East Bay Regional Park District / David Vance

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Contra Costa County OES / Beatrice Ponhillo

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

LARPD / Emily Muniz

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

LARPD / Seth Eddings

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

DWR / Tracy Pettit

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Cal OES / Brian Buchhout

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

Cal OES / Melani Gilbert

See image above under the heading San Luis and Delta Mendota Water Authority / Frank Ramus.

City of Newark/Michael Hammon, Mayor/Chair; David Benoun, City manager; Lenka Hovorka, Assistant City Manager; Krysten Lee, Finance Director; Soren Fajeau, Public Works Director; Steven Turner, Community Development Director; Gina Anderson, Police Chief; Ed Miranda, Information Technology Director; Jane Maoas, Police Chief

From: Richard Martinez <Richard.Martinez@newark.org>
Sent: Thursday, August 10, 2023 5:40 PM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Cc: Alec Tune <atune@fremont.gov>; Ricardo Martinez <RicardoM@UnionCity.Org>
Subject: Newark Disaster Council Meeting information

Hi Jeanine,

Please see the attached information from the Newark Disaster Council held in June 2023. Included is the sign-in sheet, agenda and meeting minutes where we note discussion on LHMP project.

Regards,
Richard

CITY OF NEWARK
DISASTER COUNCIL

Police Department, Training Room

37077 Newark Boulevard, Newark, CA 94560 | (510) 578-4821

AGENDA

Thursday, June 22, 2023
5:30 P.M.

I. Roll Call

II. Approval of Minutes of Disaster Council meeting of Thursday, October 13, 2022, meeting. (Motion)

III. Newark

a. Disaster Chair Opening Comments

b. Emergency Services Update Emergency Preparedness Updates

i. Report on Local Hazard Mitigation Plan Project Update
ii. Report Employee Preparedness training
iii. Report on Community Preparedness Outreach
iv. Report on Business Preparedness Outreach

IV. County Updates

a. ACFD update

b. Alameda County Office of Emergency Services (OES) update

V. Community Emergency Response Team (CERT)

a. Program update

CITY OF NEWARK DISASTER COUNCIL SIGN-IN SHEET – 6/22/2023 MEETING

CITY OF NEWARK DISASTER COUNCIL SIGN-IN SHEET – 6/22/2023 MEETING

NAME	POSITION	Signature
(1) Michael K. Hannon	Mayor/Chair	
(2) David Benoun	City Manager	
(3) Lenka Hovorka	Assistant City Manager	
(4) Rich Martinez	Emergency Services Coordinator	
(5) Krysten Lee	Finance Director	
(6) Soren Fajeau	Public Works Director	
(7) Steven Turner	Community Development Director	
(8) Jeffrey Leupke	ACFD Division Chief	
(9) Gina Anderson	Police Chief	
(10) Ed Miranda	Information Technology Director	
(11) Nick Cuevas	Recreation and Community Services Manager	
(12) DJ Cabrera	Senior Emergency Services Coordinator (representative) ALCO OES	
(13) Jacob Reed	Emergency Response and Security Officer (representative) ACWD	
Steve Peterson	(alternate)	

CITY OF NEWARK DISASTER COUNCIL SIGN-IN SHEET – 6/22/2023 MEETING

(14) Vincent Belloni	MOTF Director (representative)	
	Chief Business Official	
Bryan Richards	(alternate)	
(15)	Environmental Health and Safety Program Mgr. (representative)	
Mike Marzano		
(16)	Training and Emergency Response Program Mgr.	
Karoline Terrazas	(alternate) USD	
(17) Barry Stallard	Senior Public Safety Specialist (representative) PG&E	
(18) Ben Peralta	Director of Campus Police and Safety	
	(representative) Ohlone	
	Ohlone College (alternate)	
(19)	St. Edwards School	
(20)	Challenger School	
Lincoln Casimere	Emergency Manager ACFD	

Ohlone / Director of Campus Police

See above images under the heading City of Newark/Michael Hammon, Mayor/Chair; David Benoun, City manager; Lenka Hovorka, Assistant City Manager; Krysten Lee, Finance Director; Soren Fajeau, Public Works Director; Steven Turner, Community Development Director; Gina Anderson, Police Chief; Ed Miranda, Information Technology Director; Jane Maoas, Police Chief.

ACFD / Lincoln Casimere, Emergency Manager

See above images under the heading City of Newark/Michael Hammon, Mayor/Chair; David Benoun, City manager; Lenka Hovorka, Assistant City Manager; Krysten Lee, Finance Director; Soren Fajeau, Public Works Director; Steven Turner, Community Development Director; Gina Anderson, Police Chief; Ed Miranda, Information Technology Director; Jane Maoas, Police Chief.

National Weather Service/ Brian Garcia

From: Jeanine Foster
Sent: Tuesday, October 31, 2023 8:27 AM
To: Brian Garcia - NOAA Federal <brian.garcia@noaa.gov>
Subject: Red Flag Day Data

Good Morning Brian,

We are the consultants working with the City of Fremont on the Tri-City LHMP Update. We are trying to obtain data on the number of red flag days occurring each year since 2016. Sometimes we will obtain that information locally if it is tracked, but the cities do not have this data.

Is this something we can obtain through the National weather Service? Maybe it is a search that we can conduct?

We appreciate any direction on obtaining this data.

Thank you very much,

Jeanine Foster
Foster Morrison Consulting
(303) 717-7171

PG&E / Barry Stallard

From: Jeanine Foster
Sent: Thursday, November 2, 2023 4:14 PM
To: Barry.stallard@pge.com
Subject: Tri-City Local Hazard Mitigation Plan

Good afternoon,

We are the consultant's working with the Cities of Fremont, Newark, and Union City along with the Alameda County Water District (ACWD) and the Union Sanitary District (USD) on developing a Tri-City Local Hazard Mitigation Plan (LHMP) Update. It looks like your contact information is on the project stakeholder list compiled by Alec Tune, the OES lead for the City of Fremont – you might have seen past project meeting invites.

I am reaching out to see if we can obtain information on past PSPS events affecting the Tri-City Planning Area which is essentially the geographic boundaries of the three Cities? We would like to obtain this information by year starting in 2017, but would take any data that you may have. Is this something that you can help us with? Is there someone else we should be reaching out to?

Let me know if you have questions or would like to discuss.

Thank you very much for your assistance with this information.

Jeanine Foster
Foster Morrison Consulting
(303) 717-7171

California Highway Patrol / Brent Bartusch, Tim Willcock

From: Alec Tune <atune@fremont.gov>
Sent: Friday, August 18, 2023 11:30 AM
To: Jeanine Foster <jeanine.foster@fostermorrison.com>
Cc: Richard Martinez <RicardoM@UnionCity.Org>; Rich Martinez <RichM@newark.org>; Jacob Reed <Jacob.Reed@acwd.com>; Karoline Terrazas <karolinet@unionsanitary.ca.gov>
Subject: Fwd: Tri-City Local Hazard Mitigation Plan

FYI

Sent from my iPhone

Begin forwarded message:

Alec Tune
EMERGENCY SERVICES MANAGER

City of Fremont | Fire Department
3300 Capitol Ave. Bldg. A, Fremont, CA 94538
(510) 494-4256 | atune@fremont.gov
Facebook | Twitter | Instagram | Nextdoor | Website | Nixle | MyFremont

From: "Gale, Josh" <JGale@sfwater.org>
Date: August 18, 2023 at 9:10:38 AM PDT
To: Alec Tune <atune@fremont.gov>
Subject: RE: Tri-City Local Hazard Mitigation Plan

Hi Alec,

Please see program agenda and attached attendance roster for meeting on 6/1/2023.

Thanks.

Josh

Program Agenda

12:00 **Kick-off**: Clayton Koopmann, Acting Alameda Watershed Resources Manager

12:05 **Welcome**: Tim Ramirez, Natural Resources and Lands Management Division Manager

12:10 **Introduce SFPUC attendees:** Tim Ramirez
Emergency Planning and Security, Water Supply and Treatment,
Natural Resources and Lands Management

12:15 **Introduce Agency attendees:** Clayton Koopmann

12:20 **Lunch**

1:00 **Agency updates:** All agencies to report.

1:30 **Roundtable Discussion to recap the 2022-2023 winter and flooding events**

1:35 **Tabletop Exercise**

1:55 **Wrap up**

2:00 **Adjourn**

❖

Please sign-in and verify +/or add your information - If your name is missing, add it on the last page							
Signature	Last	First	Agency	Title	Division / Unit	Email	Phone
	Bartusch	Brent	California Highway Patrol	Sergeant	Dublin	Bbartusch@chp.ca.gov	
	Bell	Doug	East Bay Regional Park District	Wildlife Program Manager	Stewardship	DBell@ebparks.org	
	Blanchard	David	Alameda County Sheriff's Office	Commander	Law Enforcement Services	dblanchard@acgov.org	510-529-5492
	Boyd	Thomas	Alameda County Sheriff's Office	Lieutenant		tboyd@acgov.org	
	Brosi	Andrew	Alameda County Sheriff's Office	Deputy	Homeland Security & Emergency Rescue	abrosi@acgov.org	o: 925-803-7808 c: 510-725-7684
	Chang	Rosemary	Sunol Fire Safe Coalition DIABLO FIRE SAFE COU	Board Member		rechang@me.com	510-915-0189
	Chenue	Scott	SF Public Utilites Commission	Biologist	Natural Resources & Lands Management	schenue@sfwater.org	925-789-7278
	Christy	Emmanuel	Alameda County Sheriff's Office	Assistant Sheriff	Alameda County Sheriff's Office	echristy@acgov.org	
	Coleman	Marcus L	SF Public Utilites Commission	Principal IS Analyst	Emergency Planning and Security	mcoleman@sfwater.org	415-308-7004
	Courtney	Val	Alameda County Sheriff's Office	Deputy	Special Investigations Unit	vcourtney@acgov.org	510-225-5968
	Cronin	John	SFPUC Lessee	Owner	Cronin Ranch	croninranch@citlink.net	510-~~[illegible]~~5 510-409-2818
	Dawson	Amy	SF Public Utilites Commission	Community Liaison Manager	Natural Resources & Lands Management	adawson@sfwater.org	o: 925-862-5537 c: 415-653-6239
	De Grange	Connie	Sunol Citizens Advisory Council	Chair		cdegrange@comcast.net	
	De Ponte	Adrienne	SF Public Utilites Commission	ACWC Education & Volunteer Coordinator	Natural Resources & Lands Management	adeponte@sfwater.org	628-255-8878
	Diaz	Zoraida	Fremont Fire Department	Fire Chief	Operations	zdiaz@fremont.gov	510.494.4283
	Duffey	Rick	SF Public Utilites Commission	Watershed Keeper Supervisor	Natural Resources & Lands Management	rduffey@sfwater.org	925-862-5508
	Farruggia	Matthew	Alameda County Sheriff's Office	Captain	Office of Emergency Services	mfarruggia@acgov.org	

(13)

COTCHER TERRENCE EAST BAY Regional parks LT. tcotcher@ebparks.org 510 690 6528

Arnold NICK SFPUC Watershed Keeper NR nickarnold12x@gmail.com 925-337-9097

Please sign-in and verify +/or add your information - If your name is missing, add it on the last page							
Signature	Last	First	Agency	Title	Division / Unit	Email	Phone
	Gale	Josh	SF Public Utilites Commission	Emergency Planning Manager (acting)	Emergency Planning and Security	Jgale@sfwater.org	415-934-3916
	Glass	Brian	Santa Clara County Fire Department	Assistant Fire Chief		brian.glass@sccfd.org	408-455-9129
	Goorjian	Lisa	East Bay Regional Park District	Assistant General Manager	Operations	LGoorjian@ebparks.org	
	Graul	Matt	East Bay Regional Park District	Chief of Stewardship		MGraul@ebparks.org	
	Haga	Ernie	East Bay Regional Park District	Pilot	Police Department Air Support Unit	EHaga@ebparks.org	510-544-3012
	Helae	Khari	East Bay Regional Park District	Asst Fire Chief		khelae@ebparks.org	
	Heppert	James	SF Public Utilites Commission	Distribution Manager	Water Supply & Treatment	jheppert@sfwater.org	
	Higgins	Amanda	SF Public Utilites Commission	Principal Administrative Analyst	Emergency Planning and Security	ahiggins@sfwater.org	415-816-7219
	Huang	George	CalFire	Unit Chief	Santa Clara Unit	George.Huang@fire.ca.gov	408-779-2121
	Imhof	Andrew	SFPUC Lessee	Supervisor	Imhof tractor Service Inc.	timhof@earthlink.net	
	Imhof	Frank	SFPUC Lessee	Vice President	Imhof tractor Service Inc.	timhof@earthlink.net	510-377-9556
	Imhof	Frank	SFPUC Lessee	Supervisor	Imhof tractor Service Inc.	timhof@earthlink.net	925 580 2245
	Jones	Pat	SF Public Utilites Commission	Watershed Keeper	Natural Resources & Lands Management	pjones@sfwater.org	925-~~862-5513~~ 788-7640
	Ken Cooper	Ken Cooper	Spring Valley Fire Department	Assistant Fire Chief	Operations	kcooper@svvfd.org	408-826-1762
	Koopmann	Clayton	SF Public Utilites Commission	Rangeland Manager	Natural Resources & Lands Management	ckoopmann@sfwater.org	925-862-5509
	Krings	Will	Fremont Fire Department	Wildland Battalion Chief	Operations	wkrings@fremont.gov	510-494-4200
	Laine	Krysten	SF Public Utilites Commission	Senior GIS Analyst	Natural Resources & Lands Management	klaine@sfwater.org	925-862-5520

Jim Koopmann used to be

12

Please sign-in and verify +/or add your information - If your name is missing, add it on the last page

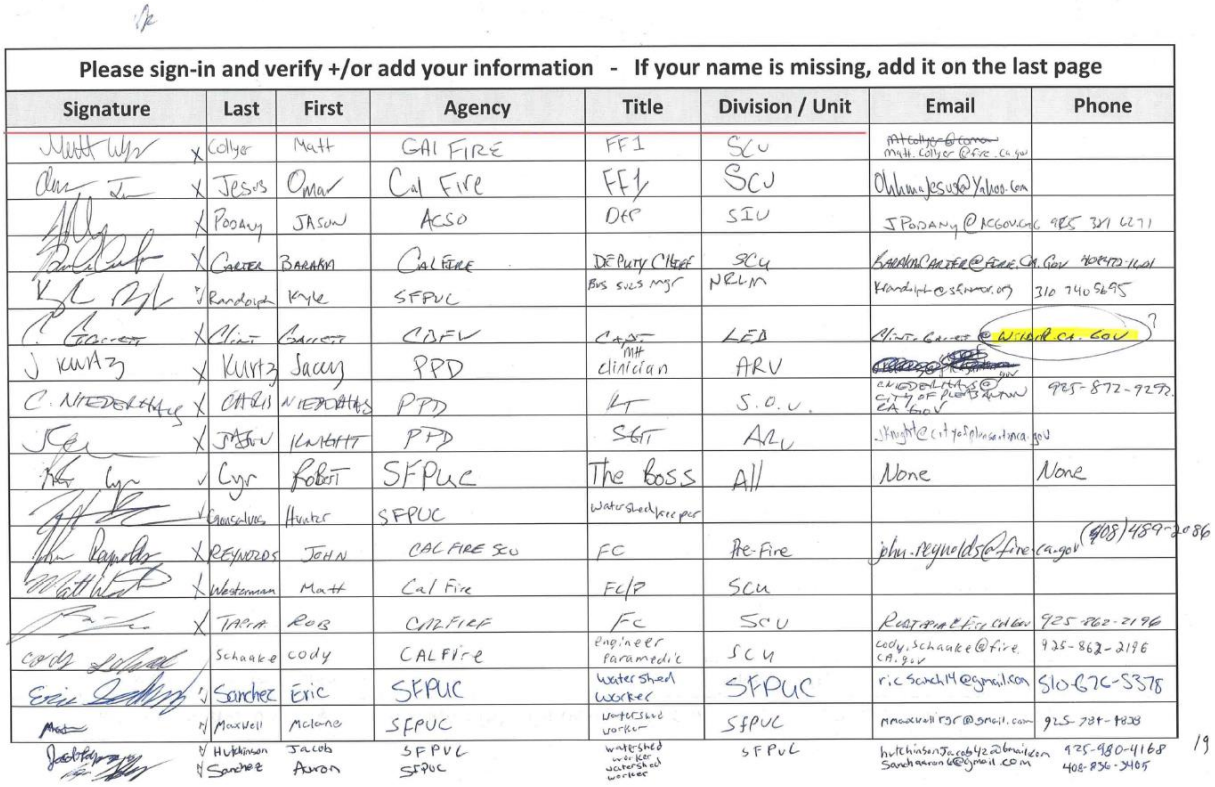
Signature	Last	First	Agency	Title	Division / Unit	Email	Phone
	Lamb	David	SF Public Utilites Commission	Park Section Superviso	Water Supply & Treatment	Dlamb@sfwater.org	650-872-5943
	Lollie	Dennis	Santa Clara County Fire Department	Deputy Chief of Administration + Planning		Dennis.Lollie@sccfd.org	408-458-6684
	Lukins	Jeremy	SF Public Utilites Commission	GIS Manager	Natural Resources & Lands Management	Lukins, Jeremy G	650-652-3217
	Martin	Mike	Pacific Gas & Electric	Emergency Management Supervisor	Wildfire Mitigation	MY1B@PGE.Com	650-505-9916
	McCoy	Ryan	California Dept. of Fish and Wildlife	Lieutenant	Alameda/Contra Costa/Solano	ryan.mccoy@wildlife.ca.gov	510-240-8432
	McLane	Matthew	Pacific Gas & Electric	Supervisor for Vegetation Management	Manage Vegetation Remediation	M7Mh@pge.com>	
	Miron	Oscar	SF Public Utilites Commission	Management Assistant	Emergency Planning and Security	omiron@sfwater.org	415-551-4567
	Moore	Eric	Alameda County Fire Department	Deputy Chief	Support Services	eric.moore@acgov.org	510-693-3402
	Nichols	Jeff	CalFire	Batallion Chief	Sunol Station 14	Jeff.Nichols@fire.ca.gov	925-862-2197
	Noonan	Terry	East Bay Regional Park District	Interpretive Parklands Unit Manager	Operations	Tnoonan@ebparks.org	510-544-3277
	Orre	Ed	CalFire	Division Chief	Santa Clara Unit	edgar.orre@fire.ca.gov	408-206-3704
	Petrini	Marc	Alameda County Sheriff's Office	Sergeant	Tri Valley Supervisor	mpetrini@acgov.org	~~925 321 7926~~ ~~510 225~~ 5913
	Pollard	Mark	East Bay Regional Park District	Fire Dept Operations Capt.	Operations	MPollard@ebparks.org	(510) 501-8045
	Ramirez	Tim	SF Public Utilites Commission	Division Manager	Natural Resources & Lands Management	tramirez@sfwater.org	415-554-3265
	Robertson	Dina	East Bay Regional Park District	Wildland Vegetation Program Manager		DRobertson@ebparks.org	T: 510-544-2344
	Romero	Rene	California Dept. of Fish and Wildlife	Warden	Alameda	rene.romero@wildlife.ca.gov	
	Sanchez	Yesenia Sanchez	Alameda County Sheriff's Office	Sheriff	Alameda County Sheriff's Office	ysanchez@acgov.org	510-272-6866
	Brad Kullgren		SFPUC	watershed keeper		925-980-9543	

13

Please sign-in and verify +/or add your information - If your name is missing, add it on the last page

Signature	Last	First	Agency	Title	Division / Unit	Email	Phone
	Scheuller	Bret	Alameda County Sheriff's Office	Sergeant	Special Duty Unit	bscheuller@acgov.org	510-225-5858
	Serpa	Jerry	Spring Valley Fire Department	Assistant Fire Chief	Operations	jserpa@svvfd.org	408-891-5551
	Sherry	Christopher	California Highway Patrol	Captain, Commander	Dublin Area Office 390	csherry@chp.ca.gov	925-828-0466
	Skubic	Ed	SF Public Utilites Commission	Plumber Supervisor 1	Water Supply & Treatment	eskubic@sfwater.org	925-586-1674
	Solak	Jason	Livermore-Pleasanton Fire Department	Deputy Chief	Operations	jsolak@lpfire.org	925-454-2361
	Stallard	Barry PG+E	Pacific Gas & Electric	Public Safety specialist	Alameda County	B7SX@pge.com	
	Streeter	Johnathan	SF Public Utilites Commission	Senior Communication	External Affairs	JStreeter@sfwater.org	628-215-0940
	Theile	Aileen	East Bay Regional Park District	Fire Chief	Fire Department	atheile@ebparks.org	510-690-6601
	Thomas	David	Pacific Gas & Electric			DLTg@pge.com	
	Thomas	Derrick	Alameda County Fire Department	Division Chief		derrick.thomas@acgov.org	
	Tune	Alec	Fremont Fire Department	Emergency Services Manager	OES	Atune@fremont.gov	(510) 494-4256
	Wickham	Jim	Pacific Gas & Electric			JPWQ@pge.com	
	Willcock	Tim	California Highway Patrol	Lieutenant	Dublin	twillcock@chp.ca.gov	
	Willey	Gordon	East Bay Regional Park District	Sunol Superintendent	Sunol/Ohlone Regional Wilderness	Gwilley@ebparks.org	510-554-3246
	Wilson	Shawn	Alameda County Board of Supervisors	Chief of Staff	Pleasanton	Shawn.Wilson@acgov.org	510-252-6691/ Plt 925-551-6995
	Rivers	Victor	SFPUC	Operating Engineer	WST Sunol	vrivers@sfwater.org	925-785-8288
	So	Simon	Spring Valley Fire	Captain / Pilot		SSO@SVVFD.org	408-393-6887
	Hacke	Mike	Spring Valley Fire	Fire Chief		MHacke@SVVFD.org	408-422-8753
	Moore	Kirk	SFPUC	Cabin Sup.			

15



Please sign-in and verify +/or add your information - If your name is missing, add it on the last page

Signature	Last	First	Agency	Title	Division / Unit	Email	Phone
	Collyer	Matt	CAL FIRE	FF1	SCU	matt.collyer@fire.ca.gov	
	Jesus	Omar	Cal Fire	FF1	SCU	Ohhhmmy.jesus@yahoo.com	
	Podany	JASON	ACSO	DEP	SIU	JPODANY@ACGOV.ORG	925 371 6271
	Carter	Barbara	Cal Fire	Deputy Chief	SCU	Barbara.Carter@fire.ca.gov	707-570-1401
	Randolph	Kyle	SFPUC	Bus svcs mgr	NRLM	krandolph@sfwater.org	310 740 5695
	Collett	Clint	CDFW	Capt	LED	Clint.Collett@wildlife.ca.gov	
	Kurtz	Jacey	PPD	MH clinician	ARV		
	Niederhaus	Chris	PPD	LT	S.O.U.	cniederhaus@cityofpleasantonca.gov	925-872-7292
	Knight	Jason	PPD	SGT	ARV	jknight@cityofpleasantonca.gov	
	Cyr	Robert	SFPUC	The Boss	All	None	None
	Gonsalves	Hunter	SFPUC	Watershed keeper			
	Reynolds	John	CAL FIRE SCU	FC	Pre-Fire	john.reynolds@fire.ca.gov	(408)489-2086
	Westerman	Matt	Cal Fire	FC/P	SCU		
	Tapia	Rob	CALFIRE	FC	SCU	Robert.Tapia@fire.ca.gov	925-862-2196
	Schaake	cody	CALFire	Engineer Paramedic	SCU	cody.schaake@fire.ca.gov	925-862-2196
	Sanchez	Eric	SFPUC	Watershed Worker	SFPUC	ric.sanch14@gmail.com	510-676-5378
	Maxwell	Melanie	SFPUC	Watershed worker	SFPUC	mmaxwell737@gmail.com	925-784-7838
	Hutchinson	Jacob	SFPUC	watershed worker	SFPUC	hutchinsonjacob42@hotmail.com	925-980-4168
	Sanchez	Aaron	SFPUC	watershed worker		sanchaaron6@gmail.com	408-836-3405

19

Alameda County Sheriff's Office / David Blanchard, Thomas Boyd, Andrew Brosi, Val Courtney, Matthew Farrunggia, Marc Petrini, Yesenia Sanchez, Brett Scheuller, Jason Podany

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Sunol Fire Safe Coalition/Diablo Fire Safe Council / Rosemary Chang

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

SF Public Utilities Commission / Scott Chenue, Marcus L. Coleman, Rick Duffey, Josh Gale, Amanda Giggins, Pat Jones, Clayton Koopmann, Jeremy Lukins, Oscar Miron, Tim Ramirez, Brad Killgore, Ed Skubic, Victor Rivers, Kyle Randolph, Robert Cyr

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

SF PUC Lessee: Cronin Ranch / John Cronin

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Sunol Citizens Advisory Council / Connie De Grange

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Santa Clara County Fire Department / Brian Glass, Dennis Lollie

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

East Bay Regional Park District / Matt Graul, Ernie Haga, Mark Pollard, Bordon Willey

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Cal Fire / George Huang, Jeff Nichols, Ed Orre, Matt Collyer, Omar Jesus, Baraka Carter, Ratt Westerman, Cody Schaake, John Reynolds

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

SF PUC Lessee / Imhof Tractor Service, Inc. / Frank Imhof

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

California Department of Fish & Wildlife / Ryan McCoy

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Alameda County Fire Department / Eric Moore, Derrick Thomas

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Spring Valley Fire Department / Jerry Serpa, Simon So, M. Hacke

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Livermore-Pleasanton Fire Department / Jason Solak

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Pacific Gas & Electric / Barry Stallard

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Alameda County Board of Supervisors / Shawn Wildon

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

Pleasanton Police Department / Jacey Kurtz, Jason Knight

See images above under the heading California Highway Patrol / Brent Bartusch, Tim Willcock.

A.4 Meeting Handouts

Below are the handouts for each meeting held during the planning process for this Plan Update.

A.4.1. Planning Committee Kickoff Meeting Handouts

Tri-City LHMP: Hazard Identification and Profiles – 2023-2024

Disaster Declarations and National Weather Service Research

Alameda County – Disaster Declarations 1950-2023

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
2023	California Severe Winter Storms, Flooding, and Mudslides	Flood	Storms	DR-4683	–	1/14/2023
2023	California Severe Winter Storms, Flooding, and Mudslides	Flood	Storms	EM-3591	–	1/9/2023
2020	Covid-19	Pandemic	Pandemic	DR-4482	3/4/2020	1/20/2020
2020	Covid-19	Pandemic	Pandemic	EM-3428	3/4/2020	3/13/2020
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4308	3/7/2017	4/1/2017
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4305	2/10/2017	3/16/2017
2017	California Severe Winter Storms, Flooding, Mudslides	Flood	Storms	DR-4301	–	2/14/2017
2014	California Drought	Drought	Drought	GP 2014-13	1/17/2014	–
2008	2008 January Storms	Flood	Flood	GP-2008-01	12/21/2007	–
2007	Bay Area Oils Spill	Other	Accident	GP-2007-15	11/9/2007	–
2006	California Severe Winter Storms, Flooding, Landslides, Mud Flows	Flood	Storms	DR-1646	–	6/5/2006
2005/2006	2005/06 Winter Storms	Flood	Storms	DR-1628	–	2/3/2006

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
2005	Hurricane Katrina Evacuations	Economic	Hurricane	EM-3248 2005	–	9/13/2005
2003	Road Damage	Flood	Storms	GP 2003	1/1/2003	–
2001	Energy Emergency	Economic	Greed	GP 2001	1/1/2001	–
1998	1998 El Nino Floods	Flood	Flood	DR-1203	Proclaimed	2/19/1998
1997	1997 January Floods	Flood	Storms	DR-1155	1/2/97-1/31/97	1/4/1997
1995	California Severe Winter Storms, Flooding, Landslides, Mud Flows	Flood	Storms	DR-1046	Proclaimed	3/12/1995
1995	1995 Severe Winter Storms	Flood	Storms	DR-1044	1/6/95-3/14/95	1/13/1995
1991	Oakland Hills Fire	Wildfire	Wildfire	DR-919	–	10/22/1991
1990	Freeze	Freeze	Freeze	DR-894	12/19/1990-1/18/1991	2/11/1991
1989	Loma Prieta Earthquake	Earthquake	Earthquake	DR-845	–	9/18/1989
1986	1986 Storms	Flood	Storms	DR-758	2/18-86-3/12/86	2/18/1986
1983	Bradford Levee Failure	Flood	Storms	GP 83-05	12/9/1983 1/18/1984	–
1983	1982-1983 Winter Storms	Flood	Storms	DR-677	12/8/1982-3/21/1983	2/9/1983
1982	California Severe Storms, Flood, Mudslides, High Tide	Flood	Storms	DR-651	1/5/1982	1/7/1982
1981	Mediterranean Fruit Fly Infestation	Agricultural	Insect Pests	GP-1980 Medfly	12/1/1980	–
1979	Gasoline Shortage	Economic	OPEC	–	5/8/1979	–
1977	1976 Drought	Drought	Drought	EM-3023	2/9/1976, 2/13/1976, 2/24/1976, 3/26/1976, 7/6/1976	1/20/1977
1974	Gasoline Shortage	Economic	OPEC	–	2/28/1974 3/4/1974 3/10/1974	–
1973	Eucalyptus Tree Freeze	Freeze	Freeze	DR-373	4/4/1973	5/25/1973

Year	Disaster Name	Disaster Type	Disaster Cause	Disaster #	State Declaration #	Federal Declaration #
1970	Forest and Brush Fires	Wildfire	Wildfire	DR-295	9/24/1970 9/28/1970 10/1/1970 10/2/1970 10/20/1970 11/14/1970	8/29/1970
1970	1970 Northern California Flooding	Flood	Flood	DR 283	1/27/1970 - 3/2/1970	2/16/1970
1963	1963 Floods	Flood	Storms	–	2/14/1964	–
1962	Flood and Rainstorm	Flood	Storms	–	10/17/1962, 10/25/1962, 10/30/1962, 11/4/1962	10/24/1962
1962	Floods and Rains	Floods	Storms	–	10/17/1962 10/25/1962 10/30/1962 11/4/1962	10/24/1962
1958	1958 April Storms and Floods	Flood	Storms	DR-52	4/5/1958	4/4/1958
1958	1958 February Storms and Floods	Flood	Storms	CDO 58-03	2/26/1958	–
1957	Unseasonal and Heavy Rainfall	Flood	Severe Storm, Economic	–	5/20/1957 (Cherry-producing)	–
1955	1955 Floods	Flood	Flood	DR-47	12/22/1955	12/23/1955
1950	1950 Floods	Flood	Flood	OCD 50-01	11/21/1950	–

Source: FEMA, Cal OES, May 2023

Alameda County Disaster Declaration Summary Table by Hazard Type 1950-2023

Disaster Type	State Declarations		Federal Declarations	
	Count	Years	Count	Years
Agricultural	1	1981	0	–
Drought	2	1976, 2014	1	1976
Earthquake	0	–	1	1989
Economic	3	1974, 1979, 2001	0	–
Freeze	2	1973, 1990	2	1973, 1990
Flood (including heavy rains and storms)	19	1950, 1955, 1957, 1958 (twice), 1962, 1963, 1970, 1982, 1983 (twice), 1986, 1995 (twice), 1997, 1998, 2008, 2017 (twice)	19	1955, 1958, 1962 (twice), 1970, 1982, 1983, 1986, 1995 (twice), 1997, 1998, 2005, 2006, 2017 (three), 2023 (twice)
Hurricane	0	–	1	2005
Other	1	2007	0	–
Pandemic	2	2020	2	2020
Road Damage	1	2003	0	–
Wildfire	1	1970	2	1970, 1991
Totals	**32**	–	**28**	**–**

Source: FEMA, Cal OES, May 2023

Alameda County Disasters since 2016/2017 LHMPs

- 2017 Flood (three federal and two state)
- 2020 Pandemic (two federal and two state)
- 2023 Flood (two federal)

Severe Weather Events

NCDC Severe Weather Events for Alameda County 1950-1/31/2022*

Event Type	Number of Events	Deaths	Deaths (indirect)	Injuries	Injuries (indirect)	Property Damage	Crop Damage
Coastal Flood	3	0	0	0	0	$0	$0
Debris Flow	16	0	0	0	0	$12,874,000	$0
Dense Fog	19	0	0	0	0	$0	$0
Dense Smoke	8	0	0	0	0	$0	$0
Excessive Heat	6	0	0	0	0	$0	$0
Flash Flood	12	0	0	0	0	$100,000	$0
Flood	43	0	0	0	0	$44,325,500	$0
Frost/Freeze	4	0	0	0	0	$20,000	$400,000
Hail	14	0	0	0	0	$0	$0
Heat	19	1	1	13	0	$30,000	$0
Heavy Rain	5	0	2	0	1	$60,000	$30,000
High Surf	1	0	0	0	0	$0	$0
Heavy Snow	1	0	0	0	0	$0	$0
High Wind	88	1	0	1	0	$3,210,000	$0
Strong Wind	263	4	0	8	0	$3,753,800	$0
Thunderstorm Wind	2	0	0	0	0	$50,000	$0
Tornado	5	0	0	0	0	$275,000	$0
Tsunami	1	0	0	0	0	$50,000	$0
Wildfire	18	0	0	6	1	$10,000	$0
Winter Storm	6	0	0	0	0	$0	$0
Total	**534**	**6**	**3**	**28**	**2**	**$64,758,300**	**$430,000**

Source: National Climatic Data Center

*Note: Losses reflect totals for all impacted areas

**Due to the regional nature of reporting certain hazard events, these hazards are included in the NCDC database for Alameda County

Tri-City Hazards Comparison Summary

City of Fremont 2016 LHMP	2017 Union City and Newark LHMP	2021 Alameda County Plan	2023 State of California Plan Applicable Hazards*	Proposed 2024 Hazards*
Climate Change (including drought, extreme heat, and sea level rise)	As part of other hazards.	Climate Change	Climate Change and Related Hazards	Climate Change (as a standalone and as it exacerbates other hazards)
Floods (1%/0.2%, coastal flooding, dam inundation	Dam Failure	Dam Failure	Dam Failure	Dam Failure
Climate Change (including drought, extreme heat, and sea level rise) AND Floods (1%/0.2%, coastal flooding, dam inundation	–	As part of the Climate Change Hazard	Sea Level Rise, Coastal Flood, and Erosion	Coastal Flooding and Sea Level Rise
Climate Change (including drought, extreme heat, and sea level rise)	Drought	Drought	Droughts and Water Shortage	Drought & Water Shortage
Earthquake (including liquefaction, tsunami, and seiche)	Earthquake	Earthquake	Earthquake (with Subsidence as a separate hazard)	Earthquake (and earthquake liquefaction)
Floods (1%/0.2%, coastal flooding, dam inundation	Flood	Flood	Riverine, Stream, and Alluvial Flood	Flood: 1%/0.2% annual chance
–	–	Flood	Riverine, Stream, and Alluvial Flood	Flood: Localized/Stormwater Flooding
Landslides	Landslide	Landslide	Landslide, Debris Flow, and other Mass Movements	Landslide
–	–	–	Levee Failure	Levee Failure
–	–	Infectious Disease	Epidemic/Pandemic/Vector-Borne Disease	Pandemic
–	–	Public Safety Power Shutoff		*

City of Fremont 2016 LHMP	2017 Union City and Newark LHMP	2021 Alameda County Plan	2023 State of California Plan Applicable Hazards*	Proposed 2024 Hazards*
Climate Change (including drought, extreme heat, and sea level rise)	Severe Weather	–	Extreme Heat	Severe Weather: Extreme Heat
–	Severe Weather	–	Severe Wind, Weather, and Storms	Severe Weather: Heavy Rain and Storms
Earthquake (including liquefaction, tsunami, and seiche)	–	Tsunami	Tsunami and Seiche	Tsunami
–	Severe Weather	–	Severe Wind, Weather, and Storms	Severe Weather: High Winds
Fire	Wildfire	Wildfire	Wildfire	Wildfire (with smoke/ air quality)

*Power Outages/PSPS – address as part of vulnerability

Tri-City Hazard Identification 2024: Tri-City Planning Area

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change (as a standalone hazard and as it exacerbates other hazards)					–
Coastal Flooding and Sea Level Rise					High
Dam Failure					Medium
Drought & Water Shortage (w/tree mortality)					High
Earthquake (and earthquake liquefaction)					Low
Flood: 1%/0.2% annual chance					High
Flood: Localized/Stormwater Flooding					Medium
Landslide					Medium
Levee Failure					Medium
Pandemic					Medium
Severe Weather: Extreme Heat					High
Severe Weather: Heavy Rain and Storms					Medium
Severe Weather: High Winds					Medium
Tsunami					Low
Wildfire (with smoke/ air quality)					Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Tri-City Hazard Identification 2024: _____

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change (as a standalone hazard and as it exacerbates other hazards)					–
Coastal Flooding and Sea Level Rise					High
Dam Failure					Medium
Drought & Water Shortage (w/tree mortality)					High
Earthquake (and earthquake liquefaction)					Low
Flood: 1%/0.2% annual chance					High
Flood: Localized/Stormwater Flooding					Medium
Landslide					Medium
Levee Failure					Medium
Pandemic					Medium
Severe Weather: Extreme Heat					High
Severe Weather: Heavy Rain and Storms					Medium
Severe Weather: High Winds					Medium
Tsunami					Low
Wildfire (with smoke/ air quality)					Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

HISTORIC HAZARD EVENTS WORKSHEET

Please fill out one sheet for each significant hazard event with as much detail as possible. Attach supporting documentation, photocopies of newspaper articles, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

	Please return worksheets by mail, email, or fax to: Jeanine Foster, Foster Morrison 6095 Zang Way Arvada, CO 80004 fax: (720) 893-0863 email: jeanine.foster@fostermorrison.com
Prepared by:	
Phone:	
Email:	
Date:	

A.4.2. Planning Committee Risk Assessment Meeting Handouts

*LHMP Update Project Schedule/Key Dates**

2023-2024 LHMP Update Meetings

- **August 17** (Thursday) PC Meeting #2 (Risk Assessment) (1:00-4:00 pm)
- **August 17** (Thursday) Public Meeting #2 (Risk Assessment) (6:00-7:30 pm)
- **September 19** (Tuesday) PC Meeting #3 (Mitigation Strategy: Goals Development) (1:00-4:00 pm)
- **September 20** (Wednesday) PC Meeting #4 (Mitigation Strategy: Actions and Projects) (9:00 am - 12:00 pm)
- **January 24** (Wednesday) Final Public Meeting #3 (6:00-7:30 pm)
- **January 25** (Thursday) PC Meeting #5 (9:00 am -12:00 pm)

Mitigation Strategy Meetings - Follow up

- **September 29 (**Friday**)** Mitigation Strategy (goals/actions) processed and sent to Project Team/PC
- **October 27** (Friday) Mitigation Action (Project)Worksheets due to Foster Morrison

LHMP Document Drafts

- **November 10** (Friday): PC (First) Draft LHMP to Project Team/PC
- **December 8** (Friday): Project Team/PC comments due on Draft Plan
- **December 21** (Thursday): Comments incorporated into Public Review (Second) Draft to Project Team/PC
- **January 2** (Tuesday): Public Review Draft on Participating Jurisdictions' websites
- **February 2** (Friday**):** all Project Team, PC and Public input to Foster Morrison
- **February 16:** All final comments incorporated and LHMP submittal to Cal OES – February 2024

*PC = Planning Committee

Table 3 Tri-City Planning Area Hazard Identification Table

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly Likely	Critical	High	–
Coastal Flooding and Sea Level Rise	Limited	Highly Likely	Limited	Med-High	High
Dam Failure	Sig – Ext.	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Extensive	Likely	Limited	Medium	High
Earthquake	Extensive	Occasional/ Highly Likely	Catastrophic	High	Low
Flood: 1%/0.2% annual chance	Significant	Occasional	Critical	High	High
Flood: Localized/Stormwater Flooding	Extensive	Highly Likely	Limited	Medium	Medium
Landslide	Limited	Likely	Limited	Medium	Medium
Levee Failure	Limited	Unlikely	Limited	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Highly Likely	Limited	Low-Med	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rain and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds	Extensive	Highly Likely	Negligible	Low-Med	Medium
Subsidence	Limited	Likely	Negligible	Low	Medium
Tsunami	Limited	Unlikely	Limited	Low-Med	Low
Wildfire	Limited	Highly Likely	Critical	Medium	Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Risk Assessment Methodology

Calculating Likelihood of Future Occurrence

The frequency of past events is used in this section to gauge the likelihood of future occurrences. Based on historical data, the likelihood of future occurrence is categorized into one of the following classifications:

- **Highly Likely**: Near 100% chance of occurrence in next year, or happens every year.
- **Likely**: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
- **Occasional**: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
- **Unlikely**: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Calculating Vulnerability

Vulnerability is measured in general, qualitative terms, and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential:

- **Extremely Low**: The occurrence and potential cost of damage to life and property is very minimal to non-existent.
- **Low**: Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**: Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**: Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have already occurred in the past.
- **Extremely High**: Very widespread and catastrophic impact.

Defining Significance (Priority) of a Hazard

Defining the significance or priority of a hazard to a community is based on a subjective analysis of several factors. This analysis is used to focus and prioritize hazards and associated mitigation measures for the plan. These factors include the following:

- **Past Occurrences**: Frequency, extent, and magnitude of historic hazard events.
- **Likelihood of Future Occurrences**: Based on past hazard events.
- **Ability to Reduce Losses through Implementation of Mitigation Measures**: This looks at both the ability to mitigate the risk of future occurrences as well as the ability to mitigate the vulnerability of a community to a given hazard event.

Risk Assessment Summary: Tri-City 2023 LHMP

Climate Change

- The 2023 State of California Hazard Mitigation Plan stated that climate change is clearly affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year. The number, magnitude, and severity of hazard events and disasters are significantly increasing resulting in catastrophic events. Climate Change has the potential to significantly alter the nature and frequency of most hazards.
- EACH JURISDICTION HAS A VARIETY OF CLIMATE DOCUMENTS. ARE ANY NEW CLIMATE CHANGE DOCUMENTS BEING DEVELOPED/OLD ONES BEING UPDATED?
- CAN YOU IDENTIFY SPECIFIC CLIMATE CHANGE CONCERNS/ISSUES TO NOTE IN THE PLANNING AREA?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Coastal Flooding and Sea Level Rise

- No state or federal disaster declarations specific to coastal flooding and sea level rise; although coastal flooding was likely a component of many of these disaster declarations. The NCDC reported 4 events of coastal flooding and high surf for Alameda County.
- The frequency and severity of coastal flooding is expected to increase as sea levels rise.
- The western edge of the Tri-City Planning Area encompasses miles of shoreline, which is subject to coastal flooding and SLR.
- Coastal flooding is more intense during periods of king tides. NOAA notes that a king tide is a non-scientific term people often use to describe exceptionally high tides. Higher than normal tides typically occur during a new or full moon and when the Moon is at its perigee, or during specific seasons around the country. 2 weeks ago there was damage in Southern California (Newport Beach and Sunset Beach) due to king tide events. Should flooding occur around a king tide, damages in the Tri-City would be higher.
- ANY INPUT ON COASTAL FLOODING AND SEA LEVEL RISE IN THE PLANNING AREA? SPECIFIC TO EACH JURISDICTION? PAST OCCURENCES? OTHER ISSUES/CONCERNS/IMPACTS?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium? High?
- Priority Hazard

Dam Failure

- There are 23 dams in Alameda County that were constructed for flood control, storage, treatment impoundments, electrical generation, and recreational purposes. Of the 23 dams in Alameda County, 11 were rated as Extremely High Hazard, 7 are rated as High Hazard, 3 as Significant Hazard, and 2 as

Low Hazard. Outside of Alameda County, 2 EH Hazard dams located in Santa Clara County also have inundation areas that intersect with the Tri-City Planning Area.

- Of these dams, 7 Extremely High Hazard, 2 High Hazard, and 3 Significant Hazard dams have the potential to impact (i.e., inundation areas) the Tri-City Planning Area.
- 1 of the Extremely High Hazard dams (Decoto), 2 High Hazard dams (Middlefield, Quarry Pits) and 2 Significant Hazard dams (Shinn, Rubber Dam #3, and Patterson) are owned by ACWD.
- ARE THERE ANY DAM FAILURE, OR OTHER INCIDENTS/ISSUES TO NOTE ASSOCIATED WITH ANY OF THE DAMS OF CONCERN?
- WHICH DAM(S) ARE THE TRI-CITY PLANNING AREA MOST CONCERNED WITH?
- ANY SPECIFIC DAM VULNERABILITIES/ISSUES/CONCERNS TO NOTE – BOTH FOR ALL DAMS AND SPECIFIC TO ACWD OWNED DAMS?
- Likelihood of Future Occurrence: Occasional?
- Vulnerability: Extremely High
- Priority Hazard

Drought and Water Shortage

- Historical drought data for the Tri-City Planning Area and region indicate there have been 5 significant multi-year droughts in the last 84 years.
- 2 state disaster declarations in 1976 and 2014; 1 federal disaster declaration in 1976
- ACWD supplies water to the Tri-City Planning Area. Their supply includes water that originates as precipitation within the Alameda Creek watershed and water that is transported from the Sacramento/San Joaquin River Delta through the South Bay Aqueduct. Sixteen wells are used to pump water from the groundwater basin to a system of distribution mains serving residents and businesses. These 16 wells are capable of producing up to 47.5 million gallons of water per day (MGD). An additional 20 percent of ACWD's water supply comes from the Hetch Hetchy Reservoir in Yosemite National Park. That water is purchased from the San Francisco Public Utilities Commission. ACWD also receives about 10 MGD of water from the Newark Desalinization Facility. This is the first brackish water desalinization (Desal) facility in Northern California.
- During the 2014-2016 drought years, ACWD customers reduced overall water use by 28% relative to baseline demands in 2013. The District experienced unprecedented participation in water use efficiency programs during the 2014-2016 drought years, as well as continued water use efficiency savings from plumbing code requirements, and currently estimated in its UWMP that a permanent 11% demand reduction will last beyond the end of drought. DID THIS OCCUR? THE AREA HAS LOST POPULATION SINCE 2020, HAS THIS LESSENED WATER DEMAND?
- WHAT HAS BEEN IMPACTED THE MOST FROM DROUGHT CONDITIONS?
- HOW HAS WATER SUPPLY BEEN AFFECTED IN THE TRI-CITY PLANNING AREA FROM THIS MOST RECENT DROUGHT?
- WHAT ARE THE MOST SIGNIFICANT CONCERNS/ISSUES ASSOCIATED WITH DROUGHT AND WATER SHORTAGE MOVING FORWARD?
- Likelihood of Future Occurrence: Likely
- Vulnerability: Medium? High?
- Priority Hazard

Earthquake

- Geological data indicates that the Bay Area is located within an area of relatively high seismic activity and is traversed by multiple faults associated with the Pacific and North American plates.
- Level of earthquake hazard varies substantially by location and is primarily determined by several factors: earthquake magnitude, earthquake epicenter, earthquake depth, and soil and rock conditions.
- Since 1836, eight earthquakes of magnitude 6.0 or greater have occurred in the region. These include: 1906 M7.8 San Francisco; 1984 M6.4 Morgan Hill; 1989 M7.1 Loma Prieta; 2014 M6.0 Napa.
- Since 1950, there has been 1 disaster declaration in both Alameda County for the 1989 Loma Prieta Earthquake.
- Since 1950, there have been 35 earthquakes >5.0 occurring within 90 miles of the Planning Area (centered on Fremont)
- For the Tri-City Planning Area, the most damaging earthquakes would be those nearest to the Tri-City area (especially the Hayward Fault, as compounded by the Rogers Creek Fault, and the Calaveras Fault, but also to a lesser extent possibly the Concord and Greenville Faults.) Large earthquakes on the San Andreas fault could also affect the Planning Area.
- Various Hazus Scenarios are being developed to model impacts associated with earthquake events on several of these faults.
- Damages from earthakes may include those from ground shaking and surface rupture and also include secondary impacts from earthquake liquefaction, earthquake induced landslides, dam, reservoir and levee failures, and fires.
- Based on analysis of the Alquist-Priolo fault zones (where surface rupture could occur), portions of the Tri-City Planning Area is located in Alquist Priolo Zones.
- The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The Planning Area is within the more hazardous Zone 4.
- The expected consequences of a major earthquake on the Tri-City Planning Area include not only building damages but also casualties (injuries and deaths) and loss of important functions. The buildings at most risk are older buildings, designed to lower seismic performance standards than current or recent code buildings, especially buildings that are non-ductile such as masonry buildings.
- HAVE ANY OF THE JURISDICTIONS CONDUCTED A URM INVENTORY OR INVENTORY OF SEISMICALLY VULNERABLE FACILITIES?
- The impacts of earthquake damage to the Tri-City Planning Area built environment, including critical facilities and infrastructure, would include not only reconstruction costs, but also loss of function and life safety risk.
- Liquefaction is a process where loose, wet sediments lose bearing strength during an earthquake and behave similar to a liquid. Settling or lateral spreading can cause major damage to buildings and to infrastructure such as roads, underground utilities, and levees.
- Based on the CGS Seismic Hazard Zone (liquefaction) Maps, the Tri-City Planning Area is underlain by many areas at risk to liquefaction. Almost the entire Planning Area is in the Moderate, High, or Very High Liquefaction Susceptibility Zones.
- In addition, several areas within the Tri-City Planning Area are also prone to earthquake induced landslides based on CGS mapping. These areas are generally confined to the sloped areas of the Planning Area where the susceptibility to landslides are greatest. This is predominantly in the Hills Open Space Area within the eastern portion of the Planning Area.

- WHAT FAULTS/EARTHQUAKE EVENTS ARE THE MOST CONCERNING TO THE TRI-CITY PLANNING AREA?
- WHAT ARE THE SIGNIFICANT ISSUES/IMPACTS/CONCERNS RELATED TO EARTHQUAKE?
- Likelihood of Future Occurrence: Likely
- Vulnerability: Extremely High
- Priority Hazard

Flood Hazards

FEMA Mapped Floodplains - 1%/0.2% year

- Historically, flooding associated with severe winter storms has been among the most common disasters in the Bay Area. The Tri-City Planning Area has frequently suffered significant damage in past severe winter storms from floods as well as from high winds, landslides, debris flows and erosion.
- 20 state federal disaster declarations related to heavy rains and flooding in Alameda County.
- 55 NCDC flood events since 1993 for Alameda County.
- The Tri-City Planning Area generally has several winter storm events every year, with damages in these events ranging from minor cleanup to millions of dollars. 4 severe storm events occurred in 1986, 1998 and 2005-2006, and 2016. Since 2016, 3 federal and 2 state declarations for severe storms and flooding occurred in 2017. There have been three federal disaster declarations to date from flooding in 2023.
- The most common damage from winter rains and storms and associated flooding have been to infrastructure, including: washouts of culverts; landslides or debris slides affecting roads, and bridges; erosion of channels and adjacent areas; and tree falls.
- WHAT ARE THE MOST SIGNIFICANT FLOOD VULNERABILITIES TO THE PLANNING AREA? UNIQUE AREAS, INFRASTRUCTURE, ASSETS, ETC.
- ANY OTHER ISSUES/IMPACTS/CONCERNS TO NOTE?
- Likelihood of Future Occurrence: 1%-Occasional; 0.5%-Unlikely;
- Vulnerability: High
- Priority Hazard

Localized/Stormwater flooding

- Flood hazard areas for the Tri-City Planning Area are not limited to areas within FEMA-mapped floodplains, and include areas affected by localized, stormwater flooding events.
- Since the last plan, 6 federal and 4 state declarations for heavy rain and storms, flooding, and other damages occurred.
- ARE THERE ANY SPECIFIC TRI-CITY LOCALIZED FLOODING PROBLEM AREAS TO NOTE? NEED LIST OF PROBLEM AREAS AND SPECIFIC FLOOD RELATED ISSUES FOR EACH JURISDICTION. WE HAVE FREMONT AREAS AND A REPORT OF DAMAGES FROM THE 2023 FLOODS. DO YOU HAVE THESE FROM 2017? DO NEWARK AND UNION CITY HAVE THEIR REIMBURSEMENT REQUEST INFORMATION FROM 2017 AND 2023 THEY CAN PROVIDE? CAN WE ALSO GET SPECIFICS FROM ACWD AND USD.
- ANY OTHER ISSUES/IMPACTS/CONCERNS TO NOTE?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Landslide

- Historically, the Tri-City Planning Area has experienced damages from various slope failures associated with heavy rains and winter storm events. Fremont was close to being in the path of the 1998 Mission Peak slide. Also, in December of 2022 and again in January of 2023, Niles Canyon Road in Fremont was closed due to mudslides.
- IDENTIFY OTHER HISTORIC PROBLEM AREAS WITHIN THE TRI-CITY PLANNING AREA? NEED BY JURISDICTION. INCLUDE AREAS AND ISSUES ASSOCIATED WITH HISTORIC SLOPE FAILURE? HAVE ANY AREAS BEEN MITIGATED?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Levee Failure

- There are numerous levee segments in the Tri-City Planning Area.
- Levee failures can occur during high water events and under normal non-flood conditions. There are numerous causes for such failures, including scour, foundation failures, under-seepage, through-seepage, animal burrows, and others. Levees can also fail as a result of earthquakes.
- The probability of levee failure is increasing over time due to sea level rise, increased flooding potential from global climate range resulting in early winter snow melts, and the likelihood of an earthquake.
- Based on the DFIRMS, there are several 0.2%, X-protected by levee flood zones that protect the Tri-City Planning Area. (Note: This is based on levees that are certified as providing 100-year level of protection). However, other non-certified levee segments are located throughout the Planning Area.
- No disaster declarations for levee failure have occurred in Alameda County since 1950.
- HAVE ANY OF THE JURISDICTIONS EVER BEEN AFFECTED BY A LEVEE FAILURE ISSUE?
- ARE THERE ANY SPECIFIC LEVEES/AREAS THAT ARE A CONCERN TO THE PLANNING AREA? DO ANY OF THE JURISDICTIONS OWN OR MAINTAIN ANY LEVEES?
- WHAT ARE THE MOST SIGNIFICANT CONCERNS/ISSUES WITH THESE LEVEES?
- Likelihood of Future Occurrence: Occasional
- Vulnerability: Medium?
- Priority Hazard

Severe Weather

Extreme Cold and Freeze

- The Planning Area experiences annual occurrences of winter weather, including extreme cold and freeze. Alameda County's monthly average maximum temperatures in the coldest months (November through March) range from the low-40s to the mid-50s. The lowest recorded daily extreme was 21°F on December 22, 1922. In a typical year, maximum temperatures fall below 32°F on 6.5 days.
- No federal disaster declarations related to freeze or Cold. 5 NCDC events for extreme cold and freeze/snow since 1996.
- ANY NOTABLE EXTREME COLD/FREEZE EVENTS SINCE 2016? DAMAGES/IMPACTS?
- WHAT ARE THE BIGGEST CONSERNS/ISSUES RELATED TO EXTREME COLD AND FREEZE?
- Likelihood of Future Occurrence: Highly Likely

- Vulnerability: Medium
- Priority Hazard

Extreme Heat

- Annual occurrences – it gets hot every summer. In Alameda County, monthly average maximum temperatures in the warmest months (June through September) range from the upper-60s to the low 70s. The highest recorded daily extreme was 109°F on September 4, 1971. In a typical year, maximum temperatures exceed 90°F on 3.5 days.
- The NCDC data shows 25 extreme heat incidents for both Alameda County since 1996.
- September of 2022 saw many hot days, with cooling centers being opened. A state proclamation was made for the heat.
- ANY SPECIFIC INSTANCES OF HEAT THAT CAUSED DAMAGES OR ISSUES FOR THE PLANNING AREA? ESPECIALLY THOSE SINCE 2016? ANY OTHER EVENTS WHERE COOLING CENTERS WERE OPENED?
- BIGGEST HEAT RELATED ISSUES/CONCERNS/IMPACTS?
- Climate change will affect this hazard in the future.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Heavy Rains and Storms (Thunderstorms, Hail, Lightning)

- Significant Tri-City Planning Area history: annual occurrences. According to the WRCC, average annual precipitation in the Planning Area is 14.31 inches per year. The highest recorded annual precipitation is 31.52 inches in 1983; the highest recorded precipitation for a 24-hour period is 13.67 inches on March 1, 1907. The lowest recorded annual precipitation was 6.89 inches in 1959.
- 20 state and federal disaster declarations related to heavy rains and flooding in Alameda County; 27 NCDC heavy rain and storm events since 1993 in Alameda County.
- Severe storms/heavy rains are the primary cause of most major flooding. It also contributes to landslides, debris flows, and erosion in the Planning Area.
- The Tri-City Planning Area generally has several winter storm events every year, with damages in these events ranging from minor cleanup to millions of dollars. 4 severe storm events occurred in 1986, 1998 and 2005-2006, and 2016. Since the last plan, 3 federal and 2 state declarations for severe storms and flooding occurred in 2017. There have also been three federal disaster declarations to date from severe storms and flooding in 2023.
- The most common damage from winter rains and storms and associated flooding have been to infrastructure, including: washouts of culverts; landslides or debris slides affecting roads, and bridges; erosion of channels and adjacent areas; and tree falls. OTHER IMPACTS/ISSUES?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

High Winds and Tornadoes

- Annual occurrences of high wind events

- No state or federal disaster declarations. The NCDC data recorded 358 high wind incidents for Alameda County since 1955. This includes 3 tornado events (all of which were F0 – 1982, 1992, 1994).
- ANY NOTABLE HIGH WINDS OR TORNADO EVENTS SINCE 2016?
- WHAT ARE THE PLANNING AREA'S BIGGEST CONCERNS/ISSUES/IMPACTS WITH HIGH WINDS? ANY TREE BLOW DOWN EVENTS? OTHER ISSUES?
- HOW MANY PSPS EVENTS HAS THE TRI-CITY PLANNING AREA EXPERIENCED?
- WHAT OTHER TYPES OF POWER OUTAGE EVENTS HAS THE PLANNING AREA EXPERIENCED, THAT MIGHT BE RELATED TO HIGH WINDS?
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Subsidence

- According to the 2023 State HMP, the primary causes of subsidence in California is associated with groundwater pumping, Peat Loss, and Oil extraction.
- Union City mentioned a sinkhole in 2023 occurred. They noted that "We have seen other sink holes develop in Union City in the past and believe this will likely occur in our city again."
- DO YOU KNOW THE CAUSE OF THE SINKHOLES?
- HAVE OTHER JURISDICTIONS EXPERIENCED ANY SUBSIDENCE RELATED ISSUES?
- USD in their Sea Level Rise Report noted that the National Research Council tracks subsidence and their "values include subsidence of 1.5 mm yr-1 for all of California south of Cape Mendocino due to deep tectonic movements." The report also noted potential subsidence issues resulting from the added fill in the area on poorly compacted Bay Muds.
- 2023 State Plan has Tri-City mapped near an area where subsidence is occurring to groundwater pumping. HAS THIS CONTRIBUTED TO SUBSIDENCE IN THE PLANNING AREA?
- WHAT ARE THE BIGGEST VULNERABILITIES RELATED TO SUBSIDENCE IN THE PLANNING AREA?
- Likelihood of Future Occurrence: Unlikely – Occasional
- Vulnerability: Medium
- Priority Hazard?

Tsunami

- There has been no state or federal disaster declarations in Alameda County due to tsunami. The NCDC identifies 1 Tsunami event for Alameda County - March 11, 2011.
- The 2021 Alameda County LHMP reported that more than 71 tsunamis have been recorded in San Francisco Bay since 1854. Most of these tsunamis were generated by earthquakes in distant subduction zones near Russia, Japan, or Alaska. The worst tsunami to hit the Bay Area was generated in Alaska by a M 9.2 earthquake on March 27, 1964. This event produced a 2-foot runup in the nearby City of Alameda and a 4-foot runup in the City of Oakland. On March 11, 2011, a tsunami generated in Japan from the Fukushima earthquake resulted in a 2-foot runup in the nearby cities of Alameda and Berkeley.
- DID THE TRI-CITY PLANNING AREA EXPERIENCE ANY DAMAGES/IMPACTS FROM PAST TSUNAMI EVENTS? WERE ANY SPECIFIC AREAS IN THE PLANNING AREA INUNDATED?
- Biggest tsunami impacts to natural resources (wetlands, endangered species, and species habitat). TRUE? HAVE STRUCTURES OR INFRASTURE BEEN IMPACTED BY PAST EVENTS?
- OTHER IMPACTS/ISSUES/CONCERNS TO THE TRI-CITY JURISDICTIONS?

- Likelihood of Future Occurrence: Unlikely – Occasional
- Vulnerability: Medium
- Priority Hazard?

Wildfire

- Wildfires occur on an annual basis in the Tri-City Planning Area.
- Any ignition has the potential to become an out of control wildfire.
- 1 state (1970) and 2 federal (1970 and 1991 (Tunnel Fire)) disaster declarations since 1950. 18 NCDC Events.
- Under normal conditions, most fires that start in the Tri-City Planning Area are efficiently controlled by firefighters with no loss of life or structures. A phenomenon known as "Diablo winds" can affect the severity of a wildfire. Red Flag days occur during conditions of low humidity, high temperatures, and hot, dry Diablo winds blowing in from the east and usually occur in the fall months. In recent years, these events are occurring more often.
- During the 75-year period between 1923 and 1998, 11 Diablo wind-driven fires in the Berkeley/Oakland hills burned a total of 9,840 acres, destroyed more than 4,000 homes, took 26 lives, and resulted in over $2 billion in financial losses. The most significant fire in this period was the October 20, 1991 Tunnel Fire in the Oakland-Berkeley hills. The fire resulted in 25 deaths, 150 injuries, and the displacement of over 10,000 persons. With destruction and damage to over 3,400 residential units, losses were in excess of $1.5 Billion in 1991 dollars.
- The threat of catastrophic wildfires under Diablo wind conditions presents significant risks to public health and safety, homes, and property along the wildland-urban interface. This risk increases with an increase in development along the wildland-urban interface.
- Recent drought conditions have exacerbated and continues to exacerbate the risk of major wildland/urban interface fires in or near the Tri-City Planning Area.
- DOES THE TRI-CITY PLANNING AREA TRACK RED FLAG DAYS?
- CAN WE GET LOCAL FIRE LOGS SINCE 2016 FROM THE CITIES? WE HAVE IT FROM FREMONT.
- Wildfire smoke from other areas outside the Planning Area have occurred numerous times in the past. Though the fire itself may not affect the Tri-City, smoke and air quality effects have been felt.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Extremely High
- Priority Hazard

A.4.3. Mitigation Strategy Meeting Handouts

Handouts specific to the two Mitigation Strategy Meetings can be found in Appendix C.

A.4.4. CRS Committee Activity 510 Meeting Handout

Tri-City 2024 Local Hazard Mitigation Plan

What is Hazard Mitigation Planning?

Hazard mitigation is defined by FEMA as any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards (44 CFR 201.2). Hazard mitigation is the effort to reduce loss of life and property by lessening the impact of disasters. It is most effective when implemented under a comprehensive, long-term mitigation plan. State, tribal, and local governments engage in hazard mitigation planning to identify risks and vulnerabilities associated with natural disasters, and to develop long-term strategies for protecting people and property from future hazard events. Mitigation plans are key to breaking the cycle of disaster damage, reconstruction, and repeated damage. Developing hazard mitigation plans enables state, tribal, and local governments to:

- Increase education and awareness around natural hazards and community vulnerabilities
- Build partnerships for risk reduction involving government, organizations, businesses, and the public
- Identify long-term, broadly supported strategies for risk reduction
- Align risk reduction with other state, tribal, or community objectives
- Identify implementation approaches that focus resources on the greatest risks and vulnerabilities
- Communicate priorities to potential sources of funding

Moreover, a FEMA-approved hazard mitigation plan is a condition for pursuing certain FEMA pre- and post-disaster mitigation grants.

The new 2024 Tri-City Local Hazard Mitigation Plan (LHMP) will meet the requirements of the Disaster Mitigation Act of 2000 and the National Flood Insurance Program (NFIP) Community Rating System (CRS).

Community Rating System

The FEMA NFIP CRS provides criteria for the rating of participating jurisdictions' floodplain management systems on a 1 to 10 scale. The highest rating is Class 1. Credits toward improving a local government's rating are obtained through a variety of actions, which include developing, updating, and maintaining a Local Hazard Mitigation Plan, and forming a CRS Steering Committee to advise local floodplain management planning. An improved rating results in reduced flood insurance premiums for residents and businesses who are required, or opt, to maintain flood insurance.

The following table provides the flood insurance premium discounts according to CRS Class. The City of Fremont is currently a CRS Class 7 community. The Cities of Newark and Union City currently do not participate in the CRS but may opt to do so in the future. Actions taken now as part of the Tri-City LHMP planning process could improve future flood insurance ratings.

CRS Class	Required CRS Credits	CRS Discount (Premium Reduction)
1	4,500+	45%
2	4.000 – 4,999	40%
3	3.500 – 3,999	35%
4	3,000 – 3,499	30%
5	2,500 – 2,999	25%
6	2,000 – 2499	20%
7	1,500 - 1,999	15%
8	1,000 – 1,499	10%
9	500 – 999	5%
10	0 – 499	0

How Do Local Governments and Public and Private Stakeholders Participate?

FEMA, through their Local Hazard Mitigation Plan (LHMP) development process, provides a mechanism for local government jurisdictions, and public and private stakeholders to be part of a FEMA-approved LHMP. There are two primary types of participation to a multi-jurisdictional LHMP:

- **Participating Jurisdiction**. A local government agency can be a formal participating jurisdiction to a multi-jurisdictional LHMP Update. This requires development of a jurisdictional-focused Annex to the LHMP that entitles the jurisdiction to seek FEMA approval of the LHMP specific to their jurisdiction and provides the jurisdiction with eligibility for pursuing pre-and post-FEMA mitigation funds. Participating jurisdictions must actively and timely participate in the LHMP Update process.

- **Participation as a Stakeholder.** In addition to participation from formal participating jurisdictions, FEMA requires and encourages other federal, state, and local agency and public and private stakeholder participation in the LHMP development process. Stakeholder participation is critical to the success of any LHMP as they can provide critical natural hazard knowledge and data needed to develop a comprehensive LHMP that serves the community.

Collectively, these two groups constitute the LHMP Planning Committee, which guides the development of the LHMP.

Tri-City 2024 LHMP: CRS Steering Committee

A CRS Steering Committee, a subset of the LHMP Planning Committee, is being established to guide the floodplain management and CRS components of the LHMP in order to prevent and reduce flood losses in

Fremont, Newark, and Union City (the Tri-City LHMP Planning Area). The CRS Steering Committee will meet requirements of the NFIP's CRS Program, Activity 512(a), Floodplain Management Planning.

The CRS Steering Committee performs the following functions:

- Provides input on the assessment of flood risk and assists in the identification of mitigation actions and projects to better protect the people and property in Tri-City LHMP Planning Area from the adverse effects of flood hazards.

- Provides input on minimizing vulnerability to flooding and protecting the natural and beneficial functions of the floodplain.

Public and stakeholder participation is essential to mitigation planning because citizen and community-based input provides the entire LHMP Planning Committee with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions through community engagement with those directly affected by the decisions of public officials. Further, as public stakeholders become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the flood hazards present in their community and take the steps necessary to reduce their impact.

Participation Requirements

Steering Committee participants must actively participate in the LHMP development process with a primary focus on the flood hazard(s). Participation means:

- Attend and participate in a flood-focused Steering Committee Meeting addressing the flood risk assessment and mitigation strategy and other CRS components of the LHMP
- Attend and participate in one (1) remaining Planning Committee meeting
- Assist in providing data and input on the flood hazard(s) risk assessment and in the identification and prioritization of flood mitigation actions and projects
- Review LHMP drafts and provide any comments on the flood sections of the LHMP

Meetings

Steering Committee and future Planning Committee meeting dates are as follows:

Meeting Title/Location	Date/Time	Planning Committee Meeting	Steering Committee Meeting
Steering Committee Meeting (Fremont)	October 24, 2023 (6:00 – 7:30 pm)		✓
Planning Committee Meeting #5 (Fremont)	January 25, 2024 (9:00 – 11:30 am)	✓	

Steering Committee Membership

CRS encourages engagement of groups and people outside the local government(s). Therefore, it is important that the Steering Committee consists of members from both inside and outside of local government. The Steering Committee must meet the following CRS criteria:

- Members must include staff members from those local government departments that implement or have expertise in the activities that will be reviewed in CRS Activity 512(a) Step 7. (Preventative Measures, Property Protection, Natural Resource Protection, Emergency Services, Structural Flood Control Projects, and Public Information)
- At least half of the members must be stakeholders from outside the local government(s). These stakeholders can be members of the public, representatives of key community organizations, and/or other agencies that will help inform the floodplain components of the LHMP and may be involved in LHMP implementation.
- The total number of other government stakeholders cannot exceed 20% of the committee's stakeholder members.
- At least half the members must attend all the meetings of the LHMP Planning Committee.

A.4.5. Final Planning Committee Meeting Handouts

The Final Meeting handouts are contained in Section 2.2 of the Base Plan.

A.4.6. Early Public Kickoff Meeting Handouts

Tri-City LHMP: 2024 Hazards

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Flood: 1%/0.2% annual chance
- Flood: Localized Stormwater Flooding
- Landslide
- Levee Failure
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Severe Weather: High Winds
- Subsidence
- Tsunami
- Wildfire

Tri-City LHMP: Historic Hazard Worksheet (Past Occurrences)

Please fill out one sheet for each significant hazard event with as much detail as possible. Attach supporting documentation, photocopies of newspaper articles, links, or other original sources.

Type of event	
Nature and magnitude of event	
Location	
Date of event	
Injuries	
Deaths	
Property damage	
Infrastructure damage	
Crop damage	
Business/economic impacts	
Road/school/other closures	
Other damage	
Insured losses	
Federal/state disaster relief funding	
Opinion on likelihood of occurring again	
Source of information	
Comments	

	Please return worksheets by mail, email, or fax to: Jeanine Foster, Foster Morrison 6095 Zang Way Arvada, CO 80004 fax: (720) 893-0863 email: jeanine.foster@fostermorrison.com
Prepared by:	
Phone:	
Email:	
Date:	

A.4.7. Risk Assessment Public Meeting

The same handout was used as shown in Section A.4.2 above.

A.4.8. Final Public Meeting Handouts

Participating Jurisdictions

- City of Fremont
- City of Newark
- City of Union City
- Alameda County Water District
- Union Sanitary District

Hazards List

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought and Water Shortage
- Earthquake
- Flood: (1%/0.2% annual chance)
- Flood: Localized/Stormwater
- Landslide
- Levee Failure
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms
- Severe Weather: High Winds and Tornados
- Subsidence
- Tsunami
- Wildfire

Mitigation Strategy: Tri-City Goals

GOAL 1: Reduce risk and vulnerability of the Tri-City Planning Area to natural hazards (including climate change considerations) and prevent injuries, loss of life, and damage to property, economy, and the environment.

Objectives

- Minimize damage to homes, businesses, and public facilities.
- Promote public health and safety.
- Make every effort to reduce the impacts of hazards and disasters to potable and rechargeable water systems, as well as to wastewater systems.
- Promote a disaster resilient and healthy community that adapts to changing climate conditions and mitigates the effects of hazard impacts.
- Plan for and implement whole community risk reduction and resiliency strategies.
- Identify and integrate mitigation strategies into capital improvement programs.

- Reduce risk and vulnerability through the equitable and accessible planning and implementation of hazard mitigation actions and priorities.

GOAL 2: Provide protection and minimize impacts to critical facilities, infrastructure, and community lifelines. Create redundancy and reliability to significantly reduce risk of interruption or failure, minimize loss and the impacts of a disaster, and facilitate recovery.

Objectives:

- Identify and implement infrastructure improvements and risk reduction measures to ensure reliability and readiness before, during, and after a disaster.
- Identify and secure emergency equipment and resources vital to effective disaster mitigation, response, and recovery efforts.
- Develop contingency plans to reduce critical facility and infrastructure failures.

GOAL 3: Promote public education, awareness, and understanding of natural hazards and the risk and vulnerability they present to quality of life, property, environment, and the economy.

Objectives:

- Utilize a wide range of outreach and educational tools to engage and educate the whole community, including actions to take before, during, and after a hazard event to build a disaster resistant community.
- Foster a culture of resilience by energizing and educating the community.
- Encourage individual responsibility and self-sufficiency to minimize impacts to natural hazards.
- Establish and outreach evacuation routes and options for sheltering in place for all hazards including potentially large-scale disasters associated with earthquake and dam failure.

Goal 4: Build capacity and capabilities to increase disaster resilience for all hazards with a focus on the whole community.

Objectives:

- Develop and enhance public alert and warning capabilities and effectively communicate to the public.
- Build and support local capacity and reduce barriers to enable the community to prepare for, respond to, and recover from natural disasters.
- Establish and enhance interagency and public-private collaboration and relationships, data sharing, use of shared resources, and mitigation partnerships to reduce hazard related losses, and accelerate recovery, while being respectful of limited tax resources.
- Establish a financial plan specific to hazard mitigation, preparedness, response, and recovery efforts.
- Increase use of new technologies and high-quality data.
- Identify and enhance resources necessary to support implementation of capital projects and improvements that effectively mitigate hazards and impacts to the community.
- Develop and provide temporary response and recovery capabilities as needed to support communications, food and shelter, and other resources.
- Promote sharing of emergency plans and procedures with all regional partners, including critical partners such as the Red Cross.

Goal 5: Value the natural environment as a partner, recognize the ecological services provided by nature and harness these ecological processes to mitigate hazards.

Objectives:

- Preserve and protect natural resources.
- Integrate and maximize the integration of natural and beneficial functions of environmental resources into mitigation actions and projects where feasible.
- Mitigate undesirable disaster outcomes for the environment, watersheds, and quality of life.

Goal 6: Integrate mitigation principles and strategies into laws, regulations, policies, and guidance to promote cross -functional planning and regulatory initiatives and to support equitable outcomes to benefit the whole community.

Objectives:

- Increase disaster resilience among historically underserved populations, individuals with a disability or access and functional needs, and communities disproportionately impacted by disasters and climate change.

Goal 7: Build earthquake resiliency, prevent and reduce earthquake impacts, and mitigate undesirable earthquake outcomes.

Objectives:

- Make life safety a priority.
- Make every effort to reduce impacts of earthquake to potable and rechargeable water systems and to wastewater systems.
- Conduct comprehensive, interagency earthquake planning to include mitigation strategies, education and outreach, and detailed procedures for response and recovery.
- Mitigate secondary hazards associated with earthquake events including fire ignition and spread and prioritize measures for minimizing impacts to critical facilities, infrastructure, and community lifelines.

Mitigation Strategy: Tri-City Planning Area Mitigation Actions

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
City of Fremont Actions					
Multi-Hazard Actions					
Action 1. In the Safety Element of the General Plan, update reference to the Local Hazard Mitigation Plan.	New Action				Public Information, Prevention, Property Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 2. Promote multi-hazard home mitigation strategies through public education and outreach.	2016 Action (modified)	X	X	X	Public Information, Prevention, Property Protection
Action 3. In the *Fremont Municipal Code*, continuously adopt, or exceed, California Building Code standards.	2016 Action (modified)	X	X		Prevention, Property Protection
Action 4. Maintain and expand auxiliary power capabilities at identified Critical Facilities.	2016 Action (modified)				Emergency Services, Structural Projects
Action 5. Enhance GIS mapping of natural hazard risks, with Critical Facilities and Lifeline overlays.	2016 Action (modified)				Prevention, Emergency Services
Action 6. Enhance GIS mapping of real-time threat and hazard conditions, with Emergency Services overlays.	2016 Action (modified)				Emergency Services, Public Information
Action 7. Improve failover data and voice communications capabilities in support of emergency response and continuity of operations.	2016 Action (modified)				Emergency Services
Action 8. Study the feasibility of constructing a new emergency operations center facility.	New Action				Emergency Services
Action 9. Enhance Public Alert and Warning capabilities.	New Action				Public Information, Emergency Services
Action 10. Improve the resilience and safety of electrical and natural gas utilities.	New Action	X	X		Prevention, Structural Projects
Climate Change Actions					
Action 11. Implement *Climate Ready Fremont.*	2016 Action	X	X		Prevention, Natural Resource Protection
Action 12. Implement the *Urban Forest Management Plan.*	New Action	X	X		Prevention, Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 13. Prioritize growth in transit-oriented development areas, as identified in the General Plan, and along designated corridors intersecting those areas. Preserve open space in shoreline and hill areas.	New Action	X	X		Property Protection, Natural Resource Protection
Coastal Flooding and Sea Level Rise; Dam Failure; Flood: 1%/0.2%, Localized Flooding; Levee Failure; Severe Weather: Heavy Rain and Storms, Wind Actions					
Action 14. Maintain or improve the City of Fremont's National Flood Insurance Program, Community Rating System classification.	2016 Action	X	X	X	Prevention, Property Protection, Natural Resource Protection, Emergency Services, Public Information
Action 15. CRS Activities 310-370: Maintain and expand Public Information regarding flood risk, conducting regular public outreach.	New Action	X	X	X	Prevention, Public Information, Property Protection
Action 16. CRS Activities 410-450: Maintain and improve floodplain Mapping and Regulations	New Action	X	X	X	Prevention, Public Information, Natural Resource Protection
Action 17. CRS Activities 510-550: Conduct Flood Damage Reduction projects, including but not limited to regular drainage system maintenance and projects to identify, assess, and mitigate nuisance flooding.	2016 Action (modified)	X	X	X	Prevention, Natural Resource Protection, Structural Projects
Action 18. CRS Activities 610-630: Maintain and improve flood Warning and Response capabilities.	New Action	X	X	X	Public Information, Emergency Services, Structural Projects
Action 19. Prevent and protect against levee failure and flood-induced debris flows.	New Action	X	X	X	Prevention, Property Protection
Action 20. Become a recognized National Weather Service StormReady® community.	New Action	X	X	X	Public Information, Emergency Services

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 21. Coordinate with owners of Extremely High Hazard and High Hazard dams which may inundate areas of Fremont by reviewing Emergency Action Plans, providing updated emergency contacts, and participating in periodic exercises.	New Action	X	X	X	Public Information, Emergency Services
Earthquake Actions					
Action 22. Assess the status of all buildings subject to the "Earthquake Hazard Reduction and Retrofit" provisions of the *Fremont Municipal Code*. Conduct enforcement of any subject buildings which do not comply.	2016 Action (modified)	X			Prevention, Property Protection
Action 23. Develop seismically resilient water supply solutions to support post-earthquake firefighting operations.	2016 Action (modified)	X	X		Property Protection, Structural Projects, Emergency Services
Action 24. Evaluate seismic risk to Lifelines (e. g., roads and bridges, water, natural gas, and/or electrical distribution) using data collection and Hazus modeling.	New Action	X	X		Structural Projects
Action 25. Ensure development complies with the Alquist-Priolo Earthquake Fault Zone Act, and otherwise avoid development of public facilities or intensive residential, commercial, or industrial development in the immediate vicinity of the Hayward Fault.	New Action		X		Property Protection
Action 26. Implement earthquake early warning technologies to protect emergency services and the public.	New Action	X	X		Public Information Emergency Services Property Protection
Landslide Actions					
Action 27. Prevent and protect against landslides through geotechnical monitoring.	2016 Action (modified)	X	X		Prevention. Property Protection, Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 28. Prevent and protect against landslide through slope stabilization, retaining walls, and other improvements.	New Action	X	X		Prevention. Property Protection, Natural Resource Protection
Tsunami Actions					
Action 29. Post Tsunami Zone and Tsunami Evacuation Route signage in designated Tsunami Hazard Areas.	New Action	X	X	X	Public Information
Action 30. Become a recognized National Weather Service TsunamiReady® community.	New Action	X	X	X	Public Information, Emergency Services
Wildfire Actions					
Action 31. Conduct vegetation management on public and private property to reduce wildfire risk.	2016 Action (modified)	X	X		Prevention, Property Protection, Natural Resource Protection
Action 32. Support neighborhood-based applications to become recognized Firewise USA® Communities, in accordance with National Fire Prevention Association standards.	New Action	X	X		Prevention, Property Protection, Natural Resource Protection
Action 33. In areas prone to wildfire, prevent and protect against heat-induced failure of roadways and utilities by using heat-resistant construction materials.	New Action	X	X		Prevention, Structural Projects
Action 34. Improve air filtration systems at select public facilities (i. e., those otherwise fit to function as Air Quality Relief Centers) to effectively mitigate the effects of wildfire smoke.	New Action				Emergency Services
City of Newark Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	New Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	New Action	X	X		Public Information

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 3. Continuously adopt the most current building standards and include appendices to mitigate hazards such as but not limited to Floods, Wildfires, and Earthquake.	New Action	X	X	X	Prevention
Action 4. Hardening and Retrofit of Existing Facilities	New Action	X	X		Prevention Emergency Services Property Protection
Action 5. Critical Facilities Back-Up Power	2017 Action	X	X		Prevention Emergency Services Property Protection
Action 6. Update and enhance the GIS data systems and mapping for water-related climate hazards / Mapping Water-Related Climate Hazards	New Action	X	X		Prevention
Climate Change Actions					
Action 7. Sea Level Rise Resiliency Plan	2017 Action	X	X	X	Prevention
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 8. Maintain good standing under NFIP and create public outreach program and awareness	New Action	X	X	X	Prevention Public Information
Action 9. Partner with Alameda County Flood Control and Water Conservation District (ACFCD) to identify mitigation option for various projects	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Action 10. Alameda County Flood Control and Water Conservation Water District (ACFCD) Line H and Line I Improvements	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 11. Install storm drainage improvements at Lindsay Tract	2017 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 12. Develop a Storm Drain Master Plan	2017 Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Earthquake and Tsunami Actions					
Action 13. Complete railroad overcrossing at Central Avenue	2017 Action	X	X		Structural Projects
Wildfire and Severe Weather Extreme Heat Actions					
Action 14. Replace Eucalyptus Groves with non-hazardous tree species	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 15. Urban Forest Master Plan development	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
City of Union City Actions					
Multi-Hazard Actions					
Action 1. Integrate Local Hazard Mitigation Plan into Safety Element of General Plan	2017 Action	X	X		Prevention
Action 2. Enhance Public Education and Awareness of Natural Hazards and Public Understanding of Disaster Preparedness	2017 Action	X	X	X	Public Information
Action 3. Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.	2017 Action	X	X		Emergency Services
Action 4. Incident Commanders Established And ICS Trained	2017 Action	X	X		Emergency Services
Action 5. Acquire Two Emergency Mobile Command Centers	2017 Action	X	X		Emergency Services
Action 6. Acquire four radio charging stations for spare radios	2017 Action	X	X		Emergency Services
Action 7. Consider Participation in Incentive-Based Programs such as the Community Rating System, Tree City and Storm Ready.	2017 Action	X	X	X	Prevention

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 8. Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated alternate EOC site.	2017 Action	X	X		Emergency Services
Action 9. Acquire Emergency Generators for the City's Critical Facilities, Specifically Fire Station #31, Senior Center, and Corporation Yard	2017 Action	X	X		Property Protection Property Protection
Action 10. Conduct a Feasibility Study to Identify Temporary Morgue Facilities	2017	X	X		Emergency Services
Action 11. Develop a Disaster Debris Management Plan	2017 Action	X	X	X	Prevention Emergency Services
Climate Change Actions					
Action 12. Climate Action Plan Update	New Action	X	X	X	Prevention Property Protection Natural Resource Protection
Coastal Flooding and Sea Level Rise, Dam Failure, Flood 1%/0.2%, Localized Flooding, Severe Weather Heavy Rains and Storm Actions					
Action 13. Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.	2017 Action	X	X	X	Prevention
Action 14. Implement Stormwater Master Plans	New Action	X	X	X	Prevention Property Protection Structural Projects Natural Resource Protection
Drought Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 15. Develop and Maintain a Landscape Design Manual to Provide General Guidance and Education to the Public on Water efficiency in Landscaping and to serve as a Resource for Water Efficient Landscape design and Installation Including lists of Recommended Site Appropriate Native and Drought-Tolerant Plant Species.	2017 Action	X	X		Prevention Property Protection Natural Resource Protection
Earthquake and Tsunami Actions					
Action 16. Work with ACWD to Design and Install Seismically Resilient Backbone Pipeline through Liquefaction Soils in Union City.	2017 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 17. Establish a Broadband-WiFi network in the Station District	2017 Action	X	X		Prevention Emergency Services
Action 18. Establish a Broadband-WiFi Network Backbone Infrastructure along Major Throughfares Throughout the City.	2017 Action	X	X		Prevention Emergency Services
Action 19. Conduct a Feasibility Study to Review the Highway Overpass Bridge of Alvarado-Niles Rd. over I-880, for any Seismic Upgrades.	2017 Action	X	X		Structural Projects
Action 20. Coordinate with the City of Hayward to Conduct a Feasibility Study to Review any Seismic Upgrades for the I-880 Overpass over Whipple Road	2017 Action	X	X		Structural Projects
Action 21. Construct Grade Separations on the Niles Subdivisions and the Oakland Subdivision in the Decoto Neighborhood and on the Coast Subdivision on Union City Blvd, Smith Street, Dyer Street, and Alvarado Blvd.	2017 Action	X	X		Structural Projects
Wildfire and Severe Weather Extreme Heat Actions					

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 22. Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous or dead trees.	2017 Action	X	X		Prevention Natural Resource Protection
Action 23. Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources	2017 Action	X	X		Prevention Natural Resource Protection
Action 24. Conduct a Feasibility Study to Review Necessary Improvement Required to Make Critical Facilities for Recovering Families After Crisis	New Action	X	X		Prevention Emergency Services
ACWD Actions					
Multi-Hazard Actions					
Action 1. Develop and maintain an asset management program that tracks natural hazard events.	2022 Action	X	X	X	Prevention
Action 2. Reevaluate standby generator needs and purchase and install as needed	2022 Action	X	X		Prevention Emergency Services Property Protection
Action 3. Retrofit and/or update District tanks and reservoirs to improve seismic resilience.	2022 Action	X	X		Property Protection Structural Projects
Action 4. Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.	2022 Action	X	X		Prevention Emergency Services Property Protection
Action 5. Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.	2022 Action	X	X	X	Property Protection Structural Projects Natural Resource Protection
Action 6. As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.	2022 Action	X	X		Prevention Property Protection Emergency Services

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 7. Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.	2022 Action	X	X		Prevention Property Protection Emergency Services
Action 8. Continue to participate in local emergency response trainings and exercises.	2022 Action	X	X		Emergency Services
Action 9. Continue to integrate the capital improvement program with the LHMP.	2022 Action	X	X		Prevention Property Protection Structural Projects Emergency Services Natural Resource Protection
Drought and Water Shortage					
Action 10. Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.	2022 Action	X	X		Prevention Property Protection Natural Resource Protection
Action 11. Install a second Deep Aquifer water well at the Mowry Wellfield.	2022 Action	X	X		Prevention Emergency Services Property Protection Natural Resource Protection
Action 12. Blend Facility for PFAS.	2022 Action	X	X		Prevention Structural Projects
Action 13. Complete a redesign of blending facility to allow low production and neat chemical feed.	2022 Action				Prevention Structural Projects
Action 14. Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.	2022 Action				Structural Projects Property Protection Natural Resource Protection
Earthquake Actions					
Action 15. Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 16. Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
Action 17. Enhance Booster Pumping to the Upper Zones (for example PR-1 or Seven Hills)	2022 Action	X	X		Emergency Services Structural Projects Property Protection Natural Resource Protection
USD Actions					
Multi-Hazard Actions					
Action 1. Public Education Outreach	2017 Action	X	X		Property Protection Emergency Services
Action 2. Enhanced Treatment and Site Upgrade (ETSU)- Phase 1A Campus Building and Aeration Basin Modifications; Phase 1B Secondary Clarifiers & Effluent Facilities; Phase 1C Plant Equalization Storage	2017 Action	X	X		Property Protection Structural Projects
Climate Change Actions					
Action 3. Irvington Pump Station Solar & Battery Project	New Action	X	X		Property Protection Emergency Services
Action 4. Battery Storage & 3rd Cogen	New Action	X	X		Public Information
Sea Level Rise, Earthquake Actions					
Action 5. Field Ops Building Seismic Upgrade	2017 Action	X	X		Property Protection Structural Projects
Drought/Water Shortage Actions					
Action 6. Digester #8	New Action	X	X		Property Protection Structural Projects
Earthquake Actions					
Action 7. Seismic Retrofit of Concrete Structures	2017 Action	X	X		Property Protection Structural Projects

Action Title	New Action/ Previous Action	Address Current Development	Address Future Development	Continued NFIP Compliance	Mitigation Type
Action 8. Newark Pump Station Emergency Outfall	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection
Action 9. Seismic upgrade of Primary Clarifier 1-4	2017 Action	X	X		Property Protection Structural Projects
Sea Level Rise, Subsidence Actions					
Action 10. Forcemain Alameda Creek Crossing Ground Stabilization	2017 Action	X	X		Property Protection Structural Projects Natural Resource Protection

.

Appendix B References

2010 City of Newark Climate Action Plan

2010 City of Union City Climate Action Plan

2013 City of Newark General Plan

2013 City of Newark General Plan Conservation and Sustainability Element

2013 City of Newark General Plan Land Use Element

2015-2023 City of Newark Housing Element

2016 City of Fremont LHMP Update

2016 City of Fremont Local Hazard Mitigation Plan

2017 City of Fremont, Newark, Union City, Alameda County Water District, and Union Sanitary District Local Hazard Mitigation Plan

2017 Union City/Newark Multi-Jurisdictional Hazard Mitigation Plan

2018 Alameda County Flood Insurance Study

2018 and 2023 California State Hazard Mitigation Plan

2019 City of Union City General Plan

2019 City of Union City General Plan Land Use Element

2019 Union City General Plan Economic Development Element

2019 Union City General Plan Health & Quality of Life Element

2019 Union City General Plan Resource Conservation Element

2019 Union City General Plan Safety Element

2020 California Climate Adaptation Study

2021 Alameda County LHMP

2021 *Critical Infrastructure at Risk – Sea Level Rise Planning Guidance for California's Coastal Zone*

2022 Alameda County Water District Local Hazard Mitigation Plan Update

2023 Alameda County Assessor's data/Parcel data

2023 California State Hazard Mitigation Plan

2023 Sewer System Management Plan

2023-2031 City of Union City Housing Element

ACWD

ACWD 2018 Strategic Plan

ACWD Business Continuity Plan

ACWD Cayenta System

ACWD Climate Adaptation Plan

ACWD Distribution System Seismic Improvement Study

ACWD Emergency Response Plan

ACWD GIS

ACWD Urban Water Management Plan

Agency for Toxic Substances and Disease Registry

Alameda County

Alameda County Assessor's Office Parcel/Assessor Data (2023)

Alameda County Parcel/Assessor Data (Source: City of Fremont, May 2023)

Alameda County Water District

Alameda County Water District GIS

Alameda County Water District staff

American Lifelines Alliance

ArkStorm at Tahoe – Stakeholder Perspectives on Vulnerabilities and Preparedness for an Extreme Storm Event in the Greater Lake Tahoe, Reno and Carson City Region. 2014.

Bureau of Land Management

CA DWR Best Available Maps

CA DWR Disadvantaged Community Mapping

Cal DWR Disadvantaged Communities

Cal DWR Division of Safety of Dams

CAL FIRE

CAL FIRE Fire Hazard Severity Zone

CAL FIRE GIS datasets

Cal OES

Cal OES Dam Inundation Areas

Cal-Adapt

Cal-Adapt – Annual Average of Acres Burned

Cal-Adapt – Extended Drought Scenarios

Cal-Adapt – Number of Extreme Heat Days by Year

Cal-Adapt – Precipitation: Decadal Averages Map

CalAtlas

CalEPA

California Adaptation Planning Guide

California Adaptation Planning Guide, Bay Area Region (2017)

California Climate Adaptation Strategy (CAS) – 2021

California Department of Finance

California Department of Finance 2023 E-1 Report

California Department of Fish and Wildlife

California Department of Parks and Recreation Office of Historic Preservation

California Department of Water Resources

California Department of Water Resources (CA DWR) Special Populations and Disadvantaged Community Mapping

California Department of Water Resources Best Available Maps

California Department of Water Resources Division of Safety of Dams

California Division of Mines and Geology

California DWR

California Environmental Protection Agency

California Environmental Protection Agency (Cal EPA) Disadvantaged Communities

California Environmental Quality Act

California Geological Survey

California Health and Safety Code

California Independent System Operator

California Natural Diversity Database

California Natural Resources Report in 2014

California Office of Emergency Services – Dam Inundation Data

California Public Utilities Commission

California's Adaptation Planning Guide: Understanding Regional Characteristics

California's Drought of 2007-2009, An Overview. State of California Natural Resources Agency, California Department of Water Resources.

California's Fourth Climate Change Assessment

Capacity and Conditions Assessments Summaries

Capital Improvement Program

CDC Social Vulnerability Index

Center for Disease Control (CDC) Social Vulnerability Index

CGS Susceptibility to Deep Seated Landslide maps

CGS Susceptibility to Deep Seated Landslides (CGS Map Sheet 58)

CGS Tsunami Coastal Evacuation Zone

CGS Tsunami Inundation Areas

City of Freemont (2023) Annual Comprehensive Financial Report

City of Freemont Climate Action Plan (2023)

City of Freemont Community Development Department, Sustainability Division

City of Freemont Downtown Community Plan

City of Freemont Emergency Operations Plan (2020)

City of Freemont General Plan (2011)

City of Freemont General Plan Land Use Element

City of Freemont GIS

City of Fremont Building Department

City of Fremont General Plan Conservation Element

City of Fremont General Plan Safety Element (2011)

City of Fremont GIS

City of Fremont staff

City of Newark Capital Improvement Plan (2022)

City of Newark Comprehensive Emergency Management Plan (2013)

City of Newark GIS

City of Newark Housing Element

City of Newark staff

City of Union City Comprehensive Emergency Management Plan

City of Union City GIS

City of Union City Hazardous Materials Area Plan

City of Union City staff

City of Union City Station District Specific Plan

City of Union City Strategic Plan and Capital Improvement Plan

City Planning Team Input

Climate Change and Health Profile Report – Alameda County

Climate Ready Fremont (2023)

Community Disaster Resilience Zones Act

Cosmos 2021

Critical Infrastructure at Risk – Sea Level Rise Planning Guidance for California's Coastal Zone by the California Coastal Commission (2021)

Dam Owners/Operators

Department of Energy

Development Activities Areas

Distribution System Seismic Improvement Study (Technical Memorandum no. 1 Geologic/Geotechnical Hazard Assessment) 2007

Earthquake Hazus Global Summary Risk Report

East Bay Dischargers Authority Climate Ready Final Report (August 2015)

Existing plans and studies

Federal Emergency Management Agency

FEMA

FEMA 12/21/2018 DFIRM

FEMA Community Disaster Resilience Zones

FEMA DFIRM 12/21/2018

FEMA DFIRM mapping

FEMA Disaster Declaration Database

FEMA: Building Performance Assessment: Oklahoma and Kansas Tornadoes

FEMA's HAZUS-MH 6.0 GIS-based inventory data

Fire following the Mw 7.05 HayWired earthquake scenario (2018)

FM Global Insurance company

Fox 2 News website - https://www.ktvu.com/news/mudslides-block-travel-cause-headaches-for-east-bay-residents (image on A-263)

Freemont Municipal Code

Fremont Community Development Department

Fremont Development Activity Map

Fremont Economic Development Department

Geospatial Research, Analysis & Services Program

Hazus 6.0

Hazus 6.1

Hazus Scenario Catalogs

Housing Element Inventory Areas

Integrated Regional Water Management Plan

IPCC Fifth Assessment Synthesis Report (2014)

Kenward, Alyson PhD, Adams-Smith, Dennis, and Raja, Urooj. Wildfires and Air Pollution – The Hidden Health Hazards of Climate Change. Climate Central. 2013.

Levees in History: The Levee Challenge. Dr. Gerald E. Galloway, Jr., P.E., Ph.D., Water Policy Collaborative, University of Maryland, Visiting Scholar, USACE, IWR.

Liu, J.C., Mickley, L.J., Sulprizio, M.P. et al. Climatic Change. 138: 655. doi:10.1007/s10584-016-1762-6. 2016.

Local Input

May 2022 City of Newark General Plan Safety Element Existing Conditions Memorandum

Metropolitan Transportation Commission

Multi-Hazard Identification and Risk Assessment, FEMA 1997

National Drought Mitigation Center

National Drought Mitigation Center – Drought Impact Reporter

National Environmental Policy Act

National Institute of Building Science Multi-Hazard Mitigation Council 2019 Interim Report

National Integrated Drought Information System

National Levee Database

National Oceanic and Atmospheric Administration

National Oceanic and Atmospheric Administration's National Climatic Data Center

National Weather Service

National Weather Service XMAC site

Natural Resource and Conservation Service

NCDC

NFIP CIS data 7/2023

NOAA Storm Prediction Center

NOAA's National Climatic Data Center

Office of Environmental Health Hazard Assessment

Pacific Gas and Electric Company

Personal interviews with planning team members and staff from each jurisdiction

Planning Committee input

Proceedings of the National Academy of Sciences

Public Health Alliance of Southern California

Public Policy Institute of California

Public Works

Sanitary Sewer Master Plan (2021 Audit)

Scawthorn, C. 2018. "Fire following the Mw 7.05 HayWired earthquake scenario." Pp. 367-400 in The HayWired Earthquake Scenario --Engineering Implications, edited by Shane T. Detweiler and Anne M.

Wein. Washington: U.S. Geological Survey Scientific Investigations Report 2017 -5013 -I -Q. https://pubs.er.usgs.gov/publication/sir20175013

Science Magazine

Sea Level Rise Report (June 2013)

sealevelrise.org

State of California Department of Conservation

State of California Hazard Mitigation Plan (2023)

Statewide GIS datasets from other agencies such as Cal OES, FEMA, USGS, CGS, Cal Atlas, and others

The Uniform Building Code

Tri-City Participating Jurisdictions

U.S. Census Bureau

U.S. Census Bureau 2020 Household Population Estimates

U.S. Climate Data

U.S. Department of Energy

U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

U.S. Fish and Wildlife Service's National Wetlands Inventory maps

U.S. Geological Survey

U.S. Occupational Safety and Health Administration

Uniform Building Code Seismic Zones

United States Geological Survey

United States Geological Survey Open File Report 2015-3009

University of California

University of California, Berkeley's Department of Environmental Science, Policy, and Management

US Army Corps of Engineers

US Census Bureau

US Census Bureau (2020)

US Census Bureau (2022) ACS 5-Year Survey

US Census Bureau American Community Survey 2021 Estimates

US Census Bureau Average Household Sizes

US Census Data from the American Housing Survey

US Center for Disease Control

US Drought Monitor

US EPA

US Fish and Wildlife Service

USD

USD GIS

USD Preliminary Study on the Effect of Sea Level Rise on District Infrastructure

USD Seismic Preliminary Report (April 2016)

USDA Forest Service Region 5

USGS Bulletin 1847

USGS HayWired Fact Sheet (2018)

USGS Hazus Specialist

USGS National Earthquake Information Center

USGS Publication 2014-3120

USGS/CGS Earthquake Liquefaction Susceptibility

USGS/CGS Liquefaction Susceptibility Zones

Vaisala National Lightning Detection Network

Western Regional Climate Center

Wildfire Safety Operations Center

World Meteorological Organization

Written descriptions of inventory and risks provided by staff from the Tri-City Planning Area jurisdictions

Appendix C Mitigation Strategy

C.1 Mitigation Strategy Handout

Tri-City Multi-Jurisdictional
Local Hazard Mitigation Plan (LHMP)
Planning Committee Meetings #3 & #4 - Mitigation Strategy
September 19 & 20, 2023

Table of Contents:

Agenda

Day 1:

- LHMP Project Status/Next Steps/Timeline…4
- Hazard Identification & Profiles…5
- Risk Assessment Methodology…6
- Risk Assessment Summary…7
- Tri-City Priority Hazards (by Jurisdiction) …14
- Mitigation Strategy: Goals…17
- 2018 State HMP/2023 State HMP Goals…18
- Tri-City Goals from Previous LHMPs…19
- Example Goal Statements…20
- Goals Development…21

Day 2:

- Mitigation Strategy Action Development: Ground Rules…23
- Mitigation Strategy: Actions …24
- Categories of Mitigation Actions…24
- Mitigation Actions/Projects from Previous LHMPs…28
- Mitigation Strategy: Action Plan…37
- Mitigation Criteria …37
- Mitigation Action Prioritization Instructions…39
- Mitigation Action Worksheet …40

Jeanine Foster (jeanine.foster@fostermorrison.com)
Foster Morrison Consulting Ltd.
(303) 717-7171

FOSTER MORRISON CONSULTING

AGENDA

Tri-City Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) Planning Committee Meetings #3 & #4 Mitigation Strategy

Tuesday September 19, 2023 (1:00 - 4:00 pm)
Wednesday September 20, 2023 (9:00 am - 12:00 pm)
Alameda County Water District - Board Room
43885 S. Grimmer Blvd.
Fremont, CA 94538

Planning Committee Meeting #3:

1. Introductions
2. Grant Update
3. LHMP Project Status and Next Steps/Timeline
4. Risk Assessment Status and Hazus
5. Priority Hazards Review
6. Develop Plan Goals and Objectives
7. Introduction to Planning Committee Meeting #4: Mitigation Alternatives/Actions/Projects

Planning Committee Meeting #4:

1. Introductions
2. Review Mitigation Categories and Selection Criteria
3. Brainstorming of Mitigation Alternatives/Actions/Projects by Hazard
4. Prioritization of Mitigation Actions/Projects
5. Questions

Mitigation Strategy Meetings
September 19 & 20, 2023
Day 1

Status of the 2024 Tri-City LHMP Project/Next Steps

FEMA's 4-Phase-10 Step DMA/CRS Planning Process

Phase I: Organize Resources

1) Get organized

2) Plan for public involvement

3) Coordinate with other departments and agencies

Phase II: Risk Assessment

4) Identify the hazard(s)

5) Assess the risks

Capability Assessment

Phase III: Mitigation Strategy

6) Set planning goals

7) Review mitigation alternatives

8) Draft an action plan

Phase IV: Adoption and Implementation

9) Adopt the plan

10) Implement the plan, evaluate its worth, and revise as needed

LHMP Project Schedule/Key Dates

LHMP Meetings

- **September 19** (Tuesday) PC* Meeting #3 (Mitigation Strategy: Goals Development) (1:00-4:00 pm)
- **September 20** (Wednesday) PC Meeting #4 (Mitigation Strategy: Actions and Projects) (9:00 am - 12:00 pm)
- **January 24** (Wednesday) Final Public Meeting #3 (6:00-7:30 pm)
- **January 25** (Thursday) PC Meeting #5 (9:00 am -12:00 pm)

Mitigation Strategy Meetings - Follow up

- **September 29 (**Friday**)** Mitigation Strategy (goals/actions) processed and sent to Project Team/PC
- **October 27** (Friday) Mitigation Action (Project) Worksheets and edits/refinement to draft Goals and Objectives due to Foster Morrison

LHMP Document Drafts

- **November 10** (Friday): PC (First) Draft LHMP to Project Team/PC
- **December 8** (Friday): Project Team/PC comments due on Draft Plan
- **December 21** (Thursday): Comments incorporated into Public Review (Second) Draft to Project Team/PC
- **January 2** (Tuesday): Public Review Draft on Participating Jurisdictions' websites
- **February 2** (Friday**):** All Project Team, PC and Public input to Foster Morrison
- **February 16:** All final comments incorporated and LHMP submittal to Cal OES – February 2024

*PC = Planning Committee

Tri-City Planning Area Hazard Identification & Profiles

Hazard	Geographic Extent	Likelihood of Future Occurrences	Magnitude/ Severity	Significance	Climate Change Influence
Climate Change	Extensive	Highly Likely	Critical	High	–
Coastal Flooding and Sea Level Rise	Limited	Highly Likely	Limited	Medium	High
Dam Failure	Sig – Ext.	Unlikely	Catastrophic	High	Medium
Drought & Water Shortage	Extensive	Likely	Limited	Medium	High
Earthquake	Extensive	Occasional/ Highly Likely	Catastrophic	High	Low
Flood: 1%/0.2% annual chance	Significant	Occasional	Critical	High	High
Flood: Localized/Stormwater Flooding	Extensive	Highly Likely	Limited	Medium	Medium
Landslide	Limited	Likely	Limited	Medium	Medium
Levee Failure	Limited	Unlikely	Limited	Medium	Medium
Severe Weather: Extreme Cold and Freeze	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: Extreme Heat	Extensive	Highly Likely	Limited	Medium	High
Severe Weather: Heavy Rain and Storms	Extensive	Highly Likely	Limited	Medium	Medium
Severe Weather: High Winds and Tornadoes	Extensive	Highly Likely	Negligible	Medium	Medium
Subsidence	Limited	Likely	Negligible	Low	Medium
Tsunami	Limited	Unlikely	Limited	Medium	Low
Wildfire	Limited	Highly Likely	Critical	Medium	Medium

Geographic Extent
Limited: Less than 10% of planning area
Significant: 10-50% of planning area
Extensive: 50-100% of planning area

Likelihood of Future Occurrences
Highly Likely: Near 100% chance of occurrence in next year, or happens every year.
Likely: Between 10 and 100% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
Occasional: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
Unlikely: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Magnitude/Severity
Catastrophic: More than 50 percent of property severely damaged; shutdown of facilities for more than 30 days; and/or multiple deaths
Critical: 25-50 percent of property severely damaged; shutdown of facilities for at least two weeks; and/or injuries and/or illnesses result in permanent disability
Limited: 10-25 percent of property severely damaged; shutdown of facilities for more than a week; and/or injuries/illnesses treatable do not result in permanent disability
Negligible: Less than 10 percent of property severely damaged, shutdown of facilities and services for less than 24 hours; and/or injuries/illnesses treatable with first aid

Significance (*Medium or High Significance=Priority Hazard)*
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Climate Change Influence
Low: Minimal potential impact
Medium: Moderate potential impact
High: Widespread potential impact

Risk Assessment Methodology

Calculating Likelihood of Future Occurrence

The frequency of past events is used in this section to gauge the likelihood of future occurrences. Based on historical data, the likelihood of future occurrence is categorized into one of the following classifications:

- **Highly Likely**: Near 100% chance of occurrence in next year, or happens every year.
- **Likely**: Between 10 and 90% chance of occurrence in next year, or has a recurrence interval of 10 years or less.
- **Occasional**: Between 1 and 10% chance of occurrence in the next year, or has a recurrence interval of 11 to 100 years.
- **Unlikely**: Less than 1% chance of occurrence in next 100 years, or has a recurrence interval of greater than every 100 years.

Calculating Vulnerability

Vulnerability is measured in general, qualitative terms, and is a summary of the potential impact based on past occurrences, spatial extent, and damage and casualty potential:

- **Extremely Low**: The occurrence and potential cost of damage to life and property is very minimal to non-existent.
- **Low**: Minimal potential impact. The occurrence and potential cost of damage to life and property is minimal.
- **Medium**: Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **High**: Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread. Hazards in this category may have already occurred in the past.
- **Extremely High**: Very widespread and catastrophic impact.

Defining Significance (Priority) of a Hazard

Defining the significance or priority of a hazard to a community is based on a subjective analysis of several factors. This analysis is used to focus and prioritize hazards and associated mitigation measures for the plan. These factors include the following:

- **Past Occurrences**: Frequency, extent, and magnitude of historic hazard events.
- **Likelihood of Future Occurrences**: Based on past hazard events.
- **Ability to Reduce Losses through Implementation of Mitigation Measures**: This looks at both the ability to mitigate the risk of future occurrences as well as the ability to mitigate the vulnerability of a community to a given hazard event.

Risk Assessment Summary: Tri-City 2024 LHMP

Climate Change

- The 2023 State of California Hazard Mitigation Plan stated that climate change is clearly affecting California. Sea levels have risen by as much as seven inches along the California coast over the last century, increasing erosion and pressure on the state's infrastructure, water supplies, and natural resources. The State has also seen increased average temperatures, more extreme hot days, fewer cold nights, a lengthening of the growing season, shifts in the water cycle with less winter precipitation falling as snow, and both snowmelt and rainwater running off sooner in the year. The number, magnitude, and severity of hazard events and disasters are significantly increasing resulting in catastrophic events. Climate Change has the potential to significantly alter the nature and frequency of most hazards.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: High
- Priority Hazard

Coastal Flooding and Sea Level Rise

- No state or federal disaster declarations specific to coastal flooding and sea level rise; although coastal flooding was likely a component of many of the disaster declarations for flood. The NCDC reported 4 events of coastal flooding and high surf for Alameda County.
- The frequency and severity of coastal flooding is expected to increase as sea levels rise.
- The western edge of the Tri-City Planning Area encompasses miles of shoreline, which is subject to coastal flooding and SLR.
- Coastal flooding is more intense during periods of king tides. NOAA notes that a king tide is a non-scientific term people often use to describe exceptionally high tides. Higher than normal tides typically occur during a new or full moon and when the Moon is at its perigee, or during specific seasons around the country. Should flooding occur around a king tide, damages in the Tri-City would be higher.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: High
- Priority Hazard

Dam Failure

- There are 23 dams in Alameda County that were constructed for flood control, storage, treatment impoundments, electrical generation, and recreational purposes. Of the 23 dams in Alameda County, 11 were rated as Extremely High Hazard, 7 are rated as High Hazard, 3 as Significant Hazard, and 2 as Low Hazard. Outside of Alameda County, 2 EH Hazard dams located in Santa Clara County also have inundation areas that intersect with the Tri-City Planning Area.
- Of these dams, 7 Extremely High Hazard, 2 High Hazard, and 3 Significant Hazard dams have the potential to impact (i.e., inundation areas) the Tri-City Planning Area.
- 1 of the Extremely High Hazard dams (Decoto), 2 High Hazard dams (Middlefield, Quarry Pits) and 2 Significant Hazard dams (Shinn, Rubber Dam #3, and Patterson) are owned by ACWD.
- Likelihood of Future Occurrence: Occasional
- Vulnerability: Extremely High
- Priority Hazard

Drought and Water Shortage

- Historical drought data for the Tri-City Planning Area and region indicate there have been 5 significant multi-year droughts in the last 84 years.
- 2 state disaster declarations in 1976 and 2014; 1 federal disaster declaration in 1976.
- ACWD supplies water to the Tri-City Planning Area. Their supply includes water that originates as precipitation within the Alameda Creek watershed and water that is transported from the Sacramento/San Joaquin River Delta through the South Bay Aqueduct. Sixteen wells are used to pump water from the groundwater basin to a system of distribution mains serving residents and businesses. These 16 wells are capable of producing up to 47.5 million gallons of water per day (MGD). An additional 20 percent of ACWD's water supply comes from the Hetch Hetchy Reservoir in Yosemite National Park. That water is purchased from the San Francisco Public Utilities Commission. ACWD also receives about 10 MGD of water from the Newark Desalinization Facility. This is the first brackish water desalinization (Desal) facility in Northern California.
- During the 2014-2016 drought years, ACWD customers reduced overall water use by 28% relative to baseline demands in 2013. The District experienced unprecedented participation in water use efficiency programs during the 2014-2016 drought years, as well as continued water use efficiency savings from plumbing code requirements, and currently estimated in its UWMP that a permanent 11% demand reduction will last beyond the end of drought.
- Likelihood of Future Occurrence: Likely
- Vulnerability: Medium
- Priority Hazard

Earthquake

- Geological data indicates that the Bay Area is located within an area of relatively high seismic activity and is traversed by multiple faults associated with the Pacific and North American plates.
- Level of earthquake hazard varies substantially by location and is primarily determined by several factors: earthquake magnitude, earthquake epicenter, earthquake depth, and soil and rock conditions.
- Since 1836, eight earthquakes of magnitude 6.0 or greater have occurred in the region. These include: 1906 M7.8 San Francisco; 1984 M6.4 Morgan Hill; 1989 M7.1 Loma Prieta; 2014 M6.0 Napa.
- Since 1950, there has been 1 disaster declaration in both Alameda County for the 1989 Loma Prieta Earthquake.
- Since 1950, there have been 35 earthquakes >5.0 occurring within 90 miles of the Planning Area (centered on Fremont).
- For the Tri-City Planning Area, the most damaging earthquakes would be those nearest to the Tri-City area (especially the Hayward Fault, as compounded by the Rogers Creek Fault; the Calaveras Fault, and also to a lesser extent possibly the Concord and Greenville Faults.) Large earthquakes on the San Andreas fault could also affect the Planning Area.
- Various Hazus Scenarios are being developed to model impacts associated with earthquake events on several of these faults.
- Damages from earthquakes may include those from ground shaking and surface rupture and also include secondary impacts from earthquake liquefaction, earthquake induced landslides, dam, reservoir and levee failures, and fires.
- Based on analysis of the Alquist-Priolo fault zones (where surface rupture could occur), portions of the Tri-City Planning Area is located in Alquist Priolo Zones.

- The Uniform Building Code (UBC) identifies four seismic zones in the United States. The zones are numbered one through four, with Zone 4 representing the highest level of seismic hazard. The UBC establishes more stringent construction standards for areas within Zones 3 and 4. All of California lies within either Zone 3 or Zone 4. The Planning Area is within the more hazardous Zone 4.
- The expected consequences of a major earthquake on the Tri-City Planning Area include not only building damage, but also casualties (injuries and deaths) and loss of important functions. The buildings most at risk are older buildings, designed to lower seismic performance standards compared to current or recent code buildings, especially buildings that are non-ductile such as masonry buildings.
- Liquefaction is a process where loose, wet sediments lose bearing strength during an earthquake and behave similar to a liquid. Settling or lateral spreading can cause major damage to buildings and to infrastructure such as roads, underground utilities, and levees.
- Based on the CGS Seismic Hazard Zone (liquefaction) Maps, the Tri-City Planning Area is underlain by many areas at risk to liquefaction. Almost the entire Planning Area is in the Moderate, High, or Very High Liquefaction Susceptibility Zones.
- In addition, several areas within the Tri-City Planning Area are also prone to earthquake induced landslides based on CGS mapping. These areas are generally confined to the sloped areas of the Planning Area where the susceptibility to landslides are greatest. This is predominantly in the Hills Open Space Area within the eastern portion of the Planning Area.
- Likelihood of Future Occurrence: Likely
- Vulnerability: Extremely High
- Priority Hazard

Flood Hazards

FEMA Mapped Floodplains - 1%/0.2% Annual Chance

- Historically, flooding associated with severe winter storms has been among the most common disasters in the Bay Area. The Tri-City Planning Area has frequently suffered significant damage in past severe winter storms from floods as well as from high winds, landslides, debris flows and erosion.
- 20 state federal disaster declarations related to heavy rains and flooding in Alameda County.
- 55 NCDC flood events since 1993 for Alameda County.
- The Tri-City Planning Area has several winter storm events every year, with damages in these events ranging from minor cleanup to millions of dollars. 4 severe storm events occurred in 1986, 1998 and 2005-2006, and 2016. Since 2016, 3 federal and 2 state declarations for severe storms and flooding occurred in 2017. There have been three federal disaster declarations to date from flooding in 2023.
- The most common damage from winter rains and storms and associated flooding have been to infrastructure, including: washouts of culverts; landslides or debris slides affecting roads, and bridges; erosion of channels and adjacent areas; and tree falls.
- Likelihood of Future Occurrence: 1%-Occasional; 0.5%-Unlikely;
- Vulnerability: High
- Priority Hazard

Localized/Stormwater flooding

- Flood hazard areas for the Tri-City Planning Area are not limited to areas within FEMA-mapped floodplains, and include areas affected by localized, stormwater flooding events.

- Since the last plans, 6 federal and 4 state declarations for heavy rain and storms, flooding, and other damages occurred.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Landslide

- Historically, the Tri-City Planning Area has experienced damage from various slope failures associated with heavy rains and winter storm events. Fremont was close to being in the path of the 1998 Mission Peak slide. Also, in December of 2022 and again in January of 2023, Niles Canyon Road in Fremont was closed due to mudslides.
- CGS maps show portions of the Planning Area in high to very high susceptibility areas to Deep-Seated Landslides. These areas are generally confined to the sloped areas of the Planning Area, predominantly in the Hills Open Space Area within the eastern portion of the Planning Area.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Levee Failure

- There are numerous levee segments in the Tri-City Planning Area.
- Levee failures can occur during high water events and under normal non-flood conditions. There are numerous causes for such failures, including scour, foundation failures, under-seepage, through-seepage, animal burrows, and others. Levees can also fail as a result of earthquakes.
- The probability of levee failure is increasing over time due to sea level rise, increased flooding potential from global climate range resulting in early winter snow melts, and the likelihood of an earthquake.
- Based on the DFIRMS, there are several 0.2%, X-protected by levee flood zones that protect the Tri-City Planning Area. (Note: This is based on levees that are certified as providing 100-year level of protection). However, other non-certified levee segments are located throughout the Planning Area.
- No disaster declarations for levee failure have occurred in Alameda County since 1950.
- Likelihood of Future Occurrence: Occasional
- Vulnerability: High
- Priority Hazard

Severe Weather

Extreme Cold and Freeze

- The Planning Area experiences annual occurrences of winter weather, including extreme cold and freeze. Alameda County's monthly average maximum temperatures in the coldest months (November through March) range from the low-40s to the mid-50s. The lowest recorded daily extreme was 21°F on December 22, 1922. In a typical year, maximum temperatures fall below 32°F on 6.5 days.
- No federal disaster declarations related to freeze or Cold. 5 NCDC events for extreme cold and freeze/snow since 1996.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Extreme Heat

- Annual occurrences – it gets hot every summer. In Alameda County, monthly average maximum temperatures in the warmest months (June through September) range from the upper-60s to the low 70s. The highest recorded daily extreme was 109°F on September 4, 1971. In a typical year, maximum temperatures exceed 90°F on 3.5 days.
- The NCDC data shows 25 extreme heat incidents for both Alameda County since 1996.
- September of 2022 saw many hot days, with cooling centers being opened. A state proclamation was declared for the heat.
- Climate change will continue to affect this hazard in the future.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Heavy Rains and Storms (Thunderstorms, Hail, Lightning)

- Significant Tri-City Planning Area history: annual occurrences. According to the WRCC, average annual precipitation in the Planning Area is 14.31 inches per year. The highest recorded annual precipitation is 31.52 inches in 1983; the highest recorded precipitation for a 24-hour period is 13.67 inches on March 1, 1907. The lowest recorded annual precipitation was 6.89 inches in 1959.
- 20 state and federal disaster declarations related to heavy rains and flooding in Alameda County; 27 NCDC heavy rain and storm events since 1993 in Alameda County.
- Severe storms/heavy rains are the primary cause of most major flooding. It also contributes to landslides, debris flows, and erosion in the Planning Area.
- The Tri-City Planning Area generally has several winter storm events every year, with damages in these events ranging from minor cleanup to millions of dollars. 4 severe storm events occurred in 1986, 1998 and 2005-2006, and 2016. Since the last plan, 3 federal and 2 state declarations for severe storms and flooding occurred in 2017. There have also been three federal disaster declarations to date from severe storms and flooding in 2023.
- The most common damage from winter rains and storms and associated flooding have been to infrastructure, including: washouts of culverts; landslides or debris slides affecting roads, and bridges; erosion of channels and adjacent areas; and tree falls.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

High Winds and Tornadoes

- Annual occurrences of high wind events
- No state or federal disaster declarations. The NCDC data recorded 358 high wind incidents for Alameda County since 1955. This includes 3 tornado events (all of which were F0 – 1982, 1992, 1994). Diablo winds are a significant concern in the region and can contribute to wildfire spread and associated damage.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Medium
- Priority Hazard

Subsidence

- According to the 2023 State HMP, the primary causes of subsidence in California is associated with groundwater pumping, peat loss, and oil extraction.
- Union City mentioned a sinkhole in 2023 occurred. They noted that "We have seen other sink holes develop in Union City in the past and believe this will likely occur in our City again."
- USD in their Sea Level Rise Report noted that the National Research Council tracks subsidence and their "values include subsidence of 1.5 mm yr-1 for all of California south of Cape Mendocino due to deep tectonic movements." The report also noted potential subsidence issues resulting from the added fill in the area on poorly compacted Bay Muds.
- 2023 State Plan has Tri-City mapped near an area where subsidence is occurring due to groundwater pumping.
- Likelihood of Future Occurrence: Unlikely – Occasional
- Vulnerability: Medium
- Non-Priority Hazard (for the Planning Area as a whole)

Tsunami

- There has been no state or federal disaster declarations in Alameda County due to tsunami. The NCDC identifies 1 Tsunami event for Alameda County - March 11, 2011.
- The 2021 Alameda County LHMP reported that more than 71 tsunamis have been recorded in San Francisco Bay since 1854. Most of these tsunamis were generated by earthquakes in distant subduction zones near Russia, Japan, or Alaska. The worst tsunami to hit the Bay Area was generated in Alaska by a M 9.2 earthquake on March 27, 1964. This event produced a 2-foot runup in the nearby City of Alameda and a 4-foot runup in the City of Oakland. On March 11, 2011, a tsunami generated in Japan from the Fukushima earthquake resulted in a 2-foot runup in the nearby cities of Alameda and Berkeley.
- While life safety and property damage are a significant concern, other tsunami impacts are to natural resources (wetlands, endangered species, and habitat areas).
- Likelihood of Future Occurrence: Occasional
- Vulnerability: Medium
- Priority Hazard

Wildfire

- Wildfires occur on an annual basis in the Tri-City Planning Area.
- Any ignition has the potential to become an out of control wildfire.
- 1 state (1970) and 2 federal (1970 and 1991 (Tunnel Fire)) disaster declarations since 1950. 18 NCDC Events.
- Under normal conditions, most fires that start in the Tri-City Planning Area are efficiently controlled by firefighters with no loss of life or structures. A phenomenon known as "Diablo winds" can affect the severity of a wildfire. Red Flag days occur during conditions of low humidity, high temperatures, and hot, dry Diablo winds blowing in from the east and usually occur in the fall months. In recent years, these events are occurring more often.
- During the 75-year period between 1923 and 1998, 11 Diablo wind-driven fires in the Berkeley/Oakland hills burned a total of 9,840 acres, destroyed more than 4,000 homes, took 26 lives, and resulted in over $2 billion in financial losses. The most significant fire in this period was the October 20, 1991 Tunnel Fire in the Oakland-Berkeley hills. The fire resulted in 25 deaths, 150 injuries,

and the displacement of over 10,000 persons. With destruction and damage to over 3,400 residential units, losses were in excess of $1.5 Billion in 1991 dollars.

- The threat of catastrophic wildfires under Diablo wind conditions presents significant risks to public health and safety, homes, and property along the wildland-urban interface (WUI). This risk increases with an increase in development along the WUI.
- Recent drought conditions have exacerbated the risk of major wildland/urban interface fires in or near the Tri-City Planning Area.
- Wildfire smoke from other areas outside the Planning Area have occurred numerous times in the past. Though the fire itself may not affect the Tri-City, smoke and air quality effects have been felt and will continue to be an issue in the Planning Area.
- Likelihood of Future Occurrence: Highly Likely
- Vulnerability: Extremely High
- Priority Hazard

Tri-City Priority Hazards (by Jurisdiction)

City of Fremont

Priority Hazards:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Earthquake
- Flood: 1%/0.2% annual chance
- Flood: Localized/Stormwater
- Landslide
- *Levee Failure?*
- *Severe Weather: Extreme Cold and Freeze?*
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms (hail, lightning)
- *Severe Weather: High Winds and Tornadoes?*
- Tsunami
- Wildfire

Non-Priority Hazards:

- Drought and Water Shortage
- Subsidence
-
-
-

City of Newark

Priority Hazards:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Flood: 1%/0.2% annual chance
- Flood: Localized/Stormwater
- Landslide
- Levee Failure
- *Severe Weather: Extreme Cold and Freeze?*
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms (hail, lightning)
- *Severe Weather: High Winds and Tornadoes?*
- Tsunami
- Wildfire

Non-Priority Hazards:

- Subsidence
-
-
-
-
-

City of Union City

Priority Hazards:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Flood: 1%/0.2% annual chance
- Flood: Localized/Stormwater
- Landslide
- Levee Failure
- *Severe Weather: Extreme Cold and Freeze?*
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms (hail, lightning)
- *Severe Weather: High Winds and Tornadoes?*
- *Tsunami?*
- Wildfire

Non-Priority Hazards:

- Subsidence
-
-
-
-
-

Alameda County Water District

Priority Hazards:

- Dam Failure
- Earthquake
- Severe Weather: Heavy Rains and Storms (hail, lightning)
-
-
-

Non-Priority Hazards:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Drought & Water Shortage
- Flood: 1%/0.2% annual chance
- Flood: Localized/Stormwater
- Landslide
- Levee Failure
- Severe Weather: Extreme Cold and Freeze
- Severe Weather: Extreme Heat
- Severe Weather: High Winds and Tornadoes
- Subsidence
- Tsunami
- Wildfire

Union Sanitary District

Priority Hazards:

- Climate Change
- Coastal Flooding and Sea Level Rise
- Dam Failure
- Drought & Water Shortage
- Earthquake
- Flood: 1%/0.2% annual chance
- Flood: Localized/Stormwater
- Landslide
- *Levee Failure?*
- *Severe Weather: Extreme Cold and Freeze?*
- Severe Weather: Extreme Heat
- Severe Weather: Heavy Rains and Storms (hail, lightning)
- *Severe Weather: High Winds and Tornadoes?*
- Subsidence
- *Tsunami?*
- Wildfire

Non-Priority Hazards:

-
-
-
-
-
-

Mitigation Strategy: Goals

The most important element of the LHMP is the resulting mitigation strategy which serves as the long-term blueprint for reducing the potential losses identified in the risk assessment. The mitigation strategy is comprised of three components:

6. Mitigation Goals
7. Mitigation Actions
8. Mitigation Action (Implementation) Plan

Mitigation Goals

Up to now, the Planning Committee has been involved in collecting and providing data for the Tri-City Local Hazard Mitigation Plan. From this information, a Risk Assessment has been developed that describes the risk and vulnerability of the Tri-City Planning Area to identified hazards and includes an assessment of the area's current capabilities for countering these threats through existing policies, regulations, programs, and projects.

This analysis identifies areas where improvements could or should be made. Formulating Goals will lead to incorporating these improvements into the Mitigation Strategy portion of the LHMP. Our planning goals should provide direction for what risk reduction activities can be undertaken to make the Tri-City Planning Area more disaster resistant.

Mitigation Goals are general guidelines that represent the community's vision for reducing or avoiding losses from identified hazards. Goals are stated without regard for achievement, that is, implementation, cost, schedule, and means are not considered.

Goals are public policy statements that:

- **Represent basic desires of the jurisdiction;**
- **Encompass all aspects of planning area, public and private;**
- **Are nonspecific, in that they refer to the quality (not the quantity) of the outcome;**
- **Are future-oriented, in that they are achievable in the future; and**
- **Are time-independent, in that they are not scheduled events.**

    - ***While goals are not specific (quantitative), they should not be so general as to be meaningless or unachievable.***

    - ***Goal statements may form the basis for objectives. They should be stated in such a way as to develop one or more objectives related to each goal.***

    - ***The key point in writing goals is to remember that they must deal with results, not the activities that produce those results.***

    - ***Consider other planning area goals from other regional/county/city programs, plans and priorities.***

Types/Sources of other area mitigation plans/ programs include:

- General Plans
- Master Plans
- Stormwater Program and Plans
- Flood/Watershed Management Plans and Studies
- Drought Plans, Urban/Integrated Regional Water Management Plans
- Community Wildfire Protection Plans
- Strategic Fire Plans
- Dam Emergency Action Plans
- Emergency Operations Plans
- Climate Plans
- Others?

2018 California State Hazard Mitigation Plan Goals

1. Significantly reduce life loss and injuries.

2. Minimize damage to structures and property, as well as minimizing interruption of essential services and activities.

3. Protect the environment.

4. Promote community resilience through integration of hazard mitigation with public policy and standard business practices.

2023 (Draft) State Hazard Mitigation Plan Goals

GOAL 1—Significantly reduce risk to life, community lifelines, the environment, property, and infrastructure by planning and implementing whole-community risk reduction and resilience strategies.

GOAL 2—Build capacity and capabilities to increase disaster resilience among historically underserved populations, individuals with access and functional needs, and communities disproportionately impacted by disasters and climate change.

GOAL 3—Incorporate equity metrics, tools, and strategies into all mitigation planning, policy, funding, outreach, and implementation efforts.

GOAL 4—Apply the best available science and authoritative data to design, implement, and prioritize projects that enhance resilience to natural hazards and climate change impacts.

GOAL 5—Integrate mitigation principles into laws, regulations, policies, and guidance to support equitable outcomes to benefit the whole community.

GOAL 6— Significantly reduce barriers to timely, efficient, and effective hazard mitigation planning and action.

Tri-City Goals from Previous LHMPs (This is what we are updating)

City of Fremont 2016 LHMP

The goal of the LHMP is to maintain and enhance a disaster-resistant City by reducing the potential for loss of life, property damage, and environmental degradation from natural disasters, while accelerating economic recovery from those disasters. This goal is unchanged from the 2005 and 2012 plan and continues to be the goal of the City of Fremont.

City of Newark, Union City, USD (and old ACWD) 2017 LHMP

1. Protect the public's health and safety and minimize the damage to essential services, structures, property, and infrastructure as a result of hazards.

2. Promote hazard mitigation as an integrated public policy and as a standard business practice.

3. Encourage the development and implementation of long-term, cost effective, and environmentally sound mitigation projects.

4. Build and support local capacity to enable the public to prepare, respond, and recover from the impact of natural hazards.

5. Provide increased safety through the provision of adequate infrastructure, public education, and outreach programs.

6. Incorporate elements of hazard mitigation into cross functional planning and regulatory initiatives.

7. Retrofit, purchase, or relocate structures in high hazard areas, especially those known to be repetitively damaged.

ACWD 2022 LHMP

1. Protect the public's health and safety and minimize damage to essential services, structures, property, and infrastructure as a result of hazards.

2. Promote hazard mitigation as an integrated public policy and as a standard business practice.

3. Encourage the development and implementation of long-term, cost effective, and environmentally sound mitigation projects.

4. Build and support local capacity to enable the public to prepare, respond, and recover from the impact of natural hazards.

5. Provide increased safety through the provision of adequate infrastructure, public education, and outreach programs.

6. Incorporate elements of ACWD specific hazard mitigation into regional planning and regulatory initiatives.

7. Continuously monitor the functions of ACWD infrastructure in high hazard areas, especially those known to be in areas of potential damage from identified events.

Other Example Goal Statements

- Minimize risk and vulnerability from natural hazards
- Increase communities' awareness of vulnerability to hazards
- Increase the use of shared resources
- Improve communities' capabilities to mitigate losses
- Maintain coordination of disaster plans with changing DHS/FEMA needs
- Maintain FEMA eligibility/position jurisdictions for grant funding
- Maintain/enhance the flood mitigation program to provide 200/500-year flood protection
- Maintain current service levels
- Provide protection for existing buildings from hazards
- Provide protection for future development from hazards
- Provide protection for natural and cultural resources from hazard impacts
- Provide protection for people's lives from hazards
- Provide protection for public health
- Provide protection for critical services (fire, police, etc.) from hazard impacts
- Provide protection for critical lifeline utilities from hazard impacts
- Reduce exposure to hazard related losses
- Reduce the number of emergency incidents
- Make better use of technology

General Recommendation for Categories of Goals

- Reduce Losses/Protection of Life, Property, Public Health, and the Environment from all Hazards
- Reduce Losses/Protection of Critical Facilities and Infrastructure from all Hazards
- Public Education
- Increase County Capabilities to all Hazards
- Any Hazard-specific goals
- Integrate strategies for the protection of underserved and vulnerable populations

Goals Development

The purpose of goal's development is to reach a consensus on goals for the Tri-City 2024 LHMP. Provided above are example goals for this LHMP. ***You may reword those above or develop your own goals.*** These goal statements should serve as examples. It is vital that our Planning Committee establish its own goals.

You will each be given 3 sticky notes. On each note you will write what you think the goals for this Tri-City LHMP should be. Use one sticky note for each goal.

When done, we will:

- Pin/tape them to the wall/easel-chart and arrange them by category
- Combine and reword them into 3-5 goals for the plan and send them out to the Planning Committee for further review and refinement.

Mitigation Strategy Meetings
September 19 & 20, 2023
Day 2

Mitigation Strategy Action Development: Ground Rules

Rule 1: Each Participating Jurisdiction MUST have a Mitigation Action/Project to address each of their Priority Hazards (those rated as a high or medium significance in their Hazard Identification table).

Rule 2: Every Mitigation Action/Project MUST be supported by Risk Assessment Data contained within Chap 4 of the Base Plan and/or within jurisdictional annexes. Note: this might necessitate backfilling the hazard risk assessment data.

Rule 3: The Mitigation Actions/Projects for this 2024 LHMP should reflect each Participating Jurisdictions' WISH LIST for mitigation, regardless of funding source.

Rule 4: Any Mitigation Action/Project that might be considered for FEMA mitigation grant funding over the next 5-years covered by this LHMP MUST be included in this 2024 LHMP.

Rule 5: While the updated Mitigation Strategy should include all potential Mitigation Actions/Projects for each Participating Jurisdiction (regardless of funding source), keep in mind that no jurisdiction is obligated to implement ANY of the identified Mitigation Actions/Projects – all are always subject to funding and changing priorities.

Rule 6: Each Mitigation Action/Project to be included in this LHMP MUST have a Mitigation Action Worksheet completed by the owning Department or Agency. This applies to Mitigation Actions/Projects being carried forward from each Jurisdictions' previous LHMPs.

Rule 7: Each Participating Jurisdiction CAN LATER include Mitigation Actions/Projects that might not get identified during this Mitigation Action/Project Prioritization process – the key is to complete a Mitigation Action Worksheet for any project to be included in the LHMP prior to submittal to Cal OES/FEMA.

REMEMBER: Having a FEMA approved LHMP for your Jurisdiction is a prerequisite for being eligible to apply for FEMA pre and post mitigation funding.

Mitigation Strategy: Actions

Mitigation Actions are specific projects and activities that help achieve the goals and accomplish risk reduction in the community.

Categories of Mitigation Actions

PREVENTION: Preventive measures are designed to keep the problem from occurring or getting worse. Their objective is to ensure that future development is not exposed to damage and does not increase damage to other properties.

- Planning
- Zoning
- Open Space Preservation
- Land Development Regulations
  - ✓ Subdivision regulations
  - ✓ Building Codes
    - Fire-Wise Construction
  - ✓ Floodplain development regulations
  - ✓ Geologic Hazard Areas development regulations (for roads too!)
- Storm Water Management
- Fuels Management, Fire-Breaks

EMERGENCY SERVICES: protect people during and after a disaster. A good emergency services program addresses all hazards. Measures include:

- Warning (flooding, tornadoes, winter storms, geologic hazards, fire)
  - ✓ NOAA Weather Radio
  - ✓ Sirens
  - ✓ "Reverse 911" (Emergency Notification System)
- Emergency Response
  - ✓ Evacuation & Sheltering
  - ✓ Communications
  - ✓ Backup power supply/generators
  - ✓ Emergency Planning
    - Activating the EOC (emergency management)
    - Closing streets or bridges (police or public works)
    - Shutting off power to threatened areas (utility company)
    - Holding/releasing children at school (school district)
    - Ordering an evacuation (mayor)
    - Opening emergency shelters (Red Cross)
    - Monitoring water levels (engineering)
    - Security and other protection measures (police)
- Critical Facilities Protection (Buildings or locations vital to the response and recovery effort, such as police/fire stations, hospitals, sewage treatment plants/lift stations, power substations)

- ✓ Buildings or locations that, if damaged, would create secondary disasters, such as hazardous materials facilities and nursing homes
- ✓ Lifeline Utilities Protection

➢ Post-Disaster Mitigation

➢ Building Inspections
- ✓ ID mitigation opportunities & funding before reconstruction

PROPERTY PROTECTION: Property protection measures are used to modify buildings subject to damage rather than to keep the hazard away. A community may find these to be inexpensive measures because often they are implemented by or cost-shared with property owners. Many of the measures do not affect the appearance or use of a building, which makes them particularly appropriate for historical sites and landmarks.

➢ Retrofitting/disaster proofing
- ✓ Floods
  - Wet/Dry floodproofing (barriers, shields, backflow valves)
  - Relocation/Elevation
  - Acquisition
  - Retrofitting
- ✓ High Winds/Tornadoes
  - Safe Rooms
  - Securing roofs and foundations with fasteners and tie-downs
  - Strengthening garage doors and other large openings
- ✓ Winter Storms
  - Immediate snow/ice removal from roofs, tree limbs
  - "Living" snow fences
- ✓ Geologic Hazards (Landslides, earthquakes, sinkholes)
  - Anchoring, bracing, shear walls
  - Dewatering sites, agricultural practices
  - Catch basins
- ✓ Drought
  - Improve water supply (transport/storage/conservation)
  - Remove moisture competitive plants (Tamarisk/Salt Cedar)
  - Water Restrictions/Water Saver Sprinklers/Appliances
  - Grazing on CRP lands (no overgrazing-see Noxious Weeds)
  - Create incentives to consolidate/connect water services
  - Recycled wastewater on golf courses
- ✓ Wildfire, Grassfires
  - Replacing building components with fireproof materials
  - Roofing, screening
  - Create "Defensible Space"
  - Installing spark arrestors
  - Fuels Modification

- ✓ Noxious Weeds/Insects
  - Mowing
  - Spraying
  - Replacement planting
  - Stop overgrazing
  - Introduce natural predators
- Insurance

NATURAL RESOURCE PROTECTION: Natural resource protection activities are generally aimed at preserving (or in some cases restoring) natural areas. In so doing, these activities enable the natural beneficial functions of floodplains and watersheds to be better realized. These natural and beneficial floodplain functions include the following:

- storage of floodwaters
- absorption of flood energy
- reduction in flood scour
- infiltration that absorbs overland flood flow
- groundwater recharge
- removal/filtering of excess nutrients, pollutants, and sediments from floodwaters
- habitat for flora and fauna
- recreational and aesthetic opportunities

Methods of protecting natural resources include:

- Wetlands Protection
- Riparian Area/Habitat Protection/Threatened-Endangered Species
- Erosion & Sediment Control
- Best Management Practices

Best management practices ("BMPs") are measures that reduce nonpoint source pollutants that enter the waterways. Nonpoint source pollutants come from non-specific locations. Examples of nonpoint source pollutants are lawn fertilizers, pesticides, and other farm chemicals, animal wastes, oils from street surfaces and industrial areas and sediment from agriculture, construction, mining and forestry. These pollutants are washed off the ground's surface by stormwater and flushed into receiving storm sewers, ditches and streams. BMPs can be implemented during construction and as part of a project's design to permanently address nonpoint source pollutants. There are three general categories of BMPs:

9. Avoidance: setting construction projects back from the stream.
10. Reduction: Preventing runoff that conveys sediment and other water-borne pollutants, such as planting proper vegetation and conservation tillage.
11. Cleanse: Stopping pollutants after they are en route to a stream, such as using grass drainageways that filter the water and retention and detention basins that let pollutants settle to the bottom before they are drained:

- Dumping Regulations
- Set-back regulations/buffers

- Fuels Management
- Water Use Restrictions
- Landscape Management
- Weather Modification

STRUCTURAL: Projects that have traditionally been used by communities to control flows and water surface elevations. Structural projects keep flood waters away from an area. They are usually designed by engineers and managed or maintained by public works staff. These measures are popular with many because they "stop" flooding problems. However, structural projects have several important shortcomings that need to be kept in mind when considering them for flood hazard mitigation:

- They are expensive, sometimes requiring capital bond issues and/or cost sharing with Federal agencies, such as the U.S. Army Corps of Engineers or the Natural Resources Conservation Service.
- They disturb the land and disrupt natural water flows, often destroying habitats or requiring Environmental Assessments.
- They are built to a certain flood protection level that can be exceeded by a larger flood, causing extensive damage.
- They can create a false sense of security when people protected by a structure believe that no flood can ever reach them.
- They require regular maintenance to ensure that they continue to provide their design protection level.

Structural measures include:

- Detention/Retention structures
- Erosion and Sediment Control
- Basins/Low-head Weirs
- Channel Modifications
- Culvert resizing/replacement/Maintenance
- Levees and Floodwalls
- Anchoring, grading, debris basins (for landslides)
- Fencing (for snow, sand, wind)
- Drainage System Maintenance
- Reservoirs (for flood control, water storage, recreation, agriculture)
- Diversions
- Storm Sewers

PUBLIC INFORMATION: A successful hazard mitigation program involves both the public and private sectors. Public information activities advise property owners, renters, businesses, and local officials about hazards and ways to protect people and property from these hazards. These activities can motivate people to take protection:

- Hazard Maps and Data
- Outreach Projects (mailings, media, web, speakers, displays)
- Library Resources
- Real Estate Disclosure
- Environmental Education

Mitigation Actions/Projects from previous LHMPs (This is what we are updating)

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
2016 City of Fremont Mitigation Actions				
Perform appropriate seismic and fire safety analysis based on current and future use for all City-owned facilities and structures.				
Strengthen, rehabilitate or replace City facilities and structures, based on the seismic and fire safety analysis, as funding is available.				
Conduct ongoing training for first responders and City personnel to ensure they have the necessary training and equipment to deal with a hazard (including natural and man-made disasters).				
Reduce seismic and fire risk in existing development through building and fire code updates and enforcement.				
Explore local legislation to regulate the storage of hazardous materials to be protected from flood zones, rising sea levels and tsunami inundation areas.				
Coordinate disaster preparation and mitigation practices with private sector, public institutions and other public bodies.				
Protect vulnerable water facilities to ensure an adequate water supply during emergencies and disaster recovery.				
Protect vulnerable electric systems and facilities and build resiliency so disruption to the system is minimized during and following disasters. Ensure adequate redundancy and fuel is available to maintain critical facilities.				
Improve the disaster-resistance of the natural gas delivery system to increase public safety and to minimize damage and service disruption following a disaster.				
Protect vulnerable wastewater facilities to ensure wastewater is treated during emergencies and disaster recovery.				
Perform hazard vulnerability analysis for solid waste management facilities utilized by the City.				
Integrate Climate Action Plan goals and actions with the Local Hazard Mitigation Plan goals and actions, if determined feasible.				
Integrate climate change research and adaptation planning into City operations and services.				
Rehabilitate the City's storm water system to reduce local flooding of nearby streets, utilities and buildings, caused by storm drainage during storms, high tides, sea level rise, seismic events and power outages.				
Streamline the permitting process to rebuild residential and commercial structures following disasters.				
Provide outreach activities related to hazard mitigation and disaster preparedness.				
Reduce hazard vulnerabilities for non-City-owned buildings throughout Fremont.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Utilize vegetation management to reduce risks in existing development				
The City's Soft-Story Residential Building Program, Existing Tilt-Up Concrete and Reinforced Masonry Buildings Programs were to be completed by 2008. All known buildings have been retrofitted and removed from the list of buildings out of compliance. If additional buildings are found to be out of compliance, the City will continue to implement the programs.				
Continue the City's participation in the National Flood Insurance Program.				
Establish cooling centers and encourage landscaping improvements to reduce Fremont resident's vulnerability to extreme heat events, severe storms, and associated hazards.				
Collaborate with ACWD, local, state, regional and federal partners to increase the security of Fremont's water supply from climate change impacts.				
Mitigate the impacts of sea level rise in Fremont, by making shoreline and Bay lands facilities more resilient to earthquake, storm and high water elevation hazards in order to maintain functionality and protect inland facilities. Define any associated tsunami hazards and mitigation.				
2017 City of Newark Actions				
Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.				
Continue to support the Planning Area-wide actions identified in this plan.				
Actively participate in the plan maintenance strategy identified in this plan.				
Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.				
Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.				
Integrate the HMP into other plans, programs, or resources that dictate land use or redevelopment.				
Adopt the 2016 California Building Code.				
Update the city zoning code, including considerations for hazard mitigation.				
Include elements of the HMP to inform future updates to the Newark Climate Action Plan.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Complete Railroad overcrossing at Central Avenue to prevent isolation during seismic event.				
Replace Eucalyptus groves with non-hazardous tree species.				
Conduct storm drainage improvements along Lindsay Tract Street				
Retrofit police administration building to essential services/critical facility standards.				
Retrofit Administration Building and Library to current seismic standards.				
Relocate current Emergency Operations Center (EOC) and update critical EOC equipment.				
Develop a comprehensive post disaster recovery plan.				
Develop a comprehensive Continuity of Operations (COOP) Plan for Administration and templates for individual department COOP development.				
Retrofit and update the Fire Station Training Facility (Station 27).				
Develop a jurisdiction-wide tree inventory and long-term tree management plan including an outreach initiative encouraging Newark residents to conduct tree maintenance on private property.				
Developed a phased approach to citywide tree inspection and pruning.				
Develop a comprehensive public outreach campaign that informs residents of pipeline risks in the community and provides safety information on how to identify potential pipeline failure hazards.				
2017 Union City Mitigation Actions				
Where appropriate, support retrofitting, purchase, or relocation of structures in hazard-prone areas to prevent future structure damage. Give priority to properties with exposure to repetitive losses.				
Continue to support the Planning Area-wide actions identified in this plan.				
Actively participate in the plan maintenance strategy identified in this plan.				
Consider participation in incentive-based programs such as the Community Rating System, Tree City, and StormReady.				
Maintain good standing under the National Flood Insurance Program by implementing programs that meet or exceed the minimum NFIP requirements. Such programs include enforcing an adopted flood damage prevention ordinance, participating in floodplain mapping updates, and providing public assistance and information on floodplain requirements and impacts.				
Integrate the hazard mitigation plan into other plans, programs, or resources that dictate land use or redevelopment				
Seek City Council approval and funding for a full-time Emergency Manager job classification.				
Update the citywide Continuity of Operations/Continuity of Government (COO/COG) Plan from the Comprehensive Emergency Management Plan (CEMP), and implement required COO/COG actions.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Based on EOC staffing capabilities assessment, ensure that mandated training is provided to all employees in SEMS, FEMA ICS-100, ICS-200, IS-700, and IS-800; and ensure that employee training records are securely maintained.				
Based on EOC staffing capabilities assessment, ensure that mandated training is provided to employees who require advanced knowledge and application of the ICS, such as primary and alternate EOC Section Chiefs and senior field personnel, to include at least ICS-300, ICS-400, and the FEMA Professional Development Series; and ensure that employee training records are securely maintained.				
Based on EOC staffing capabilities assessment, ensure that all Police Department staff who may be assigned the role of incident commander at an emergency/disaster scene have received Incident Commander training; and ensure that employee training records are securely maintained.				
Monitor local availability of upcoming training opportunities for city staff regarding incident staffing, disaster response, and recovery.				
Conduct EOC tabletop exercise(s) to evaluate capabilities and train employees in their assigned EOC role(s).				
Develop and exercise a Disaster Debris Management Plan.				
Enhance public education and awareness of natural and manmade hazards in the community and public understanding of disaster preparedness, including foreign language translations.				
Ensure all property address signage meets current Building and Fire Code standards.				
Develop improved capabilities to incorporate GIS technology by all departments into services provided to the public and for use during emergency/disaster incidents.				
Conduct a test of emergency communications and information systems interoperability, to establish baseline capabilities for employee call-back, communications between the EOC and incident command, and communications with the Operational Area and Mutual Aid resources.				
Implement Fire Department field inspection system using portable computers for engine company inspections and Fire Prevention inspections, to integrate inspections, re-inspections, invoicing, permits, CUPA and business license data.				
Review, revise, and update the Comprehensive Emergency Management Plan (CEMP) – ACFD contract requirement				
Conduct a gap analysis of the Union City Emergency/Disaster preparedness and response program, to include a comprehensive review of employee training requirements and needs, plans and procedures, EOC equipment and staffing capabilities, and related analyses.				
Conduct a seismic and functional assessment of the CERT trailer behind Fire Station #31, for use as the designated Alternate EOC site.				
Train appropriate staff in FEMA's Hazards-US GIS extension and Benefit/Cost Analysis Tool for use in potential grant applications and post-disaster property assessments.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Acquire handheld GPS trackers to develop an urban tree inventory for monitoring the health of trees and identifying potentially dangerous dead or dying trees.				
Develop a long-term urban forest management plan to address adverse future impacts on the City's natural resources.				
Develop and maintain a landscape design manual to provide general guidance and education to the public on water efficiency in landscaping and to serve as a resource for water efficient landscape design and installation, including lists of recommended site appropriate native and drought-tolerant plant species.				
Integrate climate change and natural hazards planning in to current city plan revisions and future planning initiatives.				
Work with ACWD to design and install seismically resilient backbone pipeline through liquefiable soils in Union City				
Acquire emergency generators for the City's critical facilities, specifically Fire Station 31, the Senior Center, and Corporation Yard.				
Conduct a comprehensive structural seismic analysis of the City's facilities.				
Establish a Broadband-WiFi10g network in the Station District.				
Establish a Broadband-WiFi10g network backbone infrastructure along major thoroughfares throughout the City.				
Conduct a Feasibly Study to review necessary improvements required to make Mark Green Sports Center a base camp for recovering families after crisis				
Conduct a Feasibility Study to identify temporary morgue facilities.				
Conduct a Feasibility Study to review the highway overpass bridge of Alvarado Niles Road over I-880 , for any seismic upgrades				
Coordinate with the city of Hayward to conduct a Feasibility Study to review any seismic upgrades for the I-880 overpass over Whipple Road				
Construct grade separations on the Niles Subdivision and the Oakland Subdivision in the Decoto neighborhood, and on the Coast Subdivision on Union City Boulevard, Smith Street, Dyer Street, and Alvarado Boulevard.				
Acquire two Mobile Emergency Operations Centers				
Acquire two 4-wheel drive emergency response vehicles capable of supporting emergency/disaster workers with enhanced safety when traveling into and out of disaster zones or dangerous locations.				
Acquire four radio charging stations for spare radios.				
Acquire two Mobile Ultra High Frequency (UHF) Base Units to communicate with deployed field radios.				
Acquire 100 portable beds/cots for use to support sheltering/mass care operations during a disaster.				
Acquire four satellite phone.				
Acquire two rescue boats				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Establish redundant, offsite copies of crucial information and all City data to be able to maintain basic network functions.				
Establish a fully redundant data center with no outage if the main building fails.				
Acquire offsite battery backups to carry energy load until generators start.				
Develop unmanned aerial vehicle (UAV) capability for hazard mitigation surveys and post-disaster damage assessments; and develop policies, procedures and staff training guidelines for UAV use.				
Develop multi-cultural training presentations and handouts in multiple languages, to expand participation in the Community Emergency Response Team (CERT) program.				
Establish a central paging system for all City locations to be expanded for SMS/cell phone alerts during major disasters.				
Establish a high speed link from all City facilities back to City Hall				
Establish a second location in the City to provide internet/email/external connections, as a backup to the existing City Hall systems that perform this function.				
Establish a portable unit or fixed location for use as a community preparedness training site, volunteer coordination point, and disaster first responder work station center with access to the City's computer network, to supplement the Emergency Operations Center.				
Expansion of central lock system to all off sites and all doors.				
2022 Alameda County Water District Actions				
Develop and maintain an asset management program that tracks natural hazard events that impact the District and captures damages to District assets, service disruption and other perishable data (e.g., high water marks, preliminary damage estimates, damage photos) to support future mitigation efforts including the implementation and maintenance of the HMP). If feasible, review historic incident reports and jobs for information related to past hazard events.				
Reevaluate standby generator needs and purchase and install as needed, such as at the desalinization plant and aquifer reclamation production wells.				
Design and install a seismically resilient backbone pipeline through liquefiable soils, primarily in Union City.				
Install emergency isolation valves into the distribution system with remote operation capability, as appropriate.				
Retrofit and/or update District tanks and reservoirs to improve seismic resilience, including reservoir roof at the following: Alameda, Decoto, Middlefield, and Patterson.				
Consider the purchase and installation of fuel cells as alternative emergency power backup systems at Newark Desalination Facility and the Blending Facility.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Conduct channel betterments on the Vallecitos Channel or install a pipeline adjacent to the channel to increase reliability of flows to facilitate groundwater recharge.				
Repair diversion capability through the Kaiser embankment to ensure post disaster groundwater recharge capabilities and to protect the natural and beneficial functions of the Kaiser Ponds.				
As needed, review, update and enhance intertie agreements with the City of Hayward and the City of Milpitas.				
Consider identifying a sister jurisdiction and develop a protocol for exchanging post event Shakecast information.				
Study water supply reliability alternatives including recycled water, and Lake Del Valle and Los Vaqueros reservoir storage expansion projects to improve water supply capabilities from catastrophic losses of supply.				
Continue to participate in local emergency response trainings and exercises.				
Ensure appropriate staff is trained to support District functions when the Emergency Operations Center is activated.				
Continue to integrate the capital improvement program with the HMP.				
Continue to prioritize and implement distribution system replacements and improvements to identified critical consumers and/or vulnerable areas.				
Where appropriate, support retrofitting, purchase or relocation of structures located in high hazard areas and prioritize those structures that have experienced repetitive losses.				
Actively participate in the plan maintenance protocols outlined in Volume I of the HMP				
Continue implementing a comprehensive demand management program.				
Continue existing vegetation management program to minimize risk of wildfire and landslides.				
Consider a post-disaster recovery plan and coordinate with Tri Cities on their debris management plans.				
Review the City of Fremont's HMP and coordinate with Fremont's Emergency Planner to further develop HMP.				
Installing a second Deep Aquifer water well at the Mowry Wellfield which is not known to be impacted by PFAS and will prove to be beneficial for long term water supply reliability. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. A second well, will make a portion of the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Construct a system to treat 6 MGD of well water at the blending facility for PFAS and increase the amount of water the facility can provide to our customers while maintaining PFAS levels below the Notification Levels. As a portion of the groundwater supply is utilized by ACWD as dry year and multi-year critical drought reserve, it's use is being limited by the detection of PFAS. Treatment will make the dry year and multi-year critical drought reserve available again, thereby alleviating impacts.				
Complete a redesign of blending facility to allow low production and neat chemical feed.				
Evaluation and preliminary design of an intertie with San Francisco Inter-Bay Pipeline 1, 2 and/or 5.				
Complete desalinization facility reliability enhancements as indicated in the Integrated Resources Plan.				
2017 Union Sanitary District Mitigation Actions				
Build a new facilities maintenance shop – facility will meet seismic standards and built on a raised foundation to accommodate hazards of sea level rise and flooding				
Equalization Storage Basin at Alvarado. Basin will temporarily hold waste water if discharge through the East Bay Dischargers Authority (EBDA) system is interrupted. This prevents discharge of treated waste into Alameda Creek.				
Build Digester No. 7. With decreased liquid flow and increased solids management, increased digester operations are required to properly treat solid waste which will also generate additional bio-gas for co-generation of electricity.				
Rebuild East Aeration Tank Roof – The tank concrete roof has been identified as seismically unstable and has a weakened load capacity. Loss of this structure reduces our treatment capacity by 20%.				
Seismic upgrade of Primary Clarifier 1-4 - The roof structure over the clarifiers has been identified as seismically unstable. Loss of this structure would reduce our treatment capacity by approximately 85 percent.				
Upgrade Standby Power Generation System - Replace the current 6 standby diesel generators for the treatment plant with newer more reliable generators that produce fewer emissions.				
Emergency back-up data communications – provide redundant data communications for monitoring and operation of USD wastewater pumping and treatment equipment at the treatment plant and pump stations.				
Integrate the HMP into other plans and programs (e.g. CIP, District-Wide Master Plan)				
Develop and implement a program and process to capture historical and perishable data after any event to support future mitigation efforts.				
Participate in the HMP maintenance and updating outlined in Volume I of this HMP.				
Improve Public Information and Public Outreach to include Hazard Mitigation Programs. Includes newsletter and educational video.				

Mitigation Action (2016/2017/2022 LHMPs)	Complete	Ongoing	Not Started	Project in LHMP Update
Seismic Retrofit of Concrete Structures - This is an ongoing project of improving concrete structures as we have other repairs or improvements of the structure. Planned actions and estimates are from our documented seismic assessments				
Newark Pump Station Emergency Outfall – Establish an outfall from the Newark pump station to the SF bay. This will allow discharge of wastewater if the forcemain to the treatment plant is damaged or the treatment plant is damaged and prevent wastewater backup into communities and wetland areas causing a public health concern.				
Forcemain Alameda creek crossing ground stabilization – The soil around the forcemain near Alameda creek has been identified as very unstable. This will stabilize the soil and forcemain pipeline to prevent sewage leakage into Alameda creek and the wetland areas				
Forcemain lining – Forcemain is constructed of segmented concrete pipe. This project will line the pipeline to prevent leakage at joints if the pipeline moves or settles. Much of this pipeline is within protected wetland areas.				
Admin Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.				
Control Building Seismic Upgrade - This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.				
Field Ops Building Seismic Upgrade – This building was identified to be critical to life safety and restoring basic service. The building has seismic deficiencies and is vulnerable to damage from a seismic event.				

Mitigation Strategy: Action (Implementation) Plan

The mitigation action plan describes how the mitigation actions will be implemented, including how those actions will be prioritized, administered, and incorporated into the community's existing planning mechanism. Each participating jurisdiction must have a mitigation action(s) and an action plan specific to that jurisdiction and its priority hazards and vulnerabilities.

Mitigation Criteria

For use in selecting and prioritizing Proposed Mitigation Measures

1. STAPLEE

Social: Does the measure treat people fairly? (different groups, different generations)

- Community Acceptance
- Effect on Segment of Population
- Social Benefits

Technical: Will it work? (Does it solve the problem? Is it feasible?)

- Technical Feasibility
- Reduce Community Risk
- Long Term Solution/Sustainable
- Secondary Impacts

Administrative: Do you have the capacity to implement & manage project?

- Staffing
- Funding Allocated
- Maintenance/Operations

Political: Who are the stakeholders? Did they get to participate? Is there public support? Is political leadership willing to support?

- Political Support
- Local Champion
- Public Support
- Achieves Multiple Objectives
- Supported by a broad array of Stakeholders

Legal: Does your organization have the authority to implement? Is it legal? Are there liability implications?

- Existing Local Authority
- State Authority
- Potential Legal Challenges

Economic: Is it cost-beneficial? Is there funding? Does it contribute to the local economy or economic development?

- Benefit of Action
- Cost of Action
- Cost Effective/Economic Benefits
- Economically Viable
- Outside Funding Required

Environmental: Does it comply with Environmental regulations?

- Effect on Land/Water
- Effect on Endangered Species
- Effect on Cultural Resources
- Effect on Hazmat sites
- Consistent with Community Environmental Goals
- Consistent with Environmental Laws
- Environmental Benefits

2. SUSTAINABLE DISASTER RECOVERY

- Quality of Life
- Social Equity
- Hazard Mitigation
- Economic Development
- Environmental Protection/Enhancement
- Community Participation

3. SMART GROWTH PRINCIPLES

- Infill versus Sprawl
- Efficient Use of Land Resources
- Full Use of Urban Resources
- Mixed Uses of Land
- Transportation Options
- Detailed, Human-Scale Design

4. OTHER

- Does measure address area with highest risk?
- Does measure protect …
  - ✓ The largest # of people exposed to risk?
  - ✓ The largest # of buildings?
  - ✓ The largest # of jobs?
  - ✓ The largest tax income?
  - ✓ The largest average annual loss potential?
  - ✓ The area impacted most frequently?

- ✓ Critical Infrastructure (access, power, water, gas, telecommunications)
- Timing of Available funding
- Visibility of Project
- Community Credibility

Mitigation Action Prioritization Instructions

The committee's brainstormed list of mitigation actions and projects are organized by hazard and posted on flip-chart paper around the room.

You each have 3 sets of colored dots:

- 3 red dots
- 3 blue dots
- 3 green dots

The red dots are for high priority (5 points each)

The blue dots are for medium priority (3 points each)

The green dots are for low priority (1 point each)

Place your dots on any mitigation action/project, using the different colors to indicate your priority. You may use as many of your dots, of any color, on any mitigation action/project --- or you may spread them out using as few of your dots as you wish. The scored dots will indicate the consensus of the Planning Committee.

Use the list of mitigation selection criteria (above) to help you make your determinations.

Your votes will indicate the consensus of the team.

After the totals are counted, we will discuss them further to confirm or modify any of the results as necessary to best meet the goals of this LHMP.

Tri-City
Mitigation Action Worksheet

Jurisdiction:	
Mitigation Action/Project Title:	
Hazards Addressed:	
Issue/Background:	
Project Description:	
Other Alternatives:	
Existing Planning Mechanism(s) through which Action will be implemented:	
Responsible Office/Partners:	
Cost Estimate:	
Benefits (Losses Avoided):	
Potential Funding:	
Timeline:	
Project Priority (H, M, L):	

Worksheet completed by:	
Name and Title:	
Phone:	

Tri-City LHMP Update Mitigation Strategy Meetings – Action Prioritization

Actions sorted by Vote Hazard

Agency/ Department	Mitigation Action Title	Hazards Addressed	Votes (Points)*
Projects identified during Mitigation Strategy Meeting			
All	Enhance Public Education and Outreach program for all hazards (priority and non-priority	Multi-Hazard	8
Fremont lead / All	Enhance GIS clearinghouse/portal – Southern Alameda County GIS Authority mapping consortium (Union City to rejoin)	Multi-Hazard	72
Cities	Update severe weather response plans / EOP annexes	Multi-Hazard	0
All	Communication upgrades -systems, equipment, etc. to communicate during and post disaster (alternative to cell communication)	Multi-Hazard (earthquake)	32
All	Acquire satellite coms to ensure communications post disaster	Multi-Hazard	11
All	EOC relocations and/or retrofits (EQ safe)	Multi-Hazard	23
All	Establish / update backup power to critical facilities and infrastructure	Multi-Hazard	46
	Establish / update backup power to emergency shelter locations	Multi-Hazard	22
	Secure mobile back up power sources	Multi-Hazard	0
Newark / Union City	Update Climate Action Plan w/adaptation considerations and implement resulting projects	Climate Change	43
Fremont	Climate Ready Fremont Update, with implementation of resulting projects	Climate Change	14
	Carb Zero emission vehicle standards compliance	Climate Change	6
USD	ETSU Project Upgrades (Enhanced Treatment Site Upgrades)	Climate Change / Drought & Water Shortage / Earthquake	11
All Cities	Develop, Update and Implementation of Urban Forest / Tree Management Plan (includes Newark Urban Forest Master Plan – 16 votes)	Climate Change / Drought & Water Shortage / Severe Weather: Extreme Heat, Heavy Rain and Storms	46
Newark	Eucalyptus Grove Reduction	Climate Change / Drought & Water Shortage / Severe Weather: Extreme Heat, Heavy Rain and Storms	14
	Xeriscaping	Climate Change / Drought & Water Shortage / Severe Weather: Extreme Heat	1

Agency/ Department	Mitigation Action Title	Hazards Addressed	Votes (Points)*
	Retrofit key respite areas/cooling centers with air scrubbing, filtration systems	Climate Change / Severe Weather: Extreme Heat / Wildfire	0
USACE w/ Partners	Construct sea wall around South Bay	Coastal Flooding & Sea Level Rise	14
	Salt marsh levee breach project	Coastal Flooding & Sea Level Rise	24
	South Bay salt pond restoration project (Cargill)	Coastal Flooding & Sea Level Rise	24
USD	Evaluate and harden/replace force mains in coastal areas	Coastal Flooding & Sea Level Rise	8
Newark	Sea level rise resiliency study	Coastal Flooding & Sea Level Rise	17
All	EAP coordination, training, exercises (w/dam owners)	Dam Failure	10
ACWD	Continue to regularly inspect and monitor dams, especially during severe weather events	Dam Failure	6
	Coordinate and evaluate dams of concern and possible failures, with a focus on earthquake risk	Dam Failure / Earthquake	8
	Evaluate Alert & Warning program relative to dams and earthquake risk	Dam Failure / Earthquake	4
ACWD	Seismic upgrades to Alameda and Patterson reservoirs	Earthquake	4
ACWD, others?	Upgrades / earthquake retrofits of water mains and hydrants	Earthquake	22
SFPUC, others?	SFPUC (Hetch-Hetchy) pipeline emergency plan	Earthquake	1
All	Evaluate and update materials and construction specifications for critical facilities and infrastructure	Earthquake	9
All	EQ evaluations, hardening and retrofits for existing critical facilities and infrastructure and community lifelines	Earthquake	46
All Cities	Review and update construction standards with adoption of CBC and development of local amendments	Earthquake	10
Fremont	Fire Station hardening/retrofit	Earthquake	6
	Groundwater recharge planning	Drought & Water Shortage	0
	Establish and maintain water use efficiency team program	Drought & Water Shortage	6
USD	Construct digesters to flow solids	Drought & Water Shortage	0
	Conduct water supply assessments	Drought & Water Shortage	0
	Continue updates to Integrated/Urban Regional Water Management Plans	Drought & Water Shortage	0

Agency/ Department	Mitigation Action Title	Hazards Addressed	Votes (Points)*
USD	Force main ground stabilization	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms	13
USD	I & I system improvements to prevent intake of groundwater	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms	15
All	Implement stormwater master plans	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms	44
Fremont	Implement five 404 FEMA mitigation projects -Sullivan Underpass – minimize future storm damage to pumps -Stanley Bridge – protect bridge abutment form scouring and erosion during storms -Morrison Canyon Rd. – Increase pipe circumference to prevent future clogging of culverts during storms and prevent erosion -Mill Creek soil stabilization -Rancho Higuera Historical Park – Improvements to prevent future levee breaches during storms and downstream damage	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms / Landslide	25
Newark	Flood control projects resulting from 2023 storms -lines H & I improvements	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms / Landslide	27
	Wetlands restoration/preservation – flood mitigation	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms / Coastal Flooding and Sea Level Rise / Levee Failure	15
Newark / Union City	Review and update flood protection ordinance	Flood: 1%/0.2% / Localized Flooding / Heavy Rains and Storms / Coastal Flooding and Sea Level Rise / Levee Failure	19
Fremont	Rural Morrison Canyon road slide mitigation	Landslide	5
Fremont, Others?	Soil monitoring in/along key roadways	Landslide	9
Fremont	Mission Peak hillside monitoring existing slide	Landslide	2
Fremont	Signage to warn of landslide areas	Landslide	0
	1. Levee breach repair – Rancho E. Pine??	Levee Failure	13
	Signage project to warn residents, visitors where the Tsunami evacuation areas are located	Tsunami	1
All Cities	Continue to adopt CBC w/ local amendment updates	Wildfire	5

Agency/ Department	Mitigation Action Title	Hazards Addressed	Votes (Points)*
	Continue to update vegetation management ordinance	Wildfire	8
Fremont	Update vegetation management ordinance	Wildfire	6
Union City	Fuels mitigation project – Alco Fire	Wildfire	16
All Cities / Caltrans	Fuels mitigation work on evacuation areas	Wildfire	19
All Cities	Fuels reduction - Goats	Wildfire	1
Projects taken from Goal Statements			
	Update EOPs and annexes to address historically underserved populations, individuals with a disability or access and functional needs, and communities disproportionately impacted by disasters and climate change	Multi-Hazard	N/A
	Develop debris removal plan as part of recovery planning, to include right of entry, financing, mapping, and protocols for hazardous waste disposal	Multi-Hazard	N/A
	Develop procedures for ingress and egress for first responders during a major disaster	Multi-Hazard	N/A
All	Develop, share, and maintain comprehensive GIS datasets of critical facilities, infrastructure, community lifelines, and other key assets	Multi-Hazard	N/A
Fremont	Develop strategy to reduce wildfire risk in surrounding hillside areas	Wildfire	N/A

C.2 Categories of Mitigation Measures Considered

The following categories of mitigation measures are based on the National Flood Insurance Program (NFIP) Community Rating System (CRS).

- Prevention
- Property Protection
- Natural Resource Protection
- Emergency Services
- Structural Projects
- Public Information

C.3 Cities of Fremont, Newark, and City of Union City Analysis of Alternative Mitigation Measures per Category

Note: This review of mitigation measures is in compliance with the FEMA's nationally accepted six mitigation categories and FEMA's CRS Program requirement to provide a comprehensive evaluation of the six mitigation categories with a specific requirement that Preventative Measures be thoroughly reviewed. This review leads to the projects incorporated into the mitigation strategy action plan. This Section specifically focuses on the mitigation measures and potential mitigation strategies specific to City

of Fremont, the participating CRS community to this plan and the Cities of Newark and Union City, also LHMP participants, considering joining the CRS.

C.3.1. Preventive Measures

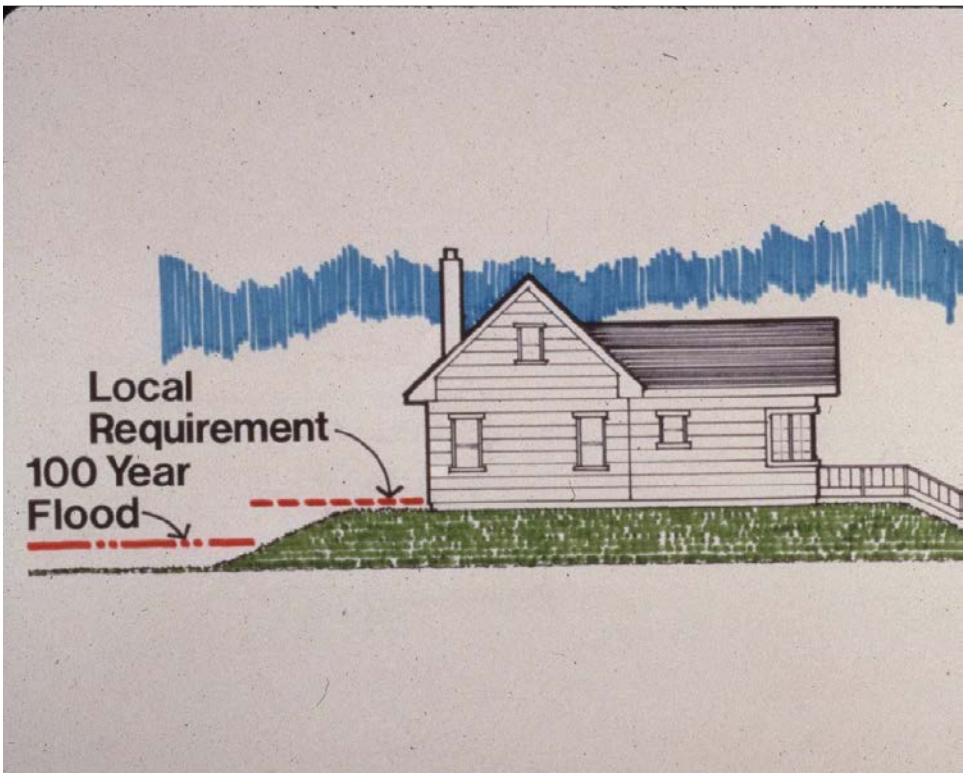
Preventive measures are designed to keep a problem - such as flooding - from occurring or from getting worse. The objective of preventive measures is to ensure that future development is not exposed to damage and does not cause an increase in damage to other properties. Building, zoning, planning, and code enforcement offices usually administer preventive measures. Some examples of types of preventive measures include:

- Building codes and floodplain regulations
- Comprehensive land use planning, zoning, and open space preservation
- Stormwater management and subdivision regulations

Building Codes

Building codes provide one of the best methods of addressing natural hazards. When properly designed and constructed according to code, the average building can withstand many of the impacts of natural hazards. Hazard protection standards for all new and improved or repaired (and substantially damaged) buildings can be incorporated into the local building code. Building codes can ensure that the first floors of new buildings are constructed to be higher than the elevation of the 100-year flood or 1% annual chance flood (the flood that is expected to have a one percent chance of occurring in any given year). This is shown in Figure C-1.

Figure C-1 Building Codes and Flood Elevations



Floodplain Regulations

Most communities with a flood problem participate in the NFIP. The NFIP regulations codified within 44 CFR sets minimum requirements for the participating communities' standards for development, subdivision of land, construction of buildings, installation of mobile homes, and improvements and repairs to buildings. These are usually spelled out in a separate ordinance. More recently in California, communities are adopting the new State of California model ordinance for local agencies to use/adopt that are integrated with the I-Codes, specifically the flood resistant design and construction sections within the 2021 International Building Code, Residential Code, and other I-Codes and ASCE 24-14. Adoption of the new model ordinance (or Appendix G) reflects consistency with the current I-Codes, which meet the minimum requirements of the NFIP and in some instances, exceeds the minimum NFIP requirements.

The NFIP minimum requirements are summarized below. It should be stressed that these are minimum requirements. Local conditions, such as high velocity flooding or the presence of a potential dam failure, may warrant higher local standards.

Enforcement

To ensure that communities are meeting the NFIP standards and the new California model ordinance (Appendix G of the CA Building Code), the Federal Emergency Management Agency (FEMA) periodically conducts a Community Assessment Visit. During this visit, the maps and ordinances are reviewed, permits

are checked, and issues are discussed with staff. Failure to meet all of the requirements can result in one or more consequences:

- Reclassification under the Community Rating System to a higher class
- Probation, which entails a $50 surcharge on every flood insurance policy in the community, or
- Suspension from the NFIP.

Suspension is the most serious. It means that the community is out of the NFIP and the following sanctions are imposed:

- Flood insurance will not be available. No resident will be able to purchase a flood insurance policy.
- Existing flood insurance policies will not be renewed.
- No direct federal grants or loans for development may be made in identified flood hazard areas under programs administered by federal agencies, such as HUD, EPA, and the Small Business Administration.
- Federal disaster assistance will not be provided to repair insurable buildings located in identified flood hazard areas for damage caused by a flood.
- No federal mortgage insurance or loan guarantees may be provided in identified flood hazard areas. This includes policies written by FHA, VA, and others.
- Federally insured or regulated lending institutions, such as banks and credit unions, must notify applicants seeking loans for insurable buildings in flood hazard areas that there is a flood hazard and the property is not eligible for federal disaster relief.

These sanctions can be severe for any community with a substantial number of buildings in the floodplain. Most communities with a flood problem have joined the NFIP and are in full compliance with their regulatory obligations.

One way to assure good administration and enforcement is to have Certified Floodplain Managers on staff. The Association of State Floodplain Managers administers the national Certified Floodplain Manager (CFM®) program.

Minimum National Flood Insurance Program Regulatory Requirements

The NFIP is administered by FEMA. As a condition of making flood insurance available for their residents, communities that participate in the NFIP agree to regulate new construction in the area subject to inundation by the 100-year (base) flood (i.e., 1% annual chance flood). The floodplain subject to these requirements is shown as an A or V Zone on the Digital Flood Insurance Rate Map (FIRM).

Under the NFIP, there are five major floodplain regulatory requirements. Additional floodplain regulatory requirements may be set by state and local laws. As referenced above, the State of California has developed a model ordinance for local agencies to use/adopt that are integrated with the I-Codes, specifically the flood resistant design and construction sections within the 2021 International Building Code, Residential Code, and other I-Codes and ASCE 24-14. The model California ordinance meets and exceeds the minimum requirements of the NFIP.

All development in the 1% annual chance floodplain must have a permit from the community. The NFIP regulations define "development" as any manmade change to improved or unimproved real estate,

including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations or storage of equipment or materials.

12. Development along a river or other channel cannot obstruct flows so as to cause an increase in flooding on other properties. An analysis must be conducted to demonstrate that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.
13. New buildings may be built in the floodplain, but they must be protected from damage from the base flood. In riverine floodplains, the lowest floor of residential buildings must be elevated to be at or above the base flood elevation (BFE). Nonresidential buildings must be either elevated or floodproofed. Note: the new California model ordinance replaces Occupancy/Risk Categories with Flood Design Classes for the purpose of establishing elevations of lowest floors, flood-resistant materials equipment and floodproofing.
14. Under the NFIP, a "substantially improved" building is treated as a new building. The NFIP regulations define "substantial improvement" as any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50% of the market value of the structure before the start of construction of the improvement. This requirement also applies to buildings that are substantially damaged.
15. Communities are encouraged to adopt local ordinances that are more comprehensive or provide more protection than the federal criteria. The NFIP's Community Rating System provides insurance premium credits to recognize the additional flood protection benefit of higher regulatory standards.

Local Implementation: Cities of Fremont, Newark, and Union City

The Cities of Fremont, Newark and Union City have adopted the 2022 California Building Code based on the 2021 International Building Code. The City of Fremont has a Floodplain Damage Prevention Ordinance (2023) that exceeds minimum NFIP standards and includes some higher regulatory standards, and is consistent with the flood resistant design and construction sections within the 2021 International Building Code, Residential Code, and other I-Codes and ASCE 24-14. The Cities of Newark and Union City have also adopted the 2022 California Building Code based on the 2021 International Building Code. However, the City of Newark's local Flood Ordinance was adopted in 2009 and has not been updated to meet the requirements of the 2022 California Building Code and the new California Model Flood Ordinance. Likewise, the City of Union City's local Flood Ordinance was adopted in 2011 and has not been specifically updated to meet the requirements of the 2022 California Building Code and the new California Model Flood Ordinance.

Just as important as having code standards is the enforcement of the code. Adequate inspections are needed during the course of construction to ensure that the builder understands the requirements and is following them. Making sure a structure is properly elevated and anchored requires site inspections at each step. The Cities of Fremont, Newark, and Union City indicate that their Floodplain Management Ordinances are adequately enforced.

Reduce Future Flood Losses

Future flood losses should be reduced by enforcement of current floodplain regulations:

City of Fremont. For new residential and non-residential construction or substantial improvements, Fremont requires that either the lowest finished floor be elevated at least 1 foot above the base flood elevation or that below the base flood level the structure is flood-proofed and watertight.

City of Newark. For new residential construction or substantial improvements of any structure, Newark requires that either the lowest floor, including basement, be elevated to or above the base flood elevation. Nonresidential construction shall either be elevated in conformance with subdivisions (C)(1) or (C)(2) of this section or together with attendant utility and sanitary facilities: a. be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water; b. have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and c. be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the building official. New construction and substantial improvement of any structure in Zone AH or AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM, or at least two feet if no depth number is specified. Nonresidential structures may meet the standards in paragraph c of this subdivision as described above.

City of Union City. For new residential construction or substantial improvements of any structure, Union City requires that either the lowest floor, including basement, be elevated to or above the base flood elevation. Nonresidential construction shall either be elevated in conformance with subdivisions (C)(1) or (C)(2) of this section or together with attendant utility and sanitary facilities: a. be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water; b. have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and c. be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the building official. New construction and substantial improvement of any structure in Zone AH or AO shall have the lowest floor, including basement, elevated above the highest adjacent grade at least as high as the depth number specified in feet on the FIRM, or at least two feet if no depth number is specified. Nonresidential structures may meet the standards in paragraph c of this subdivision as described above.

Enacting and enforcing the current standards and/or adopting higher regulatory standards reduces future flood losses by regulating development within flood hazard areas.

Current Standards

As described above, the Cities of Fremont, Newark and Union City have Floodplain Management Ordinances that meet the NFIP's minimum floodplain regulatory requirements. With the adoption of Fremont's new 2023 Flood Damage Prevention Ordinance, NFIP standards are exceeded in some areas including establishing additional freeboard, as detailed below. The flood ordinances for the three cities are designed to:

- To protect human life and health;
- To minimize expenditure of public money for costly flood control projects;
- To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- To minimize prolonged business interruptions;

- To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;
- To help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future flood blight areas;
- To ensure that potential buyers are notified that property is in an area of special flood hazard; and
- To ensure that those who occupy the areas of special flood hazard assume responsibility for their actions.

The flood ordinances for the three cities include methods and provisions for:

- Restricting or prohibiting development which are dangerous to health, safety, and property due to flood hazards, or which result in damaging increase in flood heights or velocities;
- Requiring that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- Controlling the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;
- Controlling fill, grading, dredging, and other development which may increase flood damage; and
- Preventing or regulating the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas.

In addition, all new construction or substantial improvements shall be:

- Designed or modified and adequately anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy
- Constructed in ways that minimize flood damage
- Constructed with materials resistant to flood damage
- Constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities designed or located so as to prevent water from entering or accumulating within components during flooding
- Require within Zones AH or AO, adequate drainage paths around structures on slopes to guide floodwaters around and away from proposed structures.

The Cities of Fremont, Newark, and Union City have regulations that exceed minimum NFIP standards. This includes:

- Floodways are delineated and certain requirements apply to construction within these floodways so as to not result in any increase in flood levels during the occurrence of the base flood discharge.

The City of Fremont has additional requirements that exceed minimum NFIP standards. This includes:

- Requiring new construction and substantial improvements to have the lowest flood, including basement, elevated a minimum of 1 foot above the base flood elevation.

While none of the floodplain managers in the Cities of Fremont, Newark, or Union City are currently Certified Floodplain Managers (CFMs), they are all working towards a certification.

Manufactured Homes

Manufactured or mobile homes are usually not regulated by local building codes. They are built in a factory in another state and are shipped to a site. They do have to meet construction standards set by the U.S. Department of Housing and Urban Development. All mobile homes constructed after 1976 must comply with HUD's National Manufactured Home Construction and Safety Standards. These standards apply uniformly across the country and it is illegal for a local unit of government to require additional construction requirements. Local jurisdictions may regulate the location of these structures and their on-site installation.

Manufactured homes: The NFIP allows communities to exempt mobile homes in existing mobile home parks from some of the flood protection requirements. The CRS provides up to 50 points if the community does not use this exemption.

Local Implementation

The Floodplain Ordinances for the Cities of Fremont, Newark, and Union City all include specific requirements for the placement, installation, elevation, and anchoring of manufactured homes. However, the ordinances for all three cities currently exempt existing manufactured homes and only apply to new and replacement manufactured homes and additions and/or substantial improvements. Thus, none of the Cities benefit from this element.

CRS Credit

Building Codes: The CRS encourages strong building codes. It provides credit in two ways: points are awarded based on the community's BCEGS classification and points are awarded for adopting the International Code series. The CRS also has a prerequisite for a community to attain a Class 6 or better within the CRS program, the community must have a BCEGS class of 5/5 or better. To attain a Class 4 or better in the CRS program, the community must have a BCEGS class of 4/4 or better.

The Cities of Fremont, Newark, and Union City have all adopted the 2022 California Building Code which includes the 2021 International Code series with State enhancements.

The National Flood Insurance Program‘s (NFIP) Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the Community Rating System in the NFIP.

- The CRS recognizes 18 creditable activities, organized under four categories numbered 300 through 600:
  - ✓ Public Information
  - ✓ Mapping and Regulations
  - ✓ Flood Damage Reduction
  - ✓ Flood Preparedness
- The City of Fremont participates in the CRS program and is currently a CRS Class 7.
- By implementing these floodplain management activities, the residents of the City of Fremont qualify for flood insurance premium rate reductions. When communities go beyond the minimum standards for floodplain management, the CRS can provide discounts up to 45% off flood insurance premiums. A CRS Class 7 provides for a 15% premium discount on flood insurance premiums.

The Cities of Newark and Union City do not currently participate in the CRS program but are evaluating participation in the future. Thus, the residents within the City do not currently benefit from discounts to flood insurance premiums.

Floodplain Management – Higher Regulatory Standards: There are many higher regulatory standards that warrant CRS credit as previously discussed. These standards include:

- Delineating a floodway, the area of higher hazard near the channel. This would allow development outside the floodway (called the "floodplain fringe") without engineering studies to determine their impact on others.
- Requiring all new construction to be elevated one or two feet above the base flood elevation to provide an extra level of protection from waves and higher floods. This extra protection is reflected in a distinct reduction in flood insurance rates.
- Having all developers (not just the larger ones) provide flood data where none are available.
- Specifications to protect foundations from erosion, scour and settling.
- Prohibiting critical facilities from all or parts of the floodplain.
- Prohibiting hazardous materials.
- Requiring buffers adjacent to streams or natural areas.
- Restrictions on use of enclosures below elevated buildings.
- Flood storage lost due to filling and construction must be compensated for by removal of an equal volume of storage.
- The CRS also provides credit for having trained staff and a higher credit if the staff members are Certified Floodplain Managers.

It should be noted that one of the prerequisites for participation in the CRS is that the community be in full compliance with the minimum requirements of the NFIP. A community with a number of "potential violations" risks being removed from the CRS entirely.

Comprehensive Land Use Planning, Zoning, and Open Space Preservation

Building codes provide guidance on how to build in hazardous areas. Planning and zoning activities direct development away from these areas, particularly floodplains and wetlands. They do this by designating land uses that are compatible with the natural conditions of land that is prone to flooding, such as open space or recreation. Planning and zoning activities can also provide benefits by simply allowing developers more flexibility in arranging improvements on a parcel of land through the planned development approach.

General and Comprehensive Plans

These plans are the primary tools used by communities to address future development. They can reduce future flood-related damages by indicating open space or low density development within floodplains and other hazardous areas. Unfortunately, natural hazards are not always emphasized or considered in the specific land use recommendations.

Generally, a plan has limited authority. It reflects what the community would like to see happen. Its utility is that it guides other local measures, such as capital improvement programs, zoning ordinances, and subdivision regulations.

Capital Improvement Plans

A capital improvement plan can guide a community's major public expenditures for a 5- to 20-year period. Capital expenditures may include acquisition of open space within the hazardous areas, extension of public services into hazardous areas, or retrofitting existing public structures to withstand a hazard.

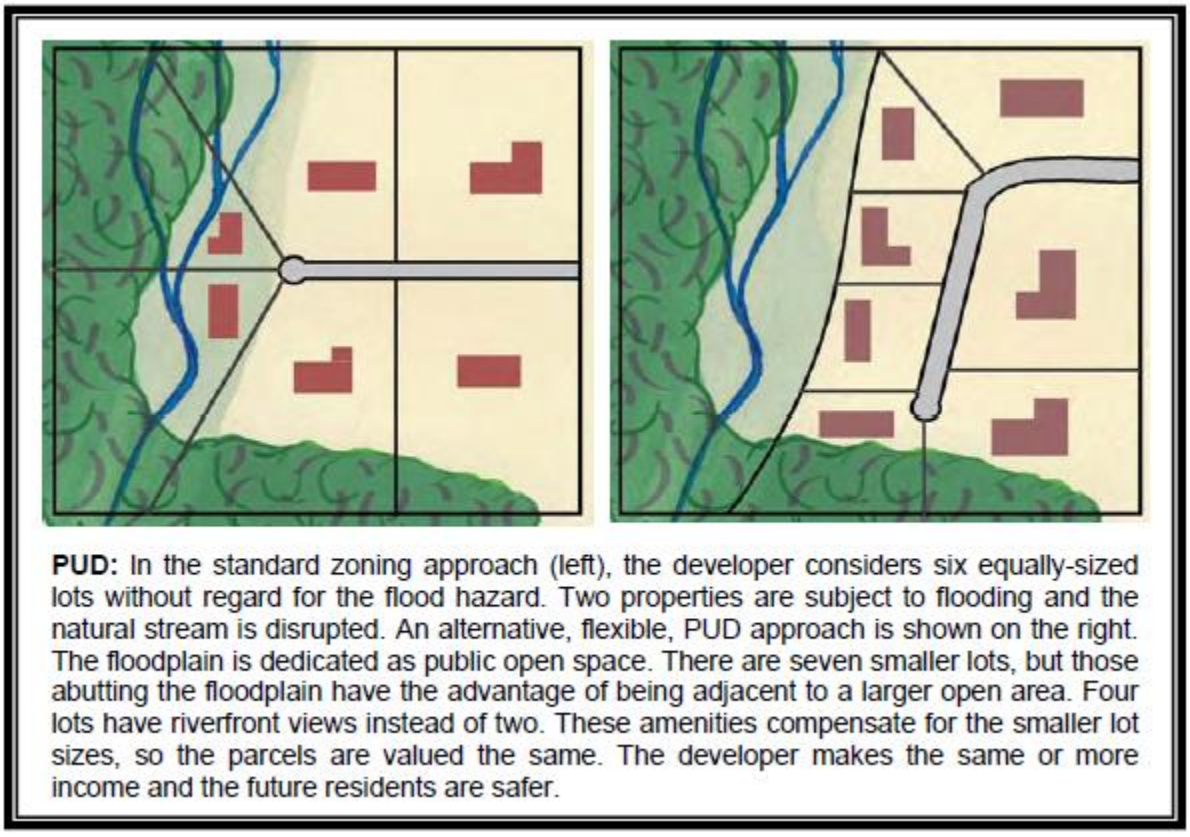
Zoning

A zoning ordinance regulates development by dividing a community into zones or districts and setting development criteria for each of those zones or districts. Zoning codes are considered the primary tool to implement a general/comprehensive plan's guidelines for how land should be developed.

Zoning ordinances can limit development in hazardous areas, such as reserving floodplain zones for agricultural uses. Often, developers will produce a standard grid layout. The ordinance and the community can allow flexibility in lot sizes and location so developers can avoid hazardous areas.

One way to encourage such flexibility is to use the planned unit development (PUD) approach or cluster development. The PUD and cluster approaches allow the developer to easily incorporate flood hazard mitigation measures into the project. Open space or floodplain preservation can be facilitated as site design standards and land use densities can be adjusted to fit the property's specific characteristics, as shown in Figure C-2.

Figure C-2 Zoning for Development in the Floodzone



PUD: In the standard zoning approach (left), the developer considers six equally-sized lots without regard for the flood hazard. Two properties are subject to flooding and the natural stream is disrupted. An alternative, flexible, PUD approach is shown on the right. The floodplain is dedicated as public open space. There are seven smaller lots, but those abutting the floodplain have the advantage of being adjacent to a larger open area. Four lots have riverfront views instead of two. These amenities compensate for the smaller lot sizes, so the parcels are valued the same. The developer makes the same or more income and the future residents are safer.

Open Space Preservation

Keeping the floodplain and other hazardous areas open and free from development is the best approach to preventing damage to new developments. Open space can be maintained in agricultural use or can serve as parks, greenway corridors and golf courses.

Comprehensive and capital improvement plans should identify areas to be preserved by acquisition and other means, such as purchasing an easement. With an easement, the owner is free to develop and use private property, but property taxes are reduced or a payment is made to the owner if the owner agrees to not build on the part set aside in the easement.

Although there are some federal programs that can help acquire or reserve open lands, open space lands and easements do not always have to be purchased. Developers can be encouraged to dedicate park land and required to dedicate easements for drainage and maintenance purposes. These are usually linear areas along property lines or channels. Maintenance easements also can be donated by streamside property owners in return for a community maintenance program.

Local Implementation

General Plan: City of Fremont's current General Plan was last adopted in 2011, with an update to the Housing Element occurring in 2022. The City of Newark's General Plan is dated 2013, with updates to the Housing, Safety, and Environmental Justice Elements in 2023. The City of Union City's General Plan is dated 2019, with updates to the Housing and Safety Elements in 2023.

Zoning and Open Space Preservation: The Cities' General Plans in coordination with the local Codes, protects current open space. As General Plans are updated, zoning codes, including provisions for open space and other land preservation and development constraints are added.

Reduce Future Flood Losses

Enacting the General Plans and the comprehensive zoning and future land uses contained in the Cities' General Plans will help to reduce future flood losses by managing development in hazardous areas including identified floodplains.

Current Standards

The City of Fremont has a Planning and Zoning ordinance developed to ensure that buildings and structures constructed in the City comply with the provisions of the ordinance pertaining to the erection, construction, reconstruction, moving, conversion, alteration or addition to any building or structure. The purpose of this title is to implement the city's general plan and to protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare. This title implements the goals and policies of the City of Fremont General Plan by regulating the use of land and structures within the city.

Working in conjunction with the City's zoning ordinance, the City has established an open space district to permit limited but reasonable use of open lands while protecting the public health, safety and welfare from the dangers of seismic hazards and unstable soils; preserve the topography of the city that shapes it and gives it its identity; allow land to be used for agricultural production in its natural or as near natural state as possible; coordinate with and carry out regional, county, and city open space plans; and where permitted, encourage the clustering of dwelling units in order to preserve and enhance the remainder of open space lands as a limited and valuable resource. This includes provisions related to City Parks, General Open Space, the Hillside, Hill Face, and Hill Open Space, and the Resource Conservation and Public Open Space. These zoning ordinance and open space designations help reduce hazard impacts and are adequately administered and enforced.

The City of Newark also has a Zoning Ordinance designed to implement the City's general plan and to protect and promote the public health, safety, peace, comfort, convenience, prosperity and general welfare of the City. This includes establishing land use and development standards specific to each land use designation as identified in the code for the orderly growth and development of the city, and guide and to control the use of land to provide a safe, harmonious, attractive, and sustainable community. These zoning ordinance and open space designations help reduce hazard impacts and are adequately administered and enforced.

The City of Union City also has a Zoning Ordinance designed to implement the City's general plan and to promote and protect the public health, safety, morals, comfort, convenience and the general welfare of the people. This includes dividing the City into zones and districts restricting and regulating therein the location, construction, reconstruction, alteration and use of buildings, structures and land for residence, business, industrial and other specified uses. The City's Zoning Ordinance works in conjunction with the City's Open Space Zoning District designation. The purpose and intent of this district is to:

- Provide adequate recreation and open space lands for the needs of the population, present and future;
- Preserve and protect open space lands as a limited and valuable resource;
- Discourage premature and unnecessary conversion of open space land to urban areas in order to discourage noncontiguous patterns of development which unnecessarily increase the cost of community services to community residents;
- Prevent incompatible development of areas which should be preserved or regulated for scenic, historic, or conservation purposes;
- Insure the retention of certain lands in their natural or near natural state, so as to protect the public health, safety, and welfare of the community from natural disasters such as fire, flood, erosion, seismic activity, etc.

Provisions of this district also provide for the reasonable use of open space land while at the same time preserving and protecting its inherent open space character. These zoning ordinance and open space designations help reduce hazard impacts and are adequately administered and enforced.

CRS Credit

The CRS provides flood insurance discounts to those communities that implement various floodplain management activities that meet certain criteria. Comparing local activities to those national criteria helps determine if local activities should be improved.

Credits are provided for regulations that encourage developers to preserve floodplains or other hazardous areas from development. There is no credit for a plan, only for the enforceable regulations that are adopted pursuant to a plan. Credits are also provided for setting aside floodplains for low density zoning, such as five acre lots or conservation.

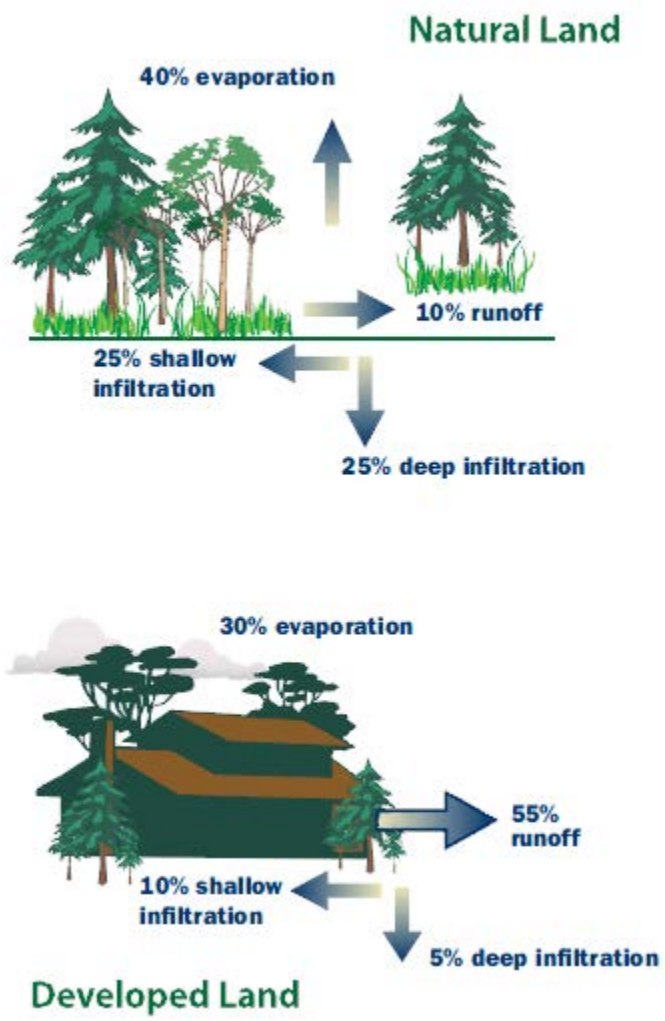
Preserving flood prone areas as open space is one of the highest priorities of the Community Rating System. Up to 1,450 points can be given, based on how much of the floodplain is in community public undeveloped properties, parks, wildlife refuges, golf courses, or other uses that can be depended on to stay open (Activity 420 - Open Space Preservation).

Stormwater Management and Subdivision Ordinance

Development in floodplains is development in harm's way. New construction in the floodplain increases the amount of development exposed to damage and can aggravate flooding on neighboring properties.

Development outside a floodplain can also contribute to flooding problems. Stormwater runoff is increased when natural ground cover is replaced by urban development (see Figure C-3). Development in the watershed that drains to a river can aggravate downstream flooding, overload the community's drainage system, cause erosion, and impair water quality.

Figure C-3 Runoff and Infiltration of Natural and Developed Land



There are three ways to prevent flooding problems caused by stormwater runoff:

- Regulating development in the floodplain to ensure that it will be protected from flooding and that it won't divert floodwaters onto other properties, and
- Regulating all development to ensure that the post-development peak runoff will not be greater than it was under pre-development conditions.
- Set construction standards so buildings are protected from shallow water.

Most communities participate in the NFIP, which sets minimum requirements for regulating development in the floodplain. All new buildings must be protected from the base or 100-year flood (or 1% annual chance flood) and no development can cause an increase in flood heights or velocities.

Stormwater runoff regulations require developers to build retention or detention basins to minimize the increases in the runoff rate caused by impervious surfaces and new drainage systems. Generally, each

development must not let stormwater leave at a rate higher than what existed under pre-development conditions.

Standards for drainage requirements are typical in subdivision regulations. Standards for storm sewers, ditches, culverts, etc., are best set when an area is laid out and developed. Traditionally, the national standard is to require that the local drainage system carry the 10-year storm. Recently, communities are finding that older estimates of the 10-year storm understated the true hazard, so they are addressing larger storms.

One problem with requiring the drainage system to carry water away is that runoff increases with urban development. The runoff equivalent of a 10-year storm occurs more frequently, and from smaller storms. The problem is just sent downstream onto someone else's property.

Accordingly, modern subdivision regulations require new developments to ensure that the post-development peak runoff will not be greater than it was under pre-development conditions. This is usually done by constructing retention or detention basins to hold the runoff for a few hours or days, until flows in the system have subsided and the downstream channels can accept the water without flooding.

If the storm sewers or roadside ditches cannot handle a heavy rain, the standard subdivision design uses the streets to carry excess runoff. If the flows exceed the streets' capacity, adjacent properties will flood. Therefore, the third approach to protecting from stormwater flooding is to make sure new buildings are elevated one or two feet above the street or above adjacent grade.

Local Implementation

Reduce Future Flood Losses

Current practices and tracking mechanisms are seeking to reduce flood risks. Future flood control and stormwater improvements in Tri-City Planning Area will help reduce localized flood risks by improving flood control mechanisms and drainage. In order to reduce future flood losses, the Cities may consider revisiting their stormwater management ordinances.

Current Standards

The cities of Fremont, Newark, and Union City have stormwater management ordinances and programs.

The City of Fremont has a a stormwater management program and ordinance that creates a streamlined process for review and approval of stormwater management measures for development projects. Related documents include a Stormwater Control Plan Guidance Manuel and Submittal Packets. The City also operates under the Municipal Regional National Pollutant Discharge Elimination System Stormwater Permit (also known as the MRP), issued by the San Francisco Regional Water Quality Control Board, mandates stormwater pollution prevention activities. The MRP requires 70+ municipalities in the Bay Area, including the City of Fremont, to place conditions on development projects to incorporate site design measures, source controls, treatment measures, and on larger projects, flow duration controls (FDCs).

The City of Newark's Stormwater Program activities are managed in accordance with National Pollution Discharge Elimination System (NPDES) Permit requirements enforced by the San Francisco Regional Water Quality Control Board. Activities include:

- Illicit Discharge Incident Response/Enforcement
- Street Sweeping
- Storm Drain Maintenance
- Public Outreach Events
- Education and Information
- Stormwater Controls for Business and Development
- Participation in the Alameda Countywide Clean Water Program

The City of Newark also has a Green Stormwater Infrastructure (GSI) Plan The purpose of the GSI Plan is to guide the identification, implementation, tracking, and reporting of green infrastructure projects within the City of Newark in accordance with the Municipal Regional Stormwater Permit (MRP), Order No. R2-2015-0049, adopted by the San Francisco Bay Regional Water Quality Control Board on November 15, 2015. "Green stormwater infrastructure" or "green infrastructure" in this context refers to sustainable systems of constructed softscape features that slow runoff by dispersing it to vegetated areas. Additional benefits to water resource management of GSI include promoting infiltration and evapotranspiration, utilizing bioretention and other low impact development practices to harvest and clean stormwater runoff.

The City of Union City's Environmental Programs Division has an industrial and illicit-discharge inspection program to protect storm drains and waterways from pollution. The City also reviews storm water pollution prevention plans, conducts storm water event inspections of construction sites, and investigates complaints about illicit discharges into public storm drain system. In addition, the Public Works Department is responsible for implementing the California Regional Water District Quality Control Board's San Francisco Bay Region Municipal Regional Stormwater Permit (called the MRP). Public Works make sure that the permits requirements are adhered to and enforced. All new development projects must begin by completing the Impervious Surface Form and the Checklist for Development Projects

Subdivision Regulations

In addition to controlling stormwater runoff as described above, subdivision regulations govern how land will be subdivided and they set construction standards. These standards generally address roads, sidewalks, utilities, storm sewers, and drainage ways. They can include the following flood protection standards:

- Requiring that the final plat show all hazardous areas
- Requiring that each lot be provided with a building site above the flood level
- Requiring that all roadways be no more than one foot below the flood elevation

Local Implementation

The cities of Fremont, Newark and Union City all have subdivision ordinances that regulate the design and improvement

The City of Fremont's subdivision standards work in conjunction with other building and development standards to regulate and control the division of land within the city of Fremont, and to supplement the

provisions of the Map Act concerning the design, improvement and survey data of subdivisions, the form and content of all maps provided for by the Map Act, and the procedure to be followed in securing the official approval of the commission, the city engineer, the planning manager, and council regarding such maps. To accomplish this purpose, the regulations are determined to be necessary for the preservation of the public health, safety, and general welfare; to promote orderly growth and development; to promote conservation, protection, and proper use of land; and to ensure provision for adequate circulation, utilities, and services. The City of Fremont's subdivision standards specifically include provisions to address flood hazards.

The City of Newark's subdivision ordinance is implemented to promote the public health, safety and general welfare; to promote orderly growth and development within the city; to coordinate lot design, street patterns, rights-of-way, traffic circulation, utilities and public facilities with the general plan and any specific plans; to assure that areas dedicated for public purposes will be properly improved initially so as not to be a future burden upon the community; to preserve natural resources and prevent environmental damage; to maintain suitable standards to ensure adequate, safe building sites; and to prevent hazard to life and property.

The City of Union City's subdivision ordinance is implemented to promote and protect the public health, safety, morale, comfort, convenience, and general welfare of the people. It also includes standards to ensure that community facilities will be provided in accordance with the General Plan including police and fire protection, adequate provisions of water supply, sanitary and storm sewers and schools, parks, and recreation areas.

CRS Credit

CRS credit is provided for both higher regulatory standards in the floodplain and stormwater management standards for new developments. Credit is based on how those standards exceed the minimum NFIP requirements.

Conclusions and Recommendations

- The City of Fremont has a floodplain development ordinance that exceeds minimum national standards and will be helpful in preventing flood problems from increasing. The cities of Newark and Union City through adoption of the 2022 Building Code has standards that exceed the minimum standards of the NFIP, but still need to update their local amendments.
- With ongoing improvements to the regions' flood control facilities and any resulting changes in the FEMA DFIRMs, the floodplain regulations for the County and City should be revisited and revised accordingly.
- The cities should continue to implement floodplain management activities to align with the most current CRS Coordinator's Manual. The cities should evaluate their floodplain management ordinances for incorporating additional higher standards.
- The cities should review their zoning and subdivision ordinances for floodplain management and other hazard specific enhancements.
- The cities should continue to enforce stormwater management best management practices to control post development site runoff. Consideration of a unified countywide stormwater ordinance will provide consistent regulations between all communities within the Tri-City planning area.

- Standards in subdivision regulations for public facilities should account for the hazards present at the site. New building sites, streets, and water systems should facilitate access and use by fire and emergency equipment.

C.3.2. Property Protection Measures

Property protection measures are used to modify buildings or property subject to damage. Property protection measures fall under three approaches:

- Modify the site to keep the hazard from reaching the building,
- Modify the building so it can withstand the impacts of the hazard, and
- Insure the property to provide financial relief after the damage occurs.

Property protection measures are normally implemented by the property owner, although in many cases technical and financial assistance can be provided by a government agency.

Keeping the Hazard Away

Generally, natural hazards do not damage vacant areas. As noted earlier, the major impact of hazards is to people and improved property. In some cases, properties can be modified so the hazard does not reach the damage-prone improvements. For example, a berm can be built to prevent floodwaters from reaching a house.

Flooding

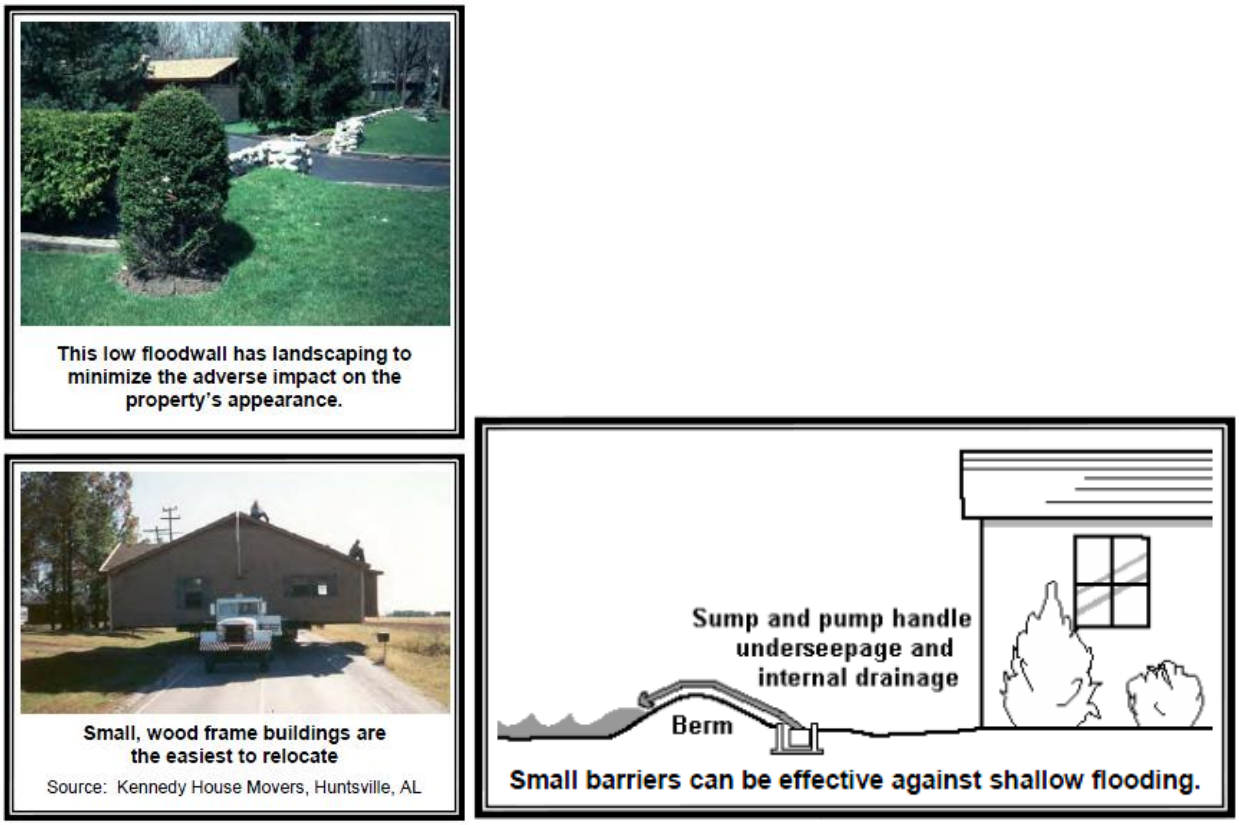
There are five common methods to keep a flood from reaching and damaging a building:

- Erect a barrier between the building and the source of the flooding.
- Move the building out of the floodprone area.
- Elevate the building above the flood level.
- Demolish the building.
- Replace the building with a new one that is elevated above the flood level.

Barriers

A flood protection barrier can be built of dirt or soil (a "berm") or concrete or steel (a "floodwall"). Careful design is needed so as not to create flooding or drainage problems on neighboring properties. Depending on how porous the ground is, if floodwaters will stay up for more than an hour or two, the design needs to account for leaks, seepage of water underneath, and rainwater that will fall inside the perimeter. This is usually done with a sump or drain to collect the internal groundwater and surface water and a pump and pipe to pump the internal drainage over the barrier.

Figure C-4 Types of Barriers



Barriers can only be built so high. They can be overtopped by a flood higher than expected. Barriers made of earth are susceptible to erosion from rain and floodwaters if not properly sloped, covered with grass, and properly maintained. A berm can also settle over time, lowering its protection level. A floodwall can crack, weaken, and lose its watertight seal. Therefore, barriers need careful design and maintenance (and insurance on the building, in case of failure).

Relocation

Moving a building to higher ground is the surest and safest way to protect it from flooding. While almost any building can be moved, the cost increases for heavier structures, such as those with exterior brick and stone walls, and for large or irregularly shaped buildings.

In areas subject to flash flooding, deep waters, or other high hazard, relocation is often the only safe approach. Relocation is also preferred for large lots that include buildable areas outside the floodplain or where the owner has a new flood-free lot (or portion of the existing lot) available.

Building Elevation

Raising a building above the flood level can be almost as effective as moving it out of the floodplain. Water flows under the building, causing little or no damage to the structure or its contents. Raising a building

above the flood level is cheaper than moving it and can be less disruptive to a neighborhood. Elevation has proven to be an acceptable and reasonable means of complying with floodplain regulations that require new, substantially improved, and substantially damaged buildings to be elevated above the base flood elevation.

One concern with elevation is that it may expose the structure to greater impacts from other hazards such as wind and groundshaking. If not braced and anchored properly, an elevated building may have less resistance to the shaking of an earthquake and the pressures of high winds.

Demolition

Some buildings, especially heavily damaged or repetitively flooded ones, are not worth the expense to protect them from future damages. It is cheaper to demolish them and either replace them with new, flood protected structures ("pilot reconstruction"), or relocate the occupants to a safer site. Demolition is also appropriate for buildings that are difficult to move - such as larger, slab foundation or masonry structures - and for dilapidated structures that are not worth protecting. Generally, demolition projects are undertaken by a government agency, so the cost is not borne by the property owner, and the land is converted to public open space use, like a park.

Figure C-5 Demolition of Flooded Home



Demolishing a repetitively flooded home

One problem that sometimes results from an acquisition and demolition project is a "checkerboard" pattern in which nonadjacent properties are acquired. This can occur when some owners, especially those who have and prefer a waterfront location, are reluctant to leave their homes. Creating such an acquisition pattern in a community simply adds to the maintenance costs that taxpayers must support.

Pilot Reconstruction

If a building is not in good shape, elevating it may not be worthwhile or it may even be dangerous. An alternative is to demolish the structure and build a new one on the site that meets or exceeds all flood and wind protection codes. This was formerly known as "demo/rebuild." FEMA funding programs refer to this approach as "pilot reconstruction." It is still a pilot program, and not a regularly funded option.

Certain rules must be followed to qualify for federal funds for pilot reconstruction:

- Pilot reconstruction is only possible after it has been shown that acquisition or elevation are not feasible, based on the program's criteria.
- Funds are only available to people who owned the property at the time of the event for which funding is authorized.
- It must be demonstrated that the benefits exceed the costs.
- The new building must be elevated to the advisory base flood elevation.
- The new building must not exceed more than 10% of the old building's square footage.
- The new building must meet all flood and wind protection codes.
- There must be a deed restriction that states the owner will buy and keep a flood insurance policy.
- The maximum federal grant is 75% of the cost, up to $150,000. FEMA is developing a detailed list of eligible costs to ensure that disaster funds are not used to upgrade homes.

Local Implementation

Within the Tri-City planning area, it is unknown the extent to which acquisition and elevation projects have been implemented. The cities should consider these types of projects for the protection of floodprone structures in the future.

CRS Credit

The CRS provides the most credit points for acquisition and relocation, because this measure permanently removes insurable buildings from the floodplain. The CRS credits barriers and elevating existing buildings (Activity 530 - Flood Protection). Elevating a building above the flood level will also reduce the flood insurance premiums on that individual building. Because barriers are less secure than elevation, not as many points are provided. Higher scores are possible, but they are based on the number of buildings removed compared to the number remaining in the floodplain.

Retrofitting

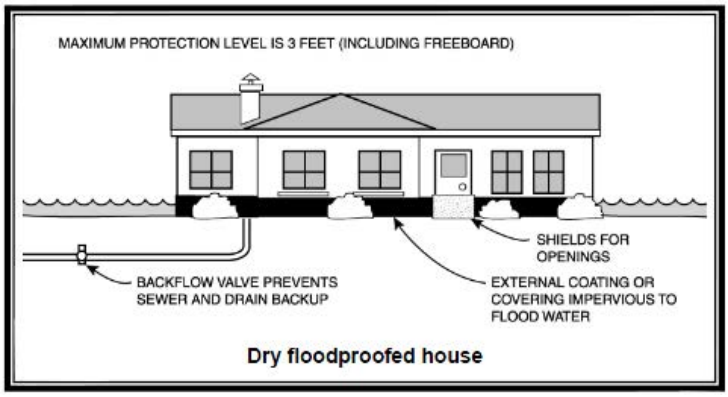
An alternative to keeping the hazard away from a building is to modify or retrofit the site or building to minimize or prevent damage. There are a variety of techniques to do this, as described below.

Dry Floodproofing

Dry floodproofing means making all areas below the flood protection level watertight. Walls are coated with waterproofing compounds or plastic sheeting. Openings, such as doors, windows and vents, are closed, either permanently, with removable shields, or with sandbags. Dry floodproofing of new and existing nonresidential buildings in the regulatory floodplain is permitted under state, FEMA and local regulations.

Dry floodproofing of existing residential buildings in the floodplain is also permitted as long as the building is not substantially damaged or being substantially improved. Owners of buildings located outside the regulatory floodplain can always use dry floodproofing techniques.

Figure C-6 Dry Floodproofing



Dry floodproofing is only effective for shallow flooding, such as repetitive drainage problems. It does not protect from the deep flooding along lakes and larger rivers caused by hurricanes or other storms.

Wet Floodproofing

The alternative to dry floodproofing is wet floodproofing: water is let in and everything that could be damaged by a flood is removed or elevated above the flood level. Structural components below the flood level are replaced with materials that are not subject to water damage. For example, concrete block walls are used instead of wooden studs and gypsum wallboard. The furnace, water heater and laundry facilities are permanently relocated to a higher floor. Where the flooding is not deep, these appliances can be raised on blocks or platforms.

Local Implementation

Area residents have utilized both dry and wet floodproofing techniques for construction of homes in floodprone areas. Floodproofing requirements for new or substantially improved structures are addressed in the communities' Floodplain Management Ordinances.

CRS Credit

Credit for dry and wet floodproofing and sewer backup protection is provided under Activity 530 - Retrofitting. Because these property protection measures are less secure than barriers and elevation, not as many points are provided.

Insurance

Technically, insurance does not mitigate damage caused by a natural hazard. However, it does help the owner repair, rebuild, and hopefully afford to incorporate some of the other property protection measures

in the process. Insurance offers the advantage of protecting the property, as long as the policy is in force, without requiring human intervention for the measure to work.

Private Property

Although most homeowner's insurance policies do not cover a property for flood damage, an owner can insure a building for damage by surface flooding through the NFIP. Flood insurance coverage is provided for buildings and their contents damaged by a "general condition of surface flooding" in the area.

Figure C-7 Flood Insurance Coverage

Table 5-1 Example Flood Insurance Premiums	
Building Exposure	**Premium**
In the Special Flood Hazard Area (AE Zone)	
Pre-FIRM ("subsidized") rate	$1,689
Post-FIRM (actuarial) rates	
2 feet above the base flood elevation	$440
1 foot above the base flood elevation	$643
At the base flood elevation	$1,167
1 foot below the base flood elevation	$4,379
Outside the Special Flood Hazard Area	$1,029
Premiums are for $150,000 in building coverage and $75,000 in contents coverage for a one story house with no basement and a $500 deductible, using the October 2008 *Flood Insurance Manual*. Premiums include the 5% Community Rating System discount in unincorporated St. Tammany Parish. Premiums are higher in the municipalities, which are not in the CRS.	

Most people purchase flood insurance because it is required by the bank when they get a mortgage or home improvement loan. Usually, these policies just cover the building's structure and not the contents. Contents coverage can be purchased separately. Renters can buy contents coverage, even if the owner does not buy structural coverage on the building. Most people don't realize that there is a 30-day waiting period to purchase a flood insurance policy and there are limits on coverage.

Public Property

Governments can purchase commercial insurance policies. Larger local governments often self-insure and absorb the cost of damage to one facility, but if many properties are exposed to damage, self-insurance can drain the government's budget. Communities cannot expect federal disaster assistance to make up the difference after a flood.

Under Section 406(d) of the Stafford Act:

> *"If an eligible insurable facility damaged by flooding is located in a [mapped floodplain] … and the facility is not covered (or is underinsured) by flood insurance on the date of such flooding, FEMA is required to reduce Federal disaster assistance by the maximum amount of insurance proceeds that would have been received had the buildings and contents been fully covered under a National Flood Insurance Program (NFIP) standard*

flood insurance policy. [Generally, the maximum amount of proceeds for a non-residential property is $500,000.]

[Communities] Need to:

- Identify all insurable facilities, and the type and amount of coverage (including deductibles and policy limits) for each. The anticipated insurance proceeds will be deducted from the total eligible damages to the facilities.
- Identify all facilities that have previously received Federal disaster assistance for which insurance was required. Determine if insurance has been maintained. A failure to maintain the required insurance for the hazard that caused the disaster will render ineligible for Public Assistance funding…
- [Communities] must obtain and maintain insurance to cover [their] facility - buildings, equipment, contents and vehicles - for the hazard that caused the damage in order to receive Public Assistance funding. Such coverage must, at a minimum, be in the amount of the eligible project costs. FEMA will not provide assistance for that facility in future disasters if the requirement to purchase insurance is not met. - FEMA Response and Recovery Directorate Policy No. 9580.3, August 23, 2000

In other words, the law expects public agencies to be fully insured as a condition of receiving federal disaster assistance.

Local Implementation

Flood insurance is available in the cities of Fremont, Newark and Union City. Information on flood insurance policies and claims are included in the jurisdictional annexes to this LHMP. Flood insurance promotion by the cities is a component of their floodplain management programs.

CRS Credit

There is no credit for purchasing flood insurance, but the CRS does provide credit for local public information programs that explain flood insurance to property owners. The CRS also reduces the premiums for those people who do buy NFIP coverage.

The Government's Role

Property protection measures are usually considered the responsibility of the property owner. However, local governments should be involved in all strategies that can reduce flood losses, especially acquisition and conversion of a site to public open space. There are various roles a municipality can play in encouraging and supporting implementation of these measures.

One of the first duties of a local government is to protect its own facilities. Fire stations, water treatment plants and other critical facilities should be a high priority for retrofitting projects and insurance coverage. Often public agencies discover after the disaster that their "all-hazard" insurance policies do not cover the property for the type of damage incurred. Flood insurance is even more important as a mitigation measure because of certain Stafford Act provisions.

Providing basic information to property owners is the first step in supporting property protection measures. Owners need general information on what can be done. They need to see examples, preferably from nearby.

Communities can help owners by helping to pay for a retrofitting project. Financial assistance can range from full funding of a project to helping residents find money from other programs. Some communities assume responsibility for sewer backups, street flooding, and other problems that arise from an inadequate public sewer or public drainage system. Less expensive community programs include low interest loans, forgivable low interest loans and rebates. A forgivable loan is one that does not need to be repaid if the owner does not sell the house for a specified period, such as five years. These approaches don't fully fund the project, but they cost the community less and they increase the owner's commitment to the flood protection project. Often, small amounts of money act as a catalyst to pique the owner's interest to get a self-protection project moving.

The more common outside funding sources are listed below. Unfortunately, some of these are only available after a disaster, not before, when damage could be prevented.

Pre-disaster funding sources:

- FEMA's Building Resilient Infrastructure and Communities (BRIC) grants
- FEMA's Flood Mitigation Assistance (FMA) grants
- Community Development Block Grants
- Conservation organizations, although generally these organizations prefer to purchase vacant land in natural areas, not properties with buildings on them.

Post-disaster funding sources:

- Insurance claims
- The NFIP's Increased Cost of Compliance. This provision increases a flood insurance claim payment to help pay for a flood protection project required by code as a condition to rebuild the flooded building. It can also be used to help pay the non-federal cost-share of an elevation project.

Post-disaster funding sources, federal disaster declaration needed:

- FEMA's disaster assistance (for public properties). However, after a flood, the amount of assistance will be reduced by the amount of flood insurance that the public agency should be carrying on the property.
- Small Business Administration disaster loans (for non-governmental properties)
- FEMA's Hazard Mitigation Grant Program

Acquisition Agent

The community can be the focal point in an acquisition project. Most funding programs require a local public agency to sponsor the project. The local government could process the funding application, work with the owners, and provide some, or all, of the local share. In some cases, the local government would be the ultimate owner of the property, but in other cases another public agency could assume ownership and the attendant maintenance responsibilities.

Mandates

Mandates are considered a last resort if information and incentives are insufficient to convince a property owner to take protective actions. An example of a retrofitting mandate is the requirement that communities have to disconnect downspouts from the sanitary sewer line.

There is a mandate for improvements or repairs made to a building in the mapped floodplain. If the project equals or exceeds 50% of the value of the original building, it is considered a "substantial improvement." The building must then be elevated or otherwise brought up to current flood protection codes.

Another possible mandate is to require less expensive hazard protection steps as a condition of a building permit. For example, many communities require upgraded electrical service as a condition of a home improvement project. If a person were to apply for a permit for electrical work, the community could require that the service box be moved above the base flood elevation or the installation of a separate ground fault interrupter circuits in the basement.

Local Implementation

As previously described, cities have floodplain ordinances which require flood protection measures be implemented as part of the permit requirements for structures within the special flood hazard areas.

CRS Credit

Except for public information programs, the CRS does not provide credit for efforts to fund, provide incentives, or mandate property protection measures. CRS credits are provided for the actual projects after they are completed. However, to participate in CRS, a community must certify that it has adequate flood insurance on all properties that have been required to be insured. The minimum requirement is to insure those properties in the mapped floodplain that have received federal aid, as specified by the Flood Disaster Protection Act of 1973.

Repetitive Loss Properties and Analysis

Repetitive loss properties deserve special attention because they are more prone to damage by natural hazards than any other properties in the Tri-City planning area. Further, protecting repetitive loss buildings is a priority with FEMA mitigation funding programs.

According to FEMA's NFIP records as of July 2, 2023, the cities of Fremont and Newark do not have any repetitive loss (RL) buildings. In Union City, NFIP data indicates that there are 10 RL and 0 severe repetitive loss (SRL) buildings. These 10 RL properties have 15 RL losses and are located outside of the 1% and 0.2% annual chance flood zone, in the B,C, and X zones.

Conclusions and Recommendations

- There are several ways to protect individual properties from damage by natural hazards. The advantages and disadvantages of each should be examined for each situation.

- Property protection measures can protect some of the most damage-prone buildings in the Tri-City planning area including repetitive loss properties.
- Flood insurance promotion efforts should be enhanced in the three cities.
- Property owners can implement some property protection measures at little cost, especially for sites in areas of low hazards (e.g., shallow flooding, sewer backup, and thunderstorms). For other measures, such as relocation and elevation, the owners may need financial assistance.
- Local government agencies can promote and support property protection measures through several activities, ranging from public information to financial incentives to full funding.
- Government properties, including critical facilities, should be evaluated to determine the extent to which they are protected from flooding.
- Because properties in floodplains are likely to be damaged at some point, efforts should continue to provide information and advice to floodplain property owners. Special attention should be given to repetitive loss and high hazard areas.
- Public education materials can be developed/enhanced to explain property protection measures that can help owners reduce their exposure to damage by floods and the various types of insurance that are available.
- All property protection projects should be voluntary to be most effective. Other than state and federally mandated regulations, local incentives should be positive as much as possible, such as providing financial assistance.
- A FEMA Hazard Mitigation Assistance (HMA) Grant workshop focused on private firms and citizens could be conducted annually to showcase the assistance that FEMA (HMGP, PDM, FMA, RFC and SRL) provides and to encourage public participation.
- A standard checklist could be developed to evaluate a property's exposure to damage from floods. It should include a review of insurance coverage and identify where more information can be found on appropriate property protection measures. The checklist should be provided to each agency participating in this planning process and made available to the public.
- The three cities should evaluate their own properties using the standard checklist. A priority should be placed on determining critical facilities' vulnerability to damage and whether public properties are adequately insured.
- The three cities should protect their own publicly owned facilities with appropriate mitigation measures.

C.3.3. Natural Resource Protection

Resource protection activities are generally aimed at preserving (or in some cases restoring) natural areas. These activities enable the naturally beneficial functions of fields, floodplains, wetlands, and other natural lands to operate more effectively. Natural and beneficial functions of watersheds, floodplains and wetlands include:

- Reduction in runoff from rainwater and snow melt in pervious areas
- Infiltration that absorbs overland flood flow
- Removal and filtering of excess nutrients, pollutants and sediments
- Storage of floodwaters
- Absorption of flood energy and reduction in flood scour
- Water quality improvement
- Groundwater recharge
- Habitat for flora and fauna
- Recreational and aesthetic opportunities

As development occurs, many of the above benefits can be achieved through regulatory steps for protecting natural areas or natural functions. This Appendix C covers the resource protection programs and standards

that can help mitigate the impact of natural hazards, while they improve the overall environment. Seven areas are reviewed:

- Wetland protection
- Erosion and sedimentation control
- River restoration
- Best management practices
- Dumping regulations
- Urban forestry
- Farmland protection

Wetland Protection

Wetlands are often found in floodplains and depressional areas of a watershed. Many wetlands receive and store floodwaters, thus slowing and reducing downstream flows. They also serve as a natural filter, which helps to improve water quality, and they provide habitat for many species of fish, wildlife and plants.

Wetlands that are determined to be part of the waters of the United States are regulated by the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (US EPA) under Section 404 of the Clean Water Act. Before a "404" permit is issued, the plans are reviewed by several agencies, including the Corps and the U.S. Fish and Wildlife Service. Each of these agencies must sign off on individual permits.

There are also nationwide permits that allow small projects that meet certain criteria to proceed without individual permits. Wetlands not included in the Corps' jurisdiction or that are addressed by a nationwide permit may be regulated against by local authorities.

If a permit is issued by the Corps, County, or one of the cities, the impact of the development is typically required to be mitigated. Wetland mitigation can include creation, restoration, enhancement or preservation of wetlands elsewhere. Wetland mitigation is often accomplished within the development site, however, mitigation is allowed off-site and sometimes in another watershed. The appropriate type of mitigation is addressed in each permit.

Some developers and government agencies have accomplished the required mitigation by buying into a wetland bank. Wetland banks are large wetlands created for the purpose of mitigation. The banks accept money to reimburse the owner for setting the land aside from development.

When a wetland is mitigated at a separate site there are drawbacks to consider. First, it takes many years for a new wetland to approach the same quality as an existing one. Second, a new wetland in a different location (especially if it is in a different watershed) will not have the same flood damage reduction benefits as the original one did.

Local Implementation

The three cities should ensure they have adequate ordinances that provide parameters for developing near wetlands. These include requirements for restricting grading and soil disturbances in wetlands, drainage ways, stream environment zones, or water bodies.

CRS Credit

The CRS focuses on activities that directly affect flood damage to insurable buildings. While there is no credit for relying on the Corps of Engineers' 404 regulations, there is credit for preserving open space in its natural condition or restored to a state approximating its natural condition. The credit is based on the percentage of the floodplain that can be documented as wetlands protected from development by ownership or local regulations. Likewise, there is credit for maintaining water quality buffers that protect streams, rivers, lakes and shorelines in their natural condition or restoring them to an approximate natural state. Credit is also available for an approved habitat conservation plan.

Erosion and Sedimentation Control

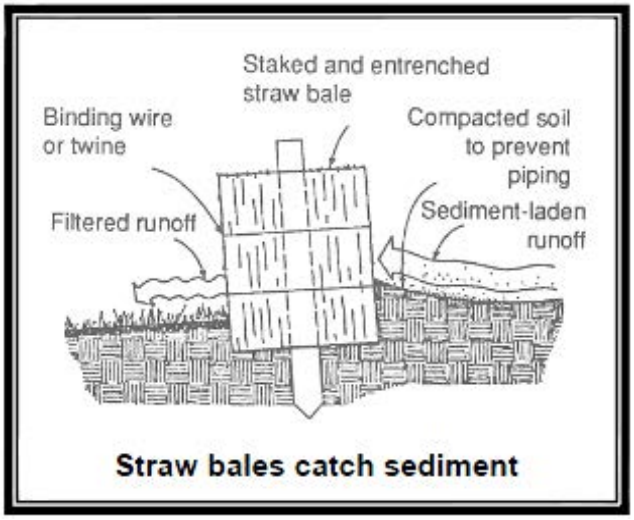
Farmlands and construction sites typically contain large areas of bare exposed soil. Surface water runoff can erode soil from these sites, sending sediment into downstream waterways. Erosion also occurs along stream banks and shorelines as the volume and velocity of flow or wave action destabilize and wash away the soil.

Sediment suspended in the water tends to settle out where flowing water slows down. This can clog storm drains, drain tiles, culverts and ditches and reduce the water transport and storage capacity of river and stream channels, lakes and wetlands. When channels are constricted and flooding cannot deposit sediment in the bottomlands, even more sediment is left in the channels. The result is either clogged streams or increased dredging costs.

Not only are the drainage channels less able to perform their job, but the sediment in the water reduces light, oxygen and water quality, and often carries chemicals, heavy metals and other pollutants. Sediment has been identified by the US EPA as the nation's number one nonpoint source pollutant for aquatic life.

There are two principal strategies to address these problems: minimize erosion and control sedimentation. Techniques to minimize erosion include phased construction, minimal land clearing, and stabilizing bare ground as soon as possible with vegetation and other soil stabilizing practices.

Figure C-8 Erosion Control



If erosion occurs, other measures are used to capture sediment before it leaves the site. Silt fences, sediment traps and vegetated filter strips are commonly used to control sediment transport. Runoff from the site can be slowed down by terraces, contour strip farming, no-till farm practices, hay or straw bales, constructed wetlands, and impoundments (e.g., sediment basins and farm ponds). Slowing surface water runoff on the way to a drainage channel increases infiltration into the soil and reduces the volume of topsoil eroded from the site.

Erosion and sedimentation control regulations mandate that these types of practices be incorporated into construction plans. The most common approach is to require applicants for permits to submit an erosion and sediment control plan for the construction project. This allows the applicant to determine the best practices for the site.

Local Implementation

The three cities have Stormwater Quality Programs and Erosion and Sediment Control Programs which include ordinances and practices for erosion and sedimentation control.

CRS Credit

Local governments whose ordinances include erosion and sedimentation control provisions can qualify for up to 45 points for this measure.

River Restoration

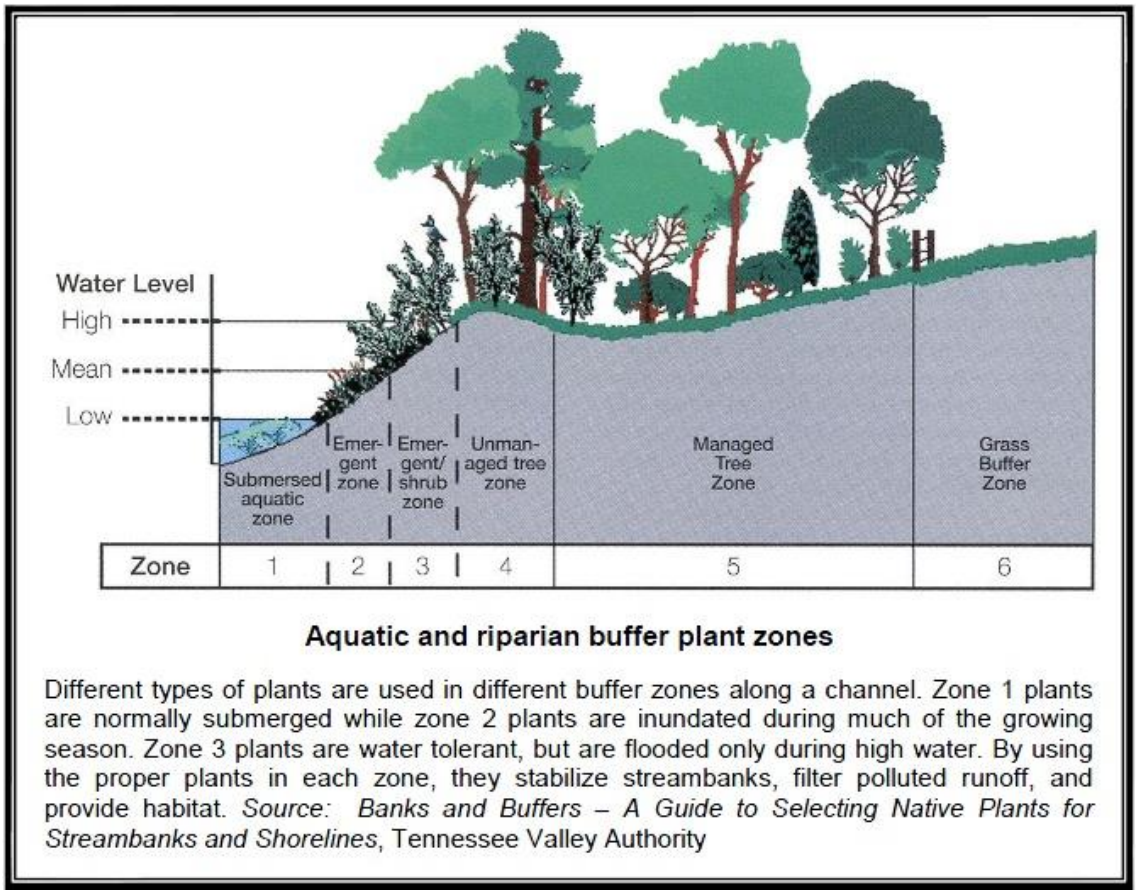
There is a growing movement that has several names, such as "stream conservation," "bioengineering," or "riparian corridor restoration." The objective of these approaches is to return streams, stream banks and adjacent land to a more natural condition, including the natural meanders. Another term is "ecological restoration," which restores native indigenous plants and animals to an area.

A key component of these efforts is to use appropriate native plantings along the banks that resist erosion. This may involve retrofitting the shoreline with willow cuttings, wetland plants, or rolls of landscape material covered with a natural fabric that decomposes after the banks are stabilized with plant roots.

In all, restoring the right vegetation to a stream has the following advantages:

- Reduces the amount of sediment and pollutants entering the water
- Enhances aquatic habitat by cooling water temperature
- Provides food and shelter for both aquatic and terrestrial wildlife
- Can reduce flood damage by slowing the velocity of water
- Increases the beauty of the land and its property value
- Prevents property loss due to erosion
- Provides recreational opportunities, such as hunting, fishing and bird watching
- Reduces long-term maintenance costs

Figure C-9 River Restoration Zones



Aquatic and riparian buffer plant zones

Different types of plants are used in different buffer zones along a channel. Zone 1 plants are normally submerged while zone 2 plants are inundated during much of the growing season. Zone 3 plants are water tolerant, but are flooded only during high water. By using the proper plants in each zone, they stabilize streambanks, filter polluted runoff, and provide habitat. *Source: Banks and Buffers – A Guide to Selecting Native Plants for Streambanks and Shorelines*, Tennessee Valley Authority

Local Implementation

The three cities implement a variety of these activities for water quality and floodplain management purposes under many of their existing programs.

CRS Credit

The CRS provides credits for preserving open space in its natural condition or restored to a state approximating its natural condition. There are also credits for channel setbacks, buffers and protecting shorelines. Credit is also provided for open space land that is deed restricted.

Best Management Practices

Point source pollutants come from pipes such as the outfall of a municipal wastewater treatment plant. They are regulated by the US EPA and the California Department of Water Resources. Nonpoint source pollutants come from non-specific locations and harder to regulate. Examples of nonpoint source pollutants are lawn fertilizers, pesticides, other chemicals, animal wastes, oils from street surfaces and industrial areas, and sediment from agriculture, construction, mining and forestry. These pollutants are washed off the ground's surface by stormwater and flushed into receiving storm sewers, ditches and streams.

The term "best management practices" (BMPs) refers to design, construction and maintenance practices and criteria that minimize the impact of stormwater runoff rates and volumes, prevent erosion, protect natural resources and capture nonpoint source pollutants (including sediment). They can prevent increases in downstream flooding by attenuating runoff and enhancing infiltration of stormwater. They also minimize water quality degradation, preserve beneficial natural features onsite, maintain natural base flows, minimize habitat loss, and provide multiple usages of drainage and storage facilities.

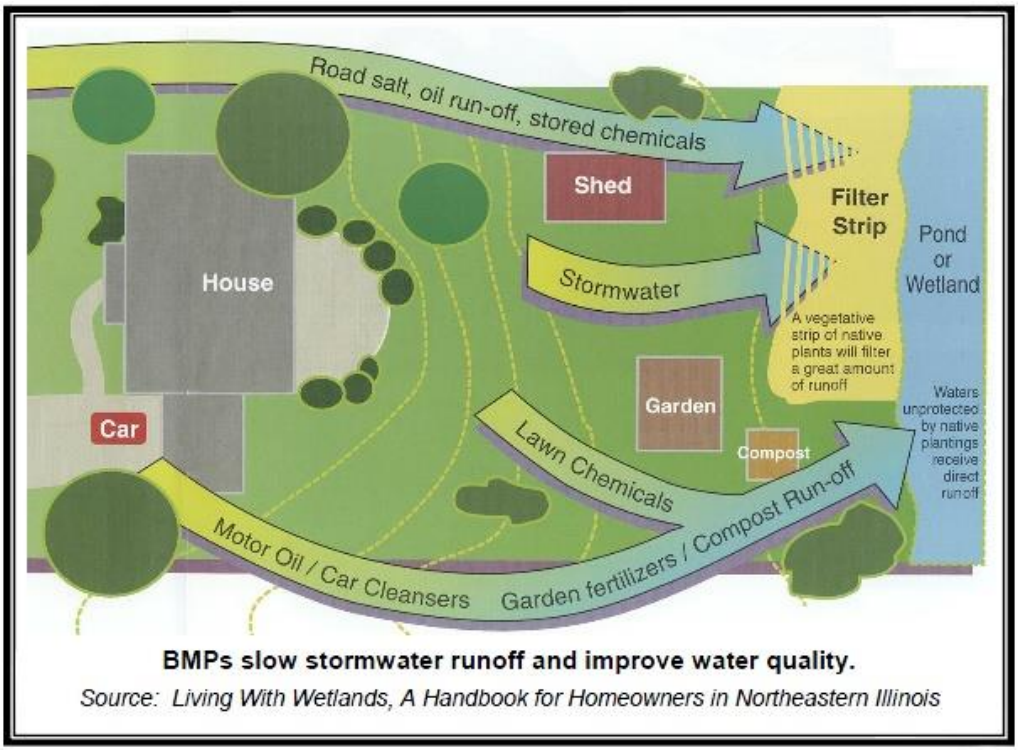
Local Implementation

The three cities participate in the National Pollutant Discharge Elimination System permitting program and require BMPs to minimize stormwater impacts.

CRS Credit

A community can receive CRS points if regulations require new developments to include in the design of their permanent stormwater management facilities appropriate BMPs that will improve the quality of surface waters.

Figure C-10 Stormwater Best Management Practices



Dumping Regulations

BMPs usually address pollutants that are liquids or are suspended in water that are washed into a lake or stream. Dumping regulations address solid matter, such as shopping carts, appliances and landscape waste that can be accidentally or intentionally thrown into channels or wetlands. Such materials may not pollute the water, but they can obstruct even low flows and reduce the channels' and wetlands' abilities to convey or clean stormwater.

Many communities have nuisance ordinances that prohibit dumping garbage or other "objectionable waste" on public or private property. Waterway dumping regulations need to also apply to "non-objectionable" materials, such as grass clippings or tree branches, which can kill ground cover or cause obstructions in channels. Regular inspections to catch violations should be scheduled.

Many people do not realize the consequences of their actions. They may, for example, fill in the ditch in their front yard without realizing that is needed to drain street runoff. They may not understand how regarding their yard, filling a wetland, or discarding leaves or branches in a watercourse can cause a problem to themselves and others. Therefore, a dumping enforcement program should include public information materials that explain the reasons for the rules as well as the penalties.

Local Implementation

The three cities should ensure they have adequate language in place in their local ordinances making it unlawful for anyone to deposit waste, trash, or debris into a waterway. Ordinances should also prohibit the placing of any obstruction in a floodway, including buildings, fill, or fencing. They should also make illegal to dump or discharge hazardous materials, trash, or other pollutants into the storm drains. Even grass, leaves and yard clippings that are repeatedly swept into catch basins can clog the drain, causing flooding and the potential for becoming a breeding ground for rodents and insects. Additionally, when grass and leaves decompose, they encourage excessive growth of algae which can deprive fish of adequate oxygen.

The cities should publicize this information on their local websites and through other outreach mechanisms.

CRS Credit

The CRS provides credit for enforcing and publicizing a regulation that prohibits dumping in the drainage system.

Farmland Protection

Farmland protection is quickly becoming an important piece of comprehensive planning and zoning throughout the United States. The purpose of farmland protection is to provide mechanisms for prime, unique, or important agricultural land to remain as such, and to be protected from conversion to nonagricultural uses.

Frequently, farm owners sell their land to residential or commercial developers and the property is converted to non-agricultural land uses. With development comes more buildings, roads and other infrastructure. Urban sprawl occurs, which can lead to additional stormwater runoff and emergency management difficulties.

Figure C-11 Floodplain Damages to Farmland



Farms on the edge of cities are often appraised based on the price they could be sold for to urban developers. This may drive farmers to sell to developers because their marginal farm operations cannot afford to be taxed as urban land. The Farmland Protection Program in the United States Department of Agriculture's 2002 Farm Bill (Part 519) allows for funds to go to state, tribal, and local governments as well as nonprofit organizations to help purchase easements on agricultural land to protect against the development of the land. Eligible land includes cropland, rangeland, grassland, pastureland, or forest land that is part of an agricultural operation. Certain lands within historical or archaeological resources are also included.

The hazard mitigation benefits of farmland protection are similar to those of open space preservation:

- Farmland is preserved for future generations,
- Farmland in the floodplain keeps damageable structures out of harm's way,
- Farmland keeps more stormwater on site and lets less stormwater runoff downstream,
- Rural economic stability and development is sustained,
- Ecosystems are maintain, restored or enhanced, and
- The rural character and scenic beauty of the area is maintained.

Local Implementation

The three cities participate in open space preservation programs that protect Hillside and Shoreline areas. The three cities do not participate in open space incentive programs based on agricultural uses.

CRS Credit

Credit is given for preserving open space in the floodplain, regardless of why it is being preserved. Credit is also provided for density zoning of floodprone areas.

Conclusions and Recommendations

- A hazard mitigation program can use resource protection programs to support protecting areas and natural features that can mitigate the impacts of natural hazards.
- The three cities should update and enforce regulations that prohibit illicit discharges into public sewers or onto public or private property and should consider publicizing their illicit discharge rules more widely.
- The public and decision makers should be informed about the hazard mitigation benefits of restoring rivers, wetlands and other natural areas. Restoration and protection techniques should be explained.
- Public outreach activities should include informing the public about the need to protect streams and wetlands from dumping and inappropriate development and the relevant codes and regulations.

C.3.4. Emergency Services Measures

Emergency services measures protect people during and after a disaster. A good emergency management program addresses all hazards, and it involves all local government departments. At the state level, emergency services programs are coordinated by the California Office of Emergency Services (Cal OES). Locally, emergency services are coordinated by the Alameda County Office of Emergency Services Offices of Emergency Services for the cities of Fremont, Newark, and Union City.

This section reviews emergency services measures following a chronological order of responding to an emergency. It starts with identifying an impending problem (threat recognition) and continues through post-disaster activities.

Threat Recognition

The first step in responding to a flood, storm, or other natural hazard is to know when weather conditions are such that an event could occur. With a proper and timely threat recognition system, adequate warnings can be disseminated.

Routine Monitoring for Alerts, Watches and Warnings

Emergency officials constantly monitor events and the environment to identify specific threats that may affect their jurisdiction and increase awareness levels of emergency personnel and the community when a threat is approaching or imminent.

The National Weather Service (NWS) is the prime agency for detecting meteorological threats, such as tornadoes, thunderstorms and winter storms. Severe weather warnings are transmitted through NOAA's Weather Radio System. Federal agencies can only look at the large scale, e.g., whether conditions are appropriate for the formation of a thunderstorm. Local emergency managers can provide more site-specific and timely recognition by sending out NWS trained spotters to watch the skies when the Weather Service issues a watch or a warning.

A flood threat recognition system predicts the time and height of a flood crest. This can be done by measuring rainfall, soil moisture, and stream flows upstream of the community and calculating the subsequent flood levels.

On larger rivers, this measuring and calculating is performed by the NWS, a part of the U.S. Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). Support for NOAA's efforts is provided by cooperating partners from state and local agencies. Forecasts of expected river stages are made through the Advanced Hydrologic Prediction Service (AHPS) of the National Weather Service. Flood threat predictions are disseminated on the NOAA Weather Wire or NOAA Weather Radio. NOAA Weather Radio is considered by the federal government as the official source for weather information.

On smaller rivers, locally established rainfall and river gauges are needed to establish a flood threat recognition system. The NWS may issue a "flash flood watch." This is issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain nor imminent. These events are so localized and so rapid that a "flash flood warning" may not be issued, especially if no remote threat recognition equipment is available. In the absence of a gauging system on small streams, the best threat recognition system is to have local personnel monitor rainfall and stream conditions. While specific flood crests and times will not be predicted, this approach will provide advance notice of potential local or flash flooding.

Local Implementation

The Emergency Operations Plan's (EOP) for the three cities, include limited information on procedures for threat identification. The cities work closely with the Alameda County OES and the NWS for issuing an Emergency Alert.

Increased Readiness & Pre-Impact

Early threat identification and sufficient warning provides the opportunity for response agencies to increase readiness, which are actions designed to increase an agency's ability to effectively respond once the emergency occurs. This includes steps to brief key officials, disseminating information to the community, and through activation of EOCs, as necessary.

Community Preparedness and Awareness

Emergency public information is a priority during emergencies and disasters. County and City governments have a primary responsibility to provide accurate and timely information to the public regarding conditions, threats, and protective measures. Emergency information is best communicated when centralized and coordinated among all involved jurisdictions, agencies, and organizations.

The public's response to any emergency is based on an understanding of the nature of the emergency, the potential hazards, the likely response of emergency services, and knowledge of what individuals and groups should do to increase their chances of survival and recovery. Effective public awareness and education prior to an emergency or a disaster will directly affect the three cities' emergency operations response and recovery efforts.

CRS Credit

Credit can be received for using river flood stage predictions for the NWS's gages. The actual score is based on how much of the community's floodplain is affected by these systems. Potential CRS credit is possible under Activity 610 - Flood Warning Program and Response.

Notifications and Warning Systems

Once a disaster is imminent, action is taken to control the situation, save lives, protect property, and minimize the effects of the disaster. During this phase, warning systems are activated; resources and first responders notified and mobilized; and evacuations begin.

After a threat recognition system tells the emergency services office that a flood, severe weather or other hazard is coming, the next step is to notify the public and staff of other agencies and critical facilities. Providing adequate and timely notification to the public is the greatest challenge, especially with sudden or no-notice events. The earlier and more specific the warning, the greater the number of people that can implement protection measures.

As previously described, the NWS issues notices to the public using two levels of notification:

- **Watch.** Conditions are right for flooding, thunderstorms, or other hazard event.
- **Warning**. A flood or other event has started or been observed.

A more specific warning may be disseminated by the community in a variety of ways. The following are the more common methods:

- Commercial or public radio or TV stations
- The Weather Channel
- Cable TV emergency news inserts
- Telephone trees/mass telephone notification
- NOAA Weather Radio
- Tone activated receivers in key facilities
- Outdoor warning sirens
- Sirens on public safety vehicles
- Door-to-door contact
- Mobile public address systems
- Email notifications

Multiple or redundant systems are most effective - if people do not hear one warning, they may still get the message from another part of the system. Each has advantages and disadvantages:

- Radio and television provide a lot of information, but people have to know when to turn them on. They are most appropriate for hazards that that develop over more than a day, such as a tropical storm, hurricane, or winter storm.
- NOAA Weather Radio can provide short messages of any impending weather hazard or emergency and advise people to turn on their televisions for more information, but not everyone has a Weather Radio.
- Outdoor warning sirens can reach many people quickly as long as they are outdoors. They do not reach people in tightly-insulated buildings or those around loud noise, such as at a factory, during a thunderstorm, or in air conditioned homes. They do not explain what hazard is coming, but people should know to turn on a radio or television when they hear the siren.
- Automated telephone notification services are also fast, but can be expensive and do not work when phone lines are down. Nor do they work for unlisted numbers, call screening services, or cellular service, unless people sign up for notifications.
- Where a threat has a longer lead time, going door-to-door and manual telephone trees can be effective.

Just as important as issuing a warning is telling people what to do in case of an emergency. A warning program should have a public information aspect. Citizens should know the difference between a tornado warning (when they should seek shelter in a low spot), a flood warning (when they should stay out of low areas), and other appropriate warnings and responses.

StormReady

The National Weather Service established the StormReady program to help local governments improve the timeliness and effectiveness of hazardous weather related warnings for the public. To be officially StormReady, a community must:

- Establish a 24-hour warning point and emergency operations center,
- Have more than one way to receive severe weather warnings and forecasts and to alert the public,
- Create a system that monitors weather conditions locally,

- Promote the importance of public readiness through community seminars, and
- Develop a formal hazardous weather plan, which includes training severe weather spotters and holding emergency exercises.

Being designated a StormReady community by the National Weather Service is a good measure of a community's emergency warning program for weather hazards. It is also credited by the CRS.

Local Implementation

In coordination with established public safety warning protocols, the activated EOCs for the cities will manage the dissemination of timely and adequate warnings to threatened populations in the most direct and effective means possible.

Neither of the three cities are StormReady certified, but all are considering StormReady certification.

CRS Credit

Community Rating System points are based on the number and types of warning media that can reach the community's flood prone population. Depending on the location, communities can receive credit for the telephone calling system and more points if there are additional measures, like telephone trees. Being designated as a StormReady community can provide additional points. These credits are in Activity 610 - Flood Warning Program and Response.

Response

The protection of life and property is the most important task of emergency responders. Concurrent with threat recognition and issuing warnings, a community should respond with actions that can prevent or reduce damage and injuries. Typical actions and responding parties include the following:

- Activating the emergency operations center (emergency preparedness),
- Closing streets or bridges (police or public works),
- Shutting off power to threatened areas (utility company),
- Passing out sand and sandbags (public works),
- Holding children at school or releasing children from school (school superintendent),
- Opening evacuation shelters (the American Red Cross),
- Monitoring water levels (public works), and
- Establishing security and other protection measures (police).

An emergency action plan ensures that all bases are covered and that the response activities are appropriate for the expected threat. These plans are developed in coordination with the agencies or offices that are given various responsibilities.

A flood stage forecast map shows areas that will be under water at various flood stages. Different flood levels are shown as color coded areas, so the emergency manager can quickly see what will be affected. Emergency management staff can identify the number of properties flooded, which roads will be under water, which critical facilities will be affected, and who to warn. With this information, an advance plan

can be prepared that shows problem sites and determines what resources will be needed to respond to the predicted flood level.

Emergency response plans should be updated annually to keep contact names and telephone numbers current and to ensure that supplies and equipment that will be needed are still available. They should be critiqued and revised after disasters and exercises to take advantage of the lessons learned and of changing conditions. The end result is a coordinated effort implemented by people who have experience working together so that available resources will be used in the most efficient manner possible.

Local Implementation

As part of this LHMP Update, the three cities are evaluating improvements to their flood warning system based on CRS Activity 610, Flood Warning and Response.

CRS Credit

The CRS program provides credit under Activity 610- Flood Warning for a warning system that effectively notifies residents of a flood and has procedures for testing and monitoring the system.

Evacuation and Shelter

According to Emergency Management: Principles and Practice, the principle of evacuation is to move citizens from a place of relative danger to a place of relative safety, via a route that does not pose significant danger. There are six key components to a successful evacuation:

- Adequate warning
- Adequate routes
- Proper timing to ensure the routes are clear
- Traffic control
- Knowledgeable travelers
- Care for special populations (e.g., the handicapped, prisoners, hospital patients, and schoolchildren)

Those who cannot get out of harm's way need shelter. Typically, the American Red Cross will staff a shelter and ensure that there is adequate food, bedding, and wash facilities. Shelter management is a specialized skill. Managers must deal with problems like scared children, families that want to bring in their pets, and the potential for an overcrowded facility.

Local Implementation

The EOPs for the three cities address sheltering during a hazard event or disaster to provide people affected by a disaster with a safe, temporary place to be housed during or immediately after a disaster until they can either return to their homes or be relocated to other housing facilities. Comprehensive evacuation planning in the Tri-City planning area should be considered.

CRS Credit

Because it is primarily concerned with protecting insurable buildings, the CRS does not provide any special credit for evacuation or sheltering of people (minimal credit is given in Activity 510 - Floodplain Management for evacuation policies and procedures). It is assumed that the emergency response plan would include all necessary actions in response to a flood.

Post-Disaster Recovery and Mitigation

After a disaster, communities should undertake activities to protect public health and safety and facilitate recovery. Appropriate measures include:

- Patrolling evacuated areas to prevent looting,
- Providing safe drinking water,
- Monitoring for diseases,
- Vaccinating residents for tetanus and other diseases,
- Clearing streets, and
- Cleaning up debris and garbage.

Throughout the recovery phase, everyone wants to get "back to normal." The problem is that "normal" means the way they were before the disaster, exposed to repeated damage from future disasters. There should be an effort to help prepare people and property for the next disaster. Such an effort would include:

- Public information activities to advise residents about mitigation measures they can incorporate into their reconstruction work,
- Evaluating damaged public facilities to identify mitigation measures that can be included during repairs,
- Identifying other mitigation measures that can lessen the impact of the next disaster,
- Acquiring substantially or repeatedly damaged properties from willing sellers,
- Planning for long-term mitigation activities, and
- Applying for post-disaster mitigation funds.

Regulating Reconstruction

Requiring permits for building repairs and conducting inspections are vital activities to ensure that damaged structures are safe for people to reenter and repair. There is a special requirement to do this in floodplains, regardless of the type of disaster or the cause of damage. The NFIP requires that local officials enforce the substantial damage regulations. These rules require that if the cost to repair a building in the mapped floodplain equals or exceeds 50% of the building's market value, the building must be retrofitted to meet the standards of a new building in the floodplain. In most cases, this means that a substantially damaged building must be elevated above the base flood elevation.

This requirement can be very difficult for understaffed and overworked offices following a disaster. However, if these activities are not carried out properly, not only does the community miss a tremendous opportunity to redevelop or clear out a hazardous area, it may be violating its obligations under the NFIP. In some areas, mutual aid agreements have been established so building inspectors from a community not affected by the disaster can work in the communities that were hit the hardest.

Local Implementation

The three cities should consider the development of comprehensive post-disaster recovery policies in place for the communities. The EOPs are intended to facilitate multi-agency and multi-jurisdictional coordination during emergencies including hazard events. Through it policies and procedures the EOPs seek to mitigate the effects of hazards, prepare for measures to be taken which will preserve life and minimize damage, enhance response during emergencies and provide necessary assistance, and establish a recovery system in order to return the community to their normal state of affairs.

CRS Credit

The CRS does credit post-disaster mitigation procedures if the policies and procedures are incorporated into a flood mitigation or multi-hazard plan through Activity 510 - Floodplain Management Planning.

Conclusions and Recommendations

- There are several threat recognitions systems that can provide the three cities with advance notice of an impending emergency.
- Emergency management guidance could be very helpful when things happen quickly and for hazards that have predictable impacts, such as flooding.
- The three cities should update and exercise their EOPs on a regular basis.
- The three cities should work together to protect people before and after a disaster including an outreach program to promote each community's warning system.

C.3.5. Flood Control Measures

Four general types of flood control projects are reviewed here: levees, reservoirs, diversions, and dredging. These projects have three advantages not provided by other mitigation measures:

- They can stop most flooding, protecting streets and landscaping in addition to buildings,
- Many projects can be built without disrupting citizens' homes and businesses, and
- They are constructed and maintained by a government agency, a more dependable long-term management arrangement than depending on many individual private property owners.

However, as shown below, structural measures can have shortcomings. The appropriateness of using flood control depends on individual project area circumstances.

Pros and Cons of Structural Flood Control Projects

- Advantages
  - ✓ They may provide the greatest amount of protection for land area used.
  - ✓ Because of land limitations, they may be the only practical solution in some circumstances.
  - ✓ They can incorporate other benefits into structural project design, such as water supply and recreational uses.
  - ✓ Regional detention may be more cost-efficient and effective than requiring numerous small detention basins.

- Disadvantages
  - ✓ They can disturb the land and disrupt the natural water flows, often destroying wildlife habitat.
  - ✓ They require regular maintenance, which if neglected can have disastrous consequences.
  - ✓ They are built to a certain flood protection level that can be exceeded by larger floods, causing extensive damage.
  - ✓ They can create a false sense of security, as people protected by a project often believe no flood can ever reach them.
  - ✓ Although it may be unintended, in many circumstances they promote more intensive land use and development in the floodplain.

Levees and Floodwalls

Probably the best known flood control measure is a barrier of earth (levee) or concrete (floodwall) erected between the watercourse and the property to be protected. Levees and floodwalls confine water to the stream channel by raising its banks. They must be well designed to account for large floods, underground seepage, pumping of internal drainage, and erosion and scour. Key considerations when evaluating the use of a levee include:

- Design and permitting costs,
- Right of way acquisition,
- Removal of fill to compensate for the floodwater storage that will be displaced by the levee,
- Internal drainage of surface flows from the area inside the levee,
- Cost of construction,
- Cost of maintenance,
- Mitigation of adverse impacts to wetlands and other habitats,
- Loss of river access and views, and
- Creating a false sense of security, because while levees may reduce flood damage for smaller more frequent rain events, they may also overtop or breach in extreme flood events and subsequently create more flood damage than would have occurred without the levee.

Levees placed along the river or stream edge can degrade the aquatic habitat and water quality of the stream. They also are more likely to push floodwater onto other properties upstream or downstream. To reduce environmental impacts and provide multiple use benefits, a setback levee is often the best project design. The area inside a setback levee can provide open space for recreational purposes and provide access sites to the river or stream.

Floodwalls perform like levees except they are vertical-sided structures that require less surface area for construction. Floodwalls are constructed of steel sheet pile or reinforced concrete, which makes the expense of installation cost prohibitive in many circumstances. Floodwalls also can degrade adjacent habitat and can displace erosive energy to unprotected areas of shoreline downstream.

Reservoirs and Detention

Reservoirs reduce flooding by temporarily storing flood waters behind dams or in storage or detention basins. Reservoirs lower flood heights by holding back, or detaining, runoff before it can flow downstream. Flood waters are detained until the flood has subsided, and then the water in the reservoir or detention basin is released or pumped out slowly at a rate that the river can accommodate downstream.

Reservoirs can be dry and remain idle until a large rain event occurs. Or they may be designed so that a lake or pond is created. The lake may provide recreational benefits or water supply (which could also help mitigate a drought).

Flood control reservoirs are most commonly built for one of two purposes. Large reservoirs are constructed to protect property from existing flood problems. Smaller reservoirs, or detention basins, are built to protect property from the stormwater runoff impacts of new development.

Figure C-12 Retention Pond



Retention pond

Regardless of size, reservoirs protect the development that is downstream from the reservoir site. Unlike levees and channel modifications, they do not have to be built close to or disrupt the area to be protected. Reservoirs are most efficient in deeper valleys where there is more room to store water, or on smaller rivers where there is less water to be stored.

In urban areas, some reservoirs are simply manmade holes, excavated to store floodwaters. Reservoirs in urban areas are typically constructed adjacent to streams (though usually outside of the floodplain). When built in the ground, there is no dam for these retention and detention basins and no dam failure hazard. Wet or dry basins can also serve multiple uses by doubling as parks or other open space uses.

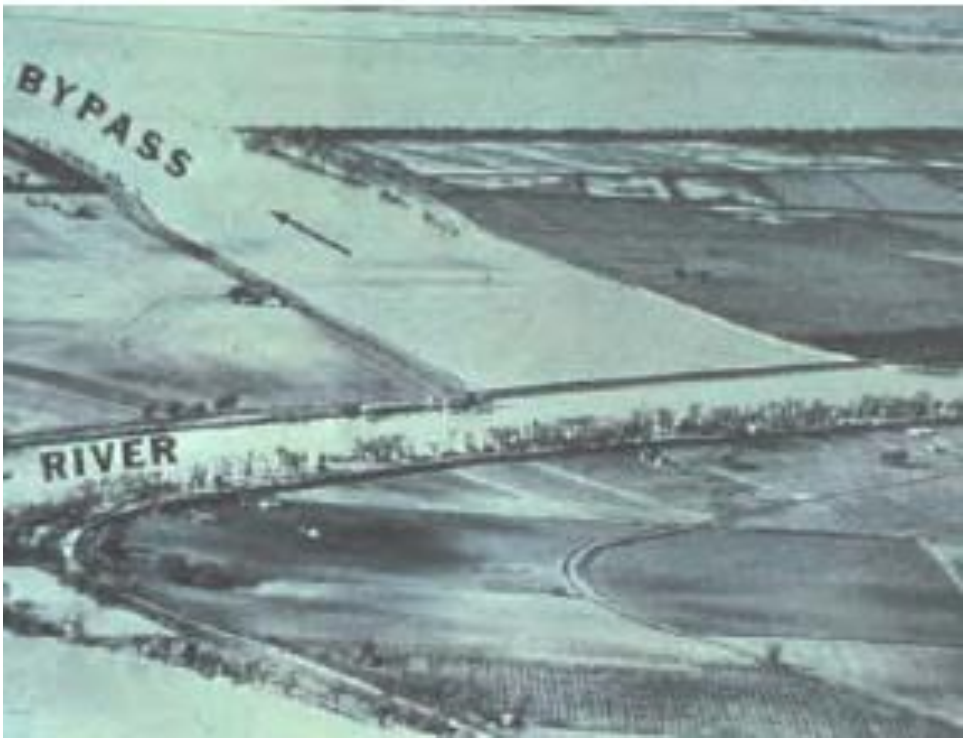
There are several considerations when evaluating the use of reservoirs and detention:

- There is the threat of flooding the protected area should the reservoir's dam fail,
- There is a constant expense for the management and maintenance of the facility,
- They may fail to prevent floods that exceed their design levels,
- Sediment deposition may occur and reduce the storage capacity over time,
- They can impact water quality as they are known to affect temperature, dissolved oxygen and nitrogen, and nutrient levels, and
- If not designed correctly, in-stream reservoirs may cause backwater flooding problems upstream

Diversion

A diversion is a new channel that sends floodwaters to a different location, thereby reducing flooding along an existing watercourse. Diversions can be surface channels, overflow weirs, or tunnels. During normal flows, the water stays in the old channel. During floods, the floodwaters spill over to the diversion channel or tunnel, which carries the excess water to a receiving lake or river.

Figure C-13 Diversion



Diversions are limited by topography; they will not work in some areas. Unless the receiving water body is relatively close to the floodprone stream and the land in between is low and vacant, the cost of creating a diversion can be prohibitive.

Dredging

Dredging is often viewed as a form of conveyance improvement. However, it has the following problems:

- Given the large volume of water that comes downstream during a flood, removing a foot or two from the bottom of the channel will have little effect on flood heights.
- Dredging is often cost prohibitive because the dredged material must be disposed of somewhere.
- Unless in-stream or tributary erosion is corrected upstream, the dredged areas usually fill back in within a few years, and the process and the expense have to be repeated.
- If the channel has not been disturbed for many years, dredging will destroy the habitat that has developed.

Figure C-14 Dredging Activity



To protect the natural values of the stream, federal law requires a U.S. Army Corps of Engineers permit before dredging can proceed. This can be a lengthy process that requires a lot of advance planning and many safeguards to protect habitats, which adds to the cost of the project.

CRS Credit

Structural flood control projects that provide flood protection against the 1% annual chance flood and that result in revisions to the Flood Insurance Rate Map are not credited by the CRS in order to avoid duplicating the larger premium reduction provided by removing properties from the mapped floodplain.

The CRS credits smaller flood control projects that meet the following criteria:

- They must provide protection to at least the 25-year flood,
- They must meet certain environmental protection criteria,
- They must meet federal, state and local regulations, such as the Corps of Engineers' 404 permit and California Division of Dam Safety for dam safety rules, and
- They must meet certain maintenance requirements.

These criteria ensure that credited projects are well-planned and permitted. Any of the measures reviewed in this section would be recognized under Activity 530 - Flood Protection, although it would be very hard to qualify a dredging project. Credit points are based on the type of project, how many buildings are protected, and the level of flood protection provided.

Local Implementation

Area of the Tri-City planning area are dependent on levees and other flood control structures to prevent flooding as previously described in this LHMP. Most of these are owned and maintained by the Alameda

County Flood Control and Water Conservation District (ACFCD). The ACFCD is also responsible for the implementation of new flood control facilities as well as improvements to existing facilities.

Conclusions and Recommendations

- The three cities, working closely with the ACFCD should continue to evaluate and implement flood control and drainage improvement project to reduce the potential from future flooding.

C.3.6. Public Information Measures

A successful hazard mitigation program involves both the public and private sectors. Public information activities advise property owners, renters, and businesses about hazards and ways to protect people and property from these hazards. These activities can motivate people to take the steps necessary to protect themselves and others.

Information can bring about voluntary mitigation activities at little or no cost to the government. Property owners mitigated their flooding problems long before government funding programs existed. The typical approach to delivering information involves two levels of activity. The first is to broadcast a short and simple version of the message to everyone potentially affected. The second level provides more detailed information to those who respond and want to learn more.

This section starts with activities that reach out to people and tell them to be advised of the hazards and some of the things they can do. It then covers additional sources of information for those who want to learn more. It ends with a general public information strategy.

Outreach Projects

Outreach projects are the first step in the process of orienting property owners to the hazards they face and to the concept of property protection. They are designed to encourage people to seek out more information in order to take steps to protect themselves and their properties.

Research has shown that outreach projects work. However, awareness of the hazard is not enough; people need to be told what they can do about the hazard. Thus, projects should include information on safety, health and property protection measures. Research has also shown that a properly run local information program is more effective than national advertising or publicity campaigns. Therefore, outreach projects should be locally designed and tailored to meet local conditions.

Community newsletters/direct mailings: One of the more effective types of outreach projects include mailings or distributions to everyone in the community. In the case of floods, they may be sent only to floodplain property owners.

News media: Local newspapers can be strong allies in efforts to inform the public. Press releases and story ideas may be all that's needed to gain their interest. After a flood in another community, people and the media become interested in their flood hazard and how to protect themselves and their property. Local radio stations and cable TV channels can also help. These media offer interview formats and cable TV may be willing to broadcast videos on the hazards.

Other approaches: Examples of other outreach projects include:

- Presentations at meetings of neighborhood, civic or business groups,
- Displays in public buildings or shopping malls,
- Signs in parks, along trails and on waterfronts that explain the natural features (such as the river) and their relation to the hazards (such as floods),
- Social Media broadcasts,
- Brochures available in municipal buildings and libraries, and
- Special meetings, workshops and seminars.

Local Implementation

The City of Fremont maintains a flood information website that provides information on their flood management program. The cities of Newark and Union City have websites that include information on flood awareness and preparedness. Flood materials are also included a local libraries.

CRS Credit

The Community Rating System provides credit for outreach projects which cover six flood-related topics. Credit is also available for producing flood response materials. Another way to achieve credit for outreach is for producing a PPI. A 40% bonus is applied to outreach credits which are included in a PPI.

Real Estate Disclosure

Many times after a flood or other natural disaster, people say they would have taken steps to protect themselves if they had known they had purchased a property exposed to a hazard. There are some federal and state requirements about such disclosures, but they have their limits.

Federal law: Federally regulated lending institutions must advise applicants for a mortgage or other loan that is to be secured by an insurable building whether the property is in a floodplain as shown on the Flood Insurance Rate Map. If so, flood insurance is required for buildings located within the floodplain if the mortgage or loan is federally insured. However, because this requirement has to be met only 10 days before closing, the applicant is often already committed to purchasing the property when he or she first learns of the flood hazard.

State law: State laws set standards for real estate sales and licensing of agents and brokers.

Local Implementation

The State of California regulations require the disclosure of flood hazards. The City of Fremont anticipates to receive 15 CRS credits for this Activity.

CRS Credit

Communities in areas that have additional disclosure requirements are eligible for five points under the "Other disclosure requirements" as well as 10 points for the "Disclosure of other hazards."

Libraries and Websites

The two previous activities tell people that they are exposed to a hazard. The next step is to provide information to those who want to know more. The community library and local websites are obvious places for residents to seek information on hazards, hazard protection, and protecting natural resources.

Books and pamphlets on hazard mitigation can be given to libraries, and many of these can be obtained for free from state and federal agencies. Libraries also have their own public information campaigns with displays, lectures and other projects, which can augment the activities of the local government. Today, websites are commonly used as research tools. They provide fast access to a wealth of public and private sites for information. Through links to other websites, there is almost no limit to the amount of up to date information that can be accessed on the Internet.

In addition to online floodplain maps, websites can link to information for homeowners on how to retrofit for tornadoes and floods or a website about floods for children. The "FEMA for Kids" website teaches children how to protect their home and what to have in a family disaster kit.

Local Implementation

The City of Fremont provides a variety of flood materials placed in the reference section of the Alameda County Fremont main library.

CRS Credit

The Community Rating System provides credit for having a variety of flood references in the local public library and additional credits for similar material included on municipal websites (Activity 350 - Flood Protection Information).

Technical Assistance

Hazard Information

Many benefits stem from providing map information to inquirers. Residents and business owners that are aware of the potential hazards can take steps to avoid problems or reduce their exposure to flooding. Real estate agents and house hunters can find out if a property is floodprone and whether flood insurance may be required.

Communities can easily provide map information from FEMA's DFIRMs and Flood Insurance Studies. They may also assist residents in submitting requests for map amendments and revisions when they are needed to show that a building is located outside the mapped floodplain.

Some communities supplement what is shown on the DFIRM with information on additional hazards, flooding outside mapped areas and zoning. When the map information is provided, community staff can explain insurance, property protection measures and mitigation options that are available to property owners. They should also remind inquirers that being outside the mapped floodplain is no guarantee that a property will never get wet.

Property Protection Assistance

While general information provided by outreach projects or the library is beneficial, most property owners do not feel ready to retrofit their buildings without more specific guidance. Local building department staffs are experts in construction. They can provide free advice, not necessarily to design a protection measure, but to steer the owner onto the right track:

- Building or public works department staffs can provide the following types of assistance:
- Visit properties and offer protection suggestions,
- Recommend or identify qualified or licensed contractors,
- Inspect homes for anchoring of roofing and the home to the foundation,
- Provide advice on protecting windows and garage doors from high winds, and
- Explain when building permits are needed for home improvements.

There is a concern that a local official might provide the wrong information and the community would be sued if a project failed. To counter this, there are guidelines for local programs and training on how to identify the right measures. FEMA conducts a free week-long course at its Emergency Management Institute on property protection measures for flooding. FEMA and the Corps of Engineers periodically conduct one- or two-day retrofitting workshops.

Local Implementation

FEMA floodplain maps are available on local websites for the City of Fremont. Fremont also respond to requests on whether a property is located in a Special Flood Hazard Area. Fremont also maintain elevation certificates for many existing home within or near the SFHA. The cities of Newark and Union City provide links on their websites to FEMA flood maps.

CRS Credit

The Community Rating System provides points for providing map information to inquirers. Points are available for providing one-on-one flood protection assistance to residents and businesses and for making site visits. Both services must be publicized.

Public Information Program Strategy

A public information program strategy is a document that receives CRS credit. It is a review of local conditions, local public information needs, and a recommended plan of activities. A strategy consists of the following parts, which are incorporated into this plan:

- The local flood hazard (discussed in Chapter 4)
- The property protection measures appropriate for the flood hazard (discussed in Chapters 4 and 5)
- Flood safety measures appropriate for the local situation (discussed in Chapters 4 and 5)
- The public information activities currently being implemented within the community, including those being carried out by non-government agencies (discussed in Chapter 4 and jurisdictional annexes)
- Goals for the community's public information program (discussed in Chapters 4 and 5)
- The outreach projects that will be done each year to reach the goals (discussed in Chapters 4 and 5)
- The process that will be followed to monitor and evaluate the projects (discussed in Chapter 7)

Figure C-15 illustrates several flood safety tips that can be used in an outreach campaign to better inform the public of the hazards associated with flooding.

Figure C-15 Flood Safety Tips for Outreach Campaign

Flood Safety

Pay attention to evacuation orders. Listen to local radio or TV stations for forecasts and emergency warnings. Know about evacuation routes and nearby shelters and have plans for all family members on how to evacuate and where to meet if you're split up during an emergency.

Do not drive through a flooded area. During a flood, more people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out.

Do not walk through flowing water. Flash flooding is the leading cause of weather-related deaths in the U.S. Currents can be deceptive; 6 inches of moving water can knock you off your feet in a strong current. If you walk in standing water, use a stick to help you locate the ground.

Stay away from power lines and electrical wires. Electrical currents can travel through water. Report downed power lines to the police or sheriff by calling 911.

Have the power company turn off your electricity. Some appliances, like TV sets, keep electrical charges even after they've been unplugged. Don't use appliances or motors that have gotten wet unless they have been taken apart, cleaned and dried.

Look before you step. After a flood, the ground and floors are covered with debris like broken bottles and nails. Floors and stairs that are covered with mud can also be slippery.

Be alert for gas leaks. Use a flashlight to inspect damage. Don't smoke or use candles, lanterns, or open flames unless you know the gas has been shut off and the area has been ventilated.

Look out for animals that may have been flooded out of their homes and who may seek shelter in yours. Use a pole or stick to turn things over and scare away small animals.

Look before you step. After a flood, the ground and floors are covered with debris. Floors and stairs that have been covered with mud will be very slippery.

Carbon monoxide exhaust kills. Use a generator or other gasoline-powered machine outdoors. The same goes for camping stoves. Charcoal fumes are especially deadly – cook with charcoal outdoors.

Clean everything that got wet in the flood. Floodwaters have picked up sewage and chemicals from roads, farms, factories, and storage buildings. Spoiled food, and flooded cosmetics and medicines can be health hazards. When in doubt, throw it out.

Take care of yourself. Recovering from a flood is a big job. It is tough on both the body and the spirit and the effects a disaster has on you and your family may last a long time.

CRS Credit

The CRS provides up to 350 points for a Program for Public Information (PPI).

Conclusions and Recommendations

- There are many ways that public information can be used so that people and businesses will be more aware of the hazards they face and how they can protect themselves.
- Libraries and websites are currently being used as public information tools for the three cities.
- The most important topics to cover in public information activities are:

- ✓ Safety precautions for all types of hazards, but especially floods, earthquakes, thunder storms, winter storms, wildfires, and tornadoes.
- ✓ Knowing where emergency evacuation shelters are located.
- ✓ Flood protection measures, including rules for new construction and insurance.
- ✓ Keeping drainage ways clear and protection from local drainage problems.
- ✓ Family and emergency preparedness measures.
- ✓ What the cities are doing and sources of assistance.
- ✓ Protecting water quality and wetlands and the benefits of open space.

➢ The most appropriate ways to spread this information are:

- ✓ Websites and social media
- ✓ Mailings to everyone, in utility bills or otherwise
- ✓ News releases or newspaper articles
- ✓ Newsletters
- ✓ Displays, particularly at special events
- ✓ Handouts, flyers and other materials, which can be distributed at special events and presentations

➢ City staff should continue to reach out to residents, civic organizations and other organizations to help spread the word about flood hazards, flood protection, and safety measures.

Appendix D Adoption Resolution

Note to Reviewers: When this plan has been reviewed and approved pending adoption by FEMA Region IX, the adoption resolutions will be signed by each participating jurisdiction and added to this appendix. A model resolution is provided below. For the three incorporated communities this adoption resolution also includes compliance with AB 2140 requiring adoption by reference or incorporation into the Safety Element of the General Plan.

Two resolutions were created – one for the three incorporated communities and one for the two Special Districts.

Sample Incorporated Community Adoption Resolution

(LOCAL GOVERNMENT: City)

RESOLUTION NO.

A RESOLUTION OF (LOCAL GOVERNMENT) ADOPTING THE (TITLE AND DATE OF MITIGATION PLAN).

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within (local government); and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local government) from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates its commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

WHEREAS, the (local governing body) seeking FEMA approval of hazard mitigation plan desires to comply with the requirements of the Disaster Mitigation Act and to augment its emergency planning efforts by formally adopting the (title and date of mitigation plan) by reference into the Safety Element of the General Plan in accordance with the requirements of AB 2140; and

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL GOVERNMENT), (STATE), THAT:

In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). *While content related to (local government) may require revisions to meet the plan approval requirements, changes occurring after adoption will not require (local government) to re-*

adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.

BE IT RESOLVED, that the (Name of Government/District/Organization seeking FEMA approval of hazard mitigation plan) adopts the (title and date of mitigation plan) by reference into the safety element of their general plan in accordance with the requirements of AB 2140; and

BE IT FURTHER RESOLVED, the (local governing body) will submit this adoption resolution to the California Office of Emergency Services and FEMA Region IX officials to enable the plan's final approval in accordance with the requirements of the Disaster Mitigation Act of 2000 and to establish conformance with the requirement of AB 2140.

ADOPTED by a vote of ____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By: _____ (print name)

ATTEST: By: _____ (print name)

APPROVED AS TO FORM: By: _____ (print name)

Sample Special District Adoption Resolution

(LOCAL GOVERNMENT: Special Districts)

RESOLUTION NO.

A RESOLUTION OF (LOCAL GOVERNMENT) ADOPTING THE (TITLE AND DATE OF MITIGATION PLAN).

WHEREAS the (local governing body) recognizes the threat that natural hazards pose to people and property within (local government); and

WHEREAS the (local government) has prepared a multi-hazard mitigation plan, hereby known as (title and date of mitigation plan) in accordance with federal laws, including the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended; the National Flood Insurance Act of 1968, as amended; and the National Dam Safety Program Act, as amended; and

WHEREAS (title and date of mitigation plan) identifies mitigation goals and actions to reduce or eliminate long-term risk to people and property in (local government) from the impacts of future hazards and disasters; and

WHEREAS adoption by the (local governing body) demonstrates its commitment to hazard mitigation and achieving the goals outlined in the (title and date of mitigation plan).

NOW THEREFORE, BE IT RESOLVED BY THE (LOCAL GOVERNMENT), (STATE), THAT:

In accordance with (local rule for adopting resolutions), the (local governing body) adopts the (title and date of mitigation plan). *While content related to (local government) may require revisions to meet the plan approval requirements, changes occurring after adoption will not require (local government) to re-adopt any further iterations of the plan. Subsequent plan updates following the approval period for this plan will require separate adoption resolutions.*

BE IT FURTHER RESOLVED, the (local governing body) will submit this adoption resolution to the California Office of Emergency Services and FEMA Region IX officials to enable the plan's final approval in accordance with the requirements of the Disaster Mitigation Act of 2000.

ADOPTED by a vote of ____ in favor and ____ against, and ____ abstaining, this _____ day of _____, _____.

By: _____ (print name)

ATTEST: By: _____ (print name)

APPROVED AS TO FORM: By: _____ (print name)

Appendix E Threatened and Endangered Species

Table E–1 Special Status Species in Tri-City Areas of Alameda County

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Animals – Amphibians					
Ambystoma californiense pop. 1	California tiger salamander – central California DPS	Threatened	Threatened	WL	–
Rana boylii	foothill yellow–legged frog	None	Endangered	SSC	–
Rana draytonii	California red–legged frog	Threatened	None	SSC	–
Animals – Birds					
Accipiter cooperii	Cooper's hawk	None	None	WL	–
Accipiter striatus	sharp–shinned hawk	None	None	WL	–
Aquila chrysaetos	golden eagle	None	None	FP WL	–
Buteo regalis	ferruginous hawk	None	None	WL	–
Buteo swainsoni	Swainson's hawk	None	Threatened	–	–
Circus hudsonius	northern harrier	None	None	SSC	–
Elanus leucurus	white–tailed kite	None	None	FP	–
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	FP	–
Eremophila alpestris actia	California horned lark	None	None	WL	–
Anser albifrons elgasi	tule greater white–fronted goose	None	None	SSC	–
Branta hutchinsii leucopareia	cackling (=Aleutian Canada) goose	Delisted	None	WL	–
Bucephala islandica	Barrow's goldeneye	None	None	SSC	–
Ardea alba	great egret	None	None	–	–
Ardea herodias	great blue heron	None	None	–	–
Botaurus lentiginosus	American bittern	None	None	–	–
Egretta thula	snowy egret	None	None	–	–
Nycticorax nycticorax	black–crowned night heron	None	None	–	–
Charadrius montanus	mountain plover	None	None	SSC	–
Charadrius nivosus nivosus	western snowy plover	Threatened	None	SSC	–
Falco columbarius	merlin	None	None	WL	–
Falco mexicanus	prairie falcon	None	None	WL	–
Falco peregrinus anatum	American peregrine falcon	Delisted	Delisted	FP	–
Spinus lawrencei	Lawrence's goldfinch	None	None	–	–
Antigone canadensis tabida	greater sandhill crane	None	Threatened	FP	–

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Progne subis	purple martin	None	None	SSC	–
Agelaius tricolor	tricolored blackbird	None	Threatened	SSC	–
Xanthocephalus xanthocephalus	yellow–headed blackbird	None	None	SSC	–
Icteria virens	yellow–breasted chat	None	None	SSC	–
Lanius ludovicianus	loggerhead shrike	None	None	SSC	–
Hydroprogne caspia	Caspian tern	None	None	–	–
Sternula antillarum browni	California least tern	Endangered	Endangered	FP	–
Pandion haliaetus	osprey	None	None	WL	–
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	None	None	SSC	–
Setophaga petechia	yellow warbler	None	None	SSC	–
Ammodramus savannarum	grasshopper sparrow	None	None	SSC	–
Artemisiospiza belli belli	Bell's sage sparrow	None	None	WL	–
Melospiza melodia maxillaris	Suisun song sparrow	None	None	SSC	–
Melospiza melodia pop. 1	song sparrow (–inModesto–in population)	None	None	SSC	–
Melospiza melodia pusillula	Alameda song sparrow	None	None	SSC	–
Melospiza melodia samuelis	San Pablo song sparrow	None	None	SSC	–
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None	SSC	–
Pelecanus erythrorhynchos	American white pelican	None	None	SSC	–
Nannopterum auritum	double–crested cormorant	None	None	WL	–
Melanerpes lewis	Lewis' woodpecker	None	None	–	–
Sphyrapicus ruber	red–breasted sapsucker	None	None	–	–
Coturnicops noveboracensis	yellow rail	None	None	SSC	–
Laterallus jamaicensis coturniculus	California black rail	None	Threatened	FP	–
Rallus obsoletus obsoletus	California Ridgway's rail	Endangered	Endangered	FP	–
Numenius americanus	long–billed curlew	None	None	WL	–
Asio flammeus	short–eared owl	None	None	SSC	–
Asio otus	long–eared owl	None	None	SSC	–
Athene cunicularia	burrowing owl	None	None	SSC	–
Selasphorus rufus	rufous hummingbird	None	None	–	–
Empidonax traillii	willow flycatcher	None	Endangered	–	–
Animals – Crustaceans					
Branchinecta conservatio	Conservancy fairy shrimp	Endangered	None	–	–
Branchinecta longiantenna	longhorn fairy shrimp	Endangered	None	–	–
Branchinecta lynchi	vernal pool fairy shrimp	Threatened	None	–	–

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Branchinecta mesovallensis	midvalley fairy shrimp	None	None	–	–
Linderiella occidentalis	California linderiella	None	None	–	–
Lepidurus packardi	vernal pool tadpole shrimp	Endangered	None	–	–
Animals – Fish					
Acipenser medirostris pop. 1	green sturgeon – southern DPS	Threatened	None	–	–
Acipenser transmontanus	white sturgeon	None	None	SSC	–
Archoplites interruptus	Sacramento perch	None	None	SSC	–
Lavinia exilicauda exilicauda	Sacramento hitch	None	None	SSC	–
Mylopharodon conocephalus	hardhead	None	None	SSC	
Pogonichthys macrolepidotus	Sacramento splittail	None	None	SSC	
Hysterocarpus traskii traskii	Sacramento–San Joaquin tule perch	None	None	–	
Hypomesus transpacificus	Delta smelt	Threatened	Endangered	–	
Spirinchus thaleichthys	longfin smelt	Candidate	Threatened	–	
Thaleichthys pacificus	eulachon	Threatened	None	–	
Entosphenus tridentatus	Pacific lamprey	None	None	SSC	–
Lampetra ayresii	western river lamprey	None	None	SSC	–
Oncorhynchus kisutch pop. 4	coho salmon – central California coast ESU	Endangered	Endangered	–	–
Oncorhynchus mykiss irideus pop. 11	steelhead – Central Valley DPS	Threatened	None	–	–
Oncorhynchus mykiss irideus pop. 8	steelhead – central California coast DPS	Threatened	None	–	–
Oncorhynchus tshawytscha pop. 11	chinook salmon – Central Valley spring–run ESU	Threatened	Threatened	–	–
Oncorhynchus tshawytscha pop. 13	chinook salmon – Central Valley fall / late fall–run ESU	None	None	SSC	–
Oncorhynchus tshawytscha pop. 7	chinook salmon – Sacramento River winter–run ESU	Endangered	Endangered	–	–
Animals – Insects					
Andrena blennospermatis	Blennosperma vernal pool andrenid bee	None	None	–	–
Perdita scitula antiochensis	Antioch andrenid bee	None	None	–	–
Anthicus antiochensis	Antioch Dunes anthicid beetle	None	None	–	–
Bombus caliginosus	obscure bumble bee	None	None	–	–
Bombus crotchii	Crotch bumble bee	None	None	–	–
Bombus occidentalis	western bumble bee	None	None	–	–
Efferia antiochi	Antioch efferian robberfly	None	None	–	–

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Metapogon hurdi	Hurd's metapogon robberfly	None	None	–	–
Hygrotus curvipes	curved–foot hygrotus diving beetle	None	None	–	–
Sphecodogastra antiochensis	Antioch Dunes halcitid bee	None	None	–	–
Lytta molesta	molestan blister beetle	None	None	–	–
Myrmosula pacifica	Antioch multilid wasp	None	None	–	–
Rhaphiomidas trochilus	Valley mydas fly	None	None	–	–
Danaus plexippus pop. 1	monarch – California overwintering population	Candidate	None	–	–
Euphydryas editha bayensis	Bay checkerspot butterfly	Threatened	None	–	–
Speyeria callippe callippe	callippe silverspot butterfly	Endangered	None	–	–
Apodemia mormo langei	Lange's metalmark butterfly	Endangered	None	–	–
Eucerceris ruficeps	redheaded sphecid wasp	None	None	–	–
Philanthus nasalis	Antioch specid wasp	None	None	0	–
Coelus gracilis	San Joaquin dune beetle	None	None	–	–
Idiostatus middlekauffi	Middlekauff's shieldback katydid	None	None	–	–
Animals – Mammals					
Vulpes macrotis mutica	San Joaquin kit fox	Endangered	Threatened	–	–
Microtus californicus sanpabloensis	San Pablo vole	None	None	SSC	–
Neotoma fuscipes annectens	San Francisco dusky–footed woodrat	None	None	SSC	–
Reithrodontomys raviventris	salt–marsh harvest mouse	Endangered	Endangered	FP	–
Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	None	None	–	–
Perognathus inornatus	San Joaquin pocket mouse	None	None	–	–
Nyctinomops macrotis	big free–tailed bat	None	None	SSC	–
Enhydra lutris nereis	southern sea otter	Threatened	None	FP	–
Taxidea taxus	American badger	None	None	SSC	–
Sorex vagrans halicoetes	salt–marsh wandering shrew	None	None	SSC	–
Antrozous pallidus	pallid bat	None	None	SSC	–
Corynorhinus townsendii	Townsend's big–eared bat	None	None	SSC	–
Lasionycteris noctivagans	silver–haired bat	None	None	–	–
Lasiurus blossevillii	western red bat	None	None	SSC	–
Lasiurus cinereus	hoary bat	None	None	–	–
Myotis ciliolabrum	western small–footed myotis	None	None	–	–
Myotis yumanensis	Yuma myotis	None	None	–	–

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Animals – Mollusks					
Helminthoglypta nickliniana bridgesi	Bridges' coast range shoulderband	None	None	–	–
Pomatiopsis californica	Pacific walker	None	None	–	–
Gonidea angulata	western ridged mussel	None	None	–	–
Animals – Reptiles					
Anniella pulchra	Northern California legless lizard	None	None	SSC	–
Arizona elegans occidentalis	California glossy snake	None	None	SSC	–
Masticophis flagellum ruddocki	San Joaquin coachwhip	None	None	SSC	–
Masticophis lateralis euryxanthus	Alameda whipsnake	Threatened	Threatened	–	–
Emys marmorata	western pond turtle	None	None	SSC	–
Thamnophis gigas	giant gartersnake	Threatened	Threatened		–
Phrynosoma blainvillii	coast horned lizard	None	None	SSC	–
Community – Terrestrial					
Alkali Meadow	Alkali Meadow	None	None	–	–
Alkali Seep	Alkali Seep	None	None	–	–
Cismontane Alkali Marsh	Cismontane Alkali Marsh	None	None	–	–
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	None	None	–	–
Coastal Brackish Marsh	Coastal Brackish Marsh	None	None	–	–
Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	None	None	–	–
Northern Coastal Salt Marsh	Northern Coastal Salt Marsh	None	None	–	–
Northern Maritime Chaparral	Northern Maritime Chaparral	None	None	–	–
Serpentine Bunchgrass	Serpentine Bunchgrass	None	None	–	–
Stabilized Interior Dunes	Stabilized Interior Dunes	None	None	–	–
Valley Needlegrass Grassland	Valley Needlegrass Grassland	None	None	–	–
Valley Sink Scrub	Valley Sink Scrub	None	None	–	–
Plants – Brophytes					
Anomobryum julaceum	slender silver moss	None	None	–	4.2
Grimmia torenii	Toren's grimmia	None	None	–	1B.3
Triquetrella californica	coastal triquetrella	None	None	–	1B.2
Plants – Vascular					
Cicuta maculata var. bolanderi	Bolander's water–hemlock	None	None	–	2B.1
Eryngium jepsonii	Jepson's coyote–thistle	None	None	–	1B.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Eryngium racemosum	Delta button–celery	None	Endangered	–	1B.1
Eryngium spinosepalum	spiny–sepaled button–celery	None	None	–	1B.2
Lilaeopsis masonii	Mason's lilaeopsis	None	Rare	–	1B.1
Sanicula saxatilis	rock sanicle	None	Rare	–	1B.2
Blepharizonia plumosa	big tarplant	None	None	–	1B.1
Centromadia parryi ssp. congdonii	Congdon's tarplant	None	None	–	1B.1
Cirsium andrewsii	Franciscan thistle	None	None	–	1B.2
Eriophyllum jepsonii	Jepson's woolly sunflower	None	None	–	4.3
Helianthella castanea	Diablo helianthella	None	None	–	1B.2
Hesperevax caulescens	hogwallow starfish	None	None	–	4.2
Holocarpha macradenia	Santa Cruz tarplant	Threatened	Endangered	–	1B.1
Isocoma arguta	Carquinez goldenbush	None	None	–	1B.1
Lasthenia conjugens	Contra Costa goldfields	Endangered	None	–	1B.1
Lasthenia ferrisiae	Ferris' goldfields	None	None	–	4.2
Madia radiata	showy golden madia	None	None	–	1B.1
Microseris sylvatica	sylvan microseris	None	None	–	4.2
Monolopia gracilens	woodland woollythreads	None	None	–	1B.2
Senecio aphanactis	chaparral ragwort	None	None	–	2B.2
Symphyotrichum lentum	Suisun Marsh aster	None	None	–	1B.2
Amsinckia grandiflora	large–flowered fiddleneck	Endangered	Endangered	–	1B.1
Amsinckia lunaris	bent–flowered fiddleneck	None	None	–	1B.2
Cryptantha hooveri	Hoover's cryptantha	None	None	–	1A
Arabis blepharophylla	coast rockcress	None	None	–	4.3
Erysimum capitatum var. angustatum	Contra Costa wallflower	Endangered	Endangered	–	1B.1
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	None	None	–	1B.2
Streptanthus hispidus	Mt. Diablo jewelflower	None	None	–	1B.3
Tropidocarpum capparideum	caper–fruited tropidocarpum	None	None	–	1B.1
Campanula exigua	chaparral harebell	None	None	–	1B.2
Viburnum ellipticum	oval–leaved viburnum	None	None	–	2B.3
Spergularia macrotheca var. longistyla	long–styled sand–spurrey	None	None	–	1B.2
Atriplex cordulata var. cordulata	heartscale	None	None	–	1B.2
Atriplex coronata var. coronata	crownscale	None	None	–	4.2
Atriplex depressa	brittlescale	None	None	–	1B.2
Extriplex joaquinana	San Joaquin spearscale	None	None	–	1B.2

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Suaeda californica	California seablite	Endangered	None	–	1B.1
Calystegia purpurata ssp. saxicola	coastal bluff morning–glory	None	None	–	1B.2
Convolvulus simulans	small–flowered morning–glory	None	None	–	4.2
Carex comosa	bristly sedge	None	None	–	2B.1
Eleocharis parvula	small spikerush	None	None	–	4.3
Arctostaphylos auriculata	Mt. Diablo manzanita	None	None	–	1B.3
Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	None	None	–	1B.2
Arctostaphylos pallida	pallid manzanita	Threatened	Endangered	–	1B.1
Astragalus tener var. tener	alkali milk–vetch	None	None	–	1B.2
Hoita strobilina	Loma Prieta hoita	None	None	–	1B.1
Lathyrus jepsonii var. jepsonii	Delta tule pea	None	None	–	1B.2
Lupinus albifrons var. abramsii	Abrams' lupine	None	None	–	3.2
Trifolium hydrophilum	saline clover	None	None	–	1B.2
Phacelia phacelioides	Mt. Diablo phacelia	None	None	–	1B.2
Iris longipetala	coast iris	None	None	–	4.2
Juglans californica	southern California black walnut	None	None	–	4.2
Monardella antonina ssp. antonina	San Antonio Hills monardella	None	None	–	3
Scutellaria galericulata	marsh skullcap	None	None	–	2B.2
Calochortus pulchellus	Mt. Diablo fairy–lantern	None	None	–	1B.2
Calochortus umbellatus	Oakland star–tulip	None	None	–	4.2
Fritillaria agrestis	stinkbells	None	None	–	4.2
Fritillaria liliacea	fragrant fritillary	None	None	–	1B.2
Lilium rubescens	redwood lily	None	None	–	4.2
Hesperolinon breweri	Brewer's western flax	None	None	–	1B.2
Hibiscus lasiocarpos var. occidentalis	woolly rose–mallow	None	None	–	1B.2
Malacothamnus hallii	Hall's bush–mallow	None	None	–	1B.2
Calandrinia breweri	Brewer's calandrinia	None	None	–	4.2
Oenothera deltoides ssp. howellii	Antioch Dunes evening–primrose	Endangered	Endangered	–	1B.1
Piperia michaelii	Michael's rein orchid	None	None	–	4.2
Castilleja ambigua var. ambigua	johnny–nip	None	None	–	4.2
Chloropyron molle ssp. molle	soft salty bird's–beak	Endangered	Rare	–	1B.2
Cordylanthus nidularius	Mt. Diablo bird's–beak	None	Rare	–	1B.1

Scientific Name	Common Name	Federal Status	State Status	CDFW Status	CA Rare Plant Rank
Eschscholzia rhombipetala	diamond–petaled California poppy	None	None	–	1B.1
Meconella oregana	Oregon meconella	None	None	–	1B.1
Puccinellia simplex	California alkali grass	None	None	–	1B.2
Collomia diversifolia	serpentine collomia	None	None	–	4.3
Eriastrum ertterae	Lime Ridge eriastrum	None	Candidate Endangered	–	1B.1
Gilia millefoliata	dark–eyed gilia	None	None	–	1B.2
Leptosiphon ambiguus	serpentine leptosiphon	None	None	–	4.2
Leptosiphon grandiflorus	large–flowered leptosiphon	None	None	–	4.2
Navarretia gowenii	Lime Ridge navarretia	None	None	–	1B.1
Navarretia heterandra	Tehama navarretia	None	None	–	4.3
Navarretia nigelliformis ssp. radians	shining navarretia	None	None	–	1B.2
Eriogonum nudum var. psychicola	Antioch Dunes buckwheat	None	None	–	1B.1
Eriogonum truncatum	Mt. Diablo buckwheat	None	None	–	1B.1
Eriogonum umbellatum var. bahiiforme	bay buckwheat	None	None	–	4.2
Polygonum marinense	Marin knotweed	None	None	–	3.1
Potamogeton zosteriformis	eel–grass pondweed	None	None	–	2B.2
Stuckenia filiformis ssp. alpina	northern slender pondweed	None	None	–	2B.2
Androsace elongata ssp. acuta	California androsace	None	None	–	4.2
Delphinium californicum ssp. interius	Hospital Canyon larkspur	None	None	–	1B.2
Delphinium recurvatum	recurved larkspur	None	None	–	1B.2
Myosurus minimus ssp. apus	little mousetail	None	None	–	3.1
Ranunculus lobbii	Lobb's aquatic buttercup	None	None	–	4.2
Galium andrewsii ssp. gatense	phlox–leaf serpentine bedstraw	None	None	–	4.2
Limosella australis	Delta mudwort	None	None	–	2B.1
Dirca occidentalis	western leatherwood	None	None	–	1B.2

Sources: California Natural Diversity Database BIOS Viewer Tool

Federal Status

Endangered: The classification provided to an animal or plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.

Threatened: The classification provided to an animal or plant which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Proposed Endangered: The classification provided to an animal or plant that is proposed for federal listing as Endangered in the Federal Register under Section 4 of the Endangered Species Act.

Proposed Threatened: The classification provided to an animal or plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.

Candidate: The classification provided to an animal or plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the Federal Endangered and Threatened species list.
None: The plant or animal has no federal status.
Delisted: The plant or animal was previously listed as Endangered or Threatened, but is no longer listed on the Federal Endangered and Threatened species list.

CDFW Status

FP: Fully Protected: This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction.
SSC: Species of Special Concern: To this end, the Department has designated certain vertebrate species as "Species of Special Concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as "Species of Special Concern" is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long–term viability.
WL: Watch List: Species that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

CA Rare Plant Rank

1A: Plants presumed extinct in California and rare/extinct elsewhere
1B.1: Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California
1B.2: Plants rare, threatened, or endangered in California and elsewhere; fairly threatened in California
1B.3: Plants rare, threatened, or endangered in California and elsewhere; not very threatened in California
2A: Plants presumed extirpated in California, but more common elsewhere
2B.1: Plants rare, threatened, or endangered in California, but more common elsewhere; seriously threatened in California
2B.2: Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California
2B.3: Plants rare, threatened, or endangered in California, but more common elsewhere; not very threatened in California
3.1: Plants about which we need more information; seriously threatened in California
3.2: Plants about which we need more information; fairly threatened in California
3.3: Plants about which we need more information; not very threatened in California
4.1: Plants of limited distribution; seriously threatened in California
4.2: Plants of limited distribution; fairly threatened in California
4.3: Plants of limited distribution; not very threatened in California

Appendix F Critical Facilities

F.1 City of Fremont Critical Facilities

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Fire Station 11	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas					X	X			
Fire Station 5	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas									
Fire Station 7; Storage Building	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	0.2% Annual Chance Flood Hazard									New Calaveras
Fire Station 4	Critical Facility	Essential Services	Very Low	V		X	Urban Unzoned	Other Areas									
Fire Station 3	Critical Facility	Essential Services	Very High	VII			Urban Unzoned	0.2% Annual Chance Flood Hazard									
Fire Station 1	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas									
Fire Station 6	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas							X		X

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Fire Station 6, Storage Building	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas							X		X
Fire Station 9	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	0.2% Annual Chance Flood Hazard									
Fire Station 10	Critical Facility	Essential Services	High	0			Urban Unzoned	Other Areas							X		X
Fire Station 10; Storage Building	Critical Facility	Essential Services	High	0			Urban Unzoned	Other Areas							X		X
Fire Station 8	Critical Facility	Essential Services	High	0			Urban Unzoned	Other Areas							X		
Fire Station 2	Critical Facility	Essential Services	Moderate	0			Moderate	Other Areas							X		
Fire Station 7	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	0.2% Annual Chance Flood Hazard									X
Maintenance Center Administration	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas									
Ohlone College - Campus Police; Building 20	Critical Facility	Essential Services	Low	VII		X	High	0.2% Annual Chance									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
								Flood Hazard									
Police Department Fueling Station	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard							X		X
Jail/Evidence Warehouse	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard							X		
Police Department Ancillary Building	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard									
Police Motorcycle Storage	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard									
Police Department	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
FAA Air Route Traffic Control Center	Critical Facility	Essential Services	Moderate	0			Urban Unzoned	Other Areas									
Kaiser Foundation Hospital - Fremont	Critical Facility	Hospital Building	Moderate	0			Urban Unzoned	Other Areas									X
Morris Hyman Critical Care Pavilion	Critical Facility	Hospital Building	Moderate	0			Urban Unzoned	Other Areas									
Tri-City Animal Shelter	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	1% Annual Chance Flood Hazard							X		
District Office	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	0.2% Annual Chance Flood Hazard									
Ohlone College - Administration	Critical Facility	Public Facility	Low	V		X	High	0.2% Annual Chance Flood Hazard									
Fremont Hall of Justice	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		X
Administrative Center Bldg "B"	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Development Center	Critical Facility	Public Facility															
Headquarters	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Fremont Main Library	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Ohlone College - Facilities Department	Critical Facility	Public Facility	Very Low	VII		X	High	Other Areas									
Lila Bringhurst Elementary School (Multi-Purpose Room)	Critical Facility	Public Facility	Moderate	0			High	Other Areas									
Irvington Senior High School (Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Irvington Senior High School (Cafeteria)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Horner Junior High School (Bldg B - Multi-Purpose Room and Kitchen)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Ohlone College - Fremont Campus (Gym)	Critical Facility	Public Facility	Low	X		X	High	0.2% Annual Chance Flood Hazard									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Kennedy Senior High School (Main Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Kennedy Senior High School (Cafeteria)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Ohlone College - Fremont Campus (Cafeteria)	Critical Facility	Public Facility	Low	V		X	High	0.2% Annual Chance Flood Hazard									
Walters Junior High School (Multi-Purpose Room)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Mission San Jose Senior High School (Main Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Mission San Jose Senior High School (Cafeteria)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Hopkins Junior High School (Multi-Purpose Room)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Washington Senior High School (Main Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Washington Senior High School (Auxillary Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Washington Senior High School (Cafeteria)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Centerville Junior High School (Multi-Use Room)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		X
Thornton Junior High School (Gym)	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
American High School (Rotunda)	Critical Facility	Public Facility	High	0			Urban Unzoned	Other Areas									
American High School (Gym)	Critical Facility	Public Facility	High	0			Urban Unzoned	Other Areas									
American High School (Cafeteria)	Critical Facility	Public Facility	High	0			Urban Unzoned	Other Areas									
AGE WELL CENTER AT S. FREMONT	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Warm Springs Community Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Irvington Community Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Age Well Center At Lake Elizabeth	Critical Facility	Public Facility	Low	0			Urban Unzoned	Other Areas									
Centerville Park Community Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Los Cerritos Community Center	Critical Facility	Public Facility	High	0			Urban Unzoned	Other Areas							X		
Downtown Event Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Administrative Center Bldg "A"	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Fire Tactical Training Center	Critical Facility	Public Facility	Moderate	0			High	1% Annual Chance Flood Hazard				X	X	X			X
Fire Tactical Training Tower	Critical Facility	Public Facility	Moderate	0			High	1% Annual Chance Flood Hazard				X	X	X			X
Bay Area Community Services - South County Wellness Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Irvington Dave Vision Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Main Street Village Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Irvington Dave Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Liberty Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Family Resource Center #2	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Family Resource Center #1	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Tri-City Volunteers Food Bank & Mobile Pantry	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Mowry Iii Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		X
Mowry Ii Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Martha Avenue Dental Clinic	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
Corporation Yard	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	0.2% Annual Chance Flood Hazard									X

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
Maintenance Center Equipment Enclosure	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Fueling Station	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Materials Storage Building	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Roll Off Shelter	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Shops	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Vehicle Maintenance	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Wash Rack	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Maintenance Center Warehouse	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
Central Park Service Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		X
Caltrans Fremont Maintenance Station	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas							X		
PG&E - Dixon Landing Substation	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	1% Annual Chance						X			

Location	Critical Facility Category	Critical Facility Type	Liquefaction Susceptibility	Landslide Class	Earthquake Landslide	Local VHFSZ	FHSZ	DFRIM Flood Zone	Sea Level Rise (tidal)	Sea Level Rise (storm)	Sea Level Rise 1 Meter	Sea Level Rise 1 meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	James Turner Dam Inundation	Del Valle Dam Inundation Area	New Calaveras Dam Inundation
								Flood Hazard									
PG&E - Newark District Substation	Critical Facility	Public Facility	Moderate	0			High	Other Areas				X	X	X			
PG&E - Newark Substation	Critical Facility	Public Facility	Moderate	0			High	Other Areas									
PG&E - Fremont Materials Distribution Facility	Critical Facility	Public Facility	Moderate	0			High	1% Annual Chance Flood Hazard									
PG&E - Fremont Service Center	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
PG&E - Irvington Gas Terminal	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									
PG&E - Fremont Substation	Critical Facility	Public Facility	Low	VII			Urban Unzoned	Other Areas									
PG&E - Dumbarton Substation	Critical Facility	Public Facility	High	0			Urban Unzoned	Other Areas									X
PG&E - Sunol Substation	Critical Facility	Public Facility	Moderate	IX	X		Moderate	Other Areas							X		X
PG&E - Jarvis Substation	Critical Facility	Public Facility	Moderate	0			Urban Unzoned	Other Areas									

Source: Cal OES/DSOD, CoSMoS, CGS, USGS/CGS, FEMA 12/21/2018 DFIRM, CAL FIRE, City of Fremont

F.2 City of Newark Critical Facilities

Object Id	Critical Facility Category	Critical Facility Type	Name	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
44	Essential Services	Bridge	Lake Shore Park Bridge			Moderate	0	Urban Unzoned	Other Areas	X	X
2	Essential Services	City Facility	Silliman Center			Moderate	0	High	Other Areas		
13	Essential Services	City Facility	Clark W. Redeker Senior Center			Moderate	0	Urban Unzoned	Other Areas		
14	Essential Services	City Facility	Newark Service Center			Moderate	0	Urban Unzoned	Other Areas		
22	Essential Services	City Facility	Newark Pavilion			Moderate	0	Urban Unzoned	Other Areas		
27	Essential Services	City Facility	City Hall			Moderate	0	Urban Unzoned	Other Areas		
29	Essential Services	City Facility	Newark Library			Moderate	0	Urban Unzoned	Other Areas		X
39	Essential Services	City Facility	Newark Community Center			Moderate	0	Urban Unzoned	Other Areas		
8	Essential Services	Fire Station	Fire Station #27			Moderate	0	Urban Unzoned	Other Areas		
21	Essential Services	Fire Station	Fire Station #28			Moderate	0	Urban Unzoned	Other Areas		
33	Essential Services	Fire Station	Fire Station #29			Moderate	0	Urban Unzoned	Other Areas		
7	Essential Services	Hospital	AFC Urgent Care Newark			Moderate	0	Urban Unzoned	Other Areas		
24	Essential Services	Hospital	Washington Township Medical			Moderate	0	Urban Unzoned	Other Areas		

Object Id	Critical Facility Category	Critical Facility Type	Name	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
26	Essential Services	Hospital	Newark Health Center			Moderate	0	Urban Unzoned	Other Areas		
25	Essential Services	Police Station	Newark Police Station			Moderate	0	Urban Unzoned	Other Areas	X	X
9	Hazardous Materials	Chemical Facility	Cargill Salt			Moderate	0	Urban Unzoned	Other Areas		
15	Hazardous Materials	Chemical Facility	US Air Supply			Moderate	0	Urban Unzoned	Other Areas		
17	Hazardous Materials	Chemical Facility	Matheson Tri-Gas			Moderate	0	Urban Unzoned	Other Areas		
6	Hazardous Materials	Distribution Center	FedEx Ground Facility	X	X	Moderate	0	Urban Unzoned	Other Areas		
16	Hazardous Materials	Gas Facility	Ferrellgas			Moderate	0	Urban Unzoned	Other Areas	X	X
5	Hazardous Materials	Paper Facility	Economic Packing & Clean Room Supplies		X	Moderate	0	Urban Unzoned	0.2% Annual Chance Flood Hazard		
3	High Risk Occupancy	Day Care	City Day Care - Silliman Center			Moderate	0	High	Other Areas		
12	High Risk Occupancy	Day Care	Newark Challenger School			Moderate	0	Urban Unzoned	0.2% Annual Chance Flood Hazard		
18	High Risk Occupancy	Day Care	Kidango Schilling Center		X	Moderate	0	Urban Unzoned	Other Areas		X
34	High Risk Occupancy	Day Care	Newark Challenger School			High	0	Urban Unzoned	Other Areas		

Object Id	Critical Facility Category	Critical Facility Type	Name	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
36	High Risk Occupancy	Day Care	Bumblebee Playspace			High	0	Urban Unzoned	Other Areas		
38	High Risk Occupancy	Day Care	City Day Care - Newark Community Center			Moderate	0	Urban Unzoned	Other Areas		
42	High Risk Occupancy	Day Care	Montessori School			Moderate	0	Urban Unzoned	Other Areas		
1	High Risk Occupancy	School	Ohlone College			Moderate	0	High	0.2% Annual Chance Flood Hazard		New Calaveras
4	High Risk Occupancy	School	STELLER ACADEMY FOR DYSLEXICS			Moderate	0	High	0.2% Annual Chance Flood Hazard	X	X
10	High Risk Occupancy	School	Newark Memorial High School			Moderate	0	Urban Unzoned	Other Areas		
11	High Risk Occupancy	School	Challenger School Newark			Moderate	0	Urban Unzoned	0.2% Annual Chance Flood Hazard		
19	High Risk Occupancy	School	SCHILLING ELEMENTARY SCHOOL		X	Moderate	0	Urban Unzoned	Other Areas		
20	High Risk Occupancy	School	Birch Grove Primary School			Moderate	0	Urban Unzoned	Other Areas		

Object Id	Critical Facility Category	Critical Facility Type	Name	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
23	High Risk Occupancy	School	BIRCH GROVE INTERMEDIATE SCHOOL			Moderate	0	Urban Unzoned	Other Areas		
28	High Risk Occupancy	School	Lincoln Elementary School		X	Moderate	0	Urban Unzoned	Other Areas		
30	High Risk Occupancy	School	ST. EDWARDS CATHOLIC			Moderate	0	Urban Unzoned	Other Areas		
31	High Risk Occupancy	School	Coyote Hills Elementary School			Moderate	0	Urban Unzoned	Other Areas		
32	High Risk Occupancy	School	Newark Junior High School			Moderate	0	Urban Unzoned	Other Areas		
35	High Risk Occupancy	School	Challenger School Ardenwood			High	0	Urban Unzoned	Other Areas		
37	High Risk Occupancy	School	ADULT CAREER AND EDUCATION			Moderate	0	Urban Unzoned	Other Areas		
40	High Risk Occupancy	School	Crosspoint Independent Study			Moderate	0	Urban Unzoned	Other Areas		
41	High Risk Occupancy	School	Bridgepoint High School			Moderate	0	Urban Unzoned	Other Areas		
43	High Risk Occupancy	School	Kennedy Elementary School			Moderate	0	Urban Unzoned	Other Areas	James H Turner	New Calaveras

Source: Cal OES/DSOD, CoSMoS, CGS, USGS/CGS, FEMA 12/21/2018 DFIRM, CAL FIRE, City of Newark

F.3 City of Union City Critical Facilities

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
2	School	High Risk Occupancy Infrastructure	Delaine Eastin Elementary				X	High	0	Urban Unzoned	1% Annual Chance Flood Hazard			
3	School	High Risk Occupancy Infrastructure	Pioneer Elementary		X	X	X	High	0	Urban Unzoned	Other Areas			
5	City Hall/Police Station	Essential Services Infrastructure	City Hall and Police Station					Moderate	0	Urban Unzoned	Other Areas	X	X	
6	Center/Facility	High Risk Occupancy Infrastructure	Ralph and Mary Ruggieri Senior Center					Moderate	0	Urban Unzoned	Other Areas	X	X	
9	Center/Facility	High Risk Occupancy Infrastructure	Kennedy Center					Moderate	0	Urban Unzoned	Other Areas			
10	Center/Facility	High Risk Occupancy Infrastructure	Holly Community Center			X	X	Moderate	0	Urban Unzoned	Other Areas		X	
12	School	High Risk Occupancy Infrastructure	James Logan High					Moderate	0	Urban Unzoned	Other Areas			
13	School	High Risk Occupancy Infrastructure	Cesar Chavez Middle					Very High	0	Urban Unzoned	Other Areas	X	X	

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
15	School	High Risk Occupancy Infrastructure	Alvarado Middle		X	X	X	High	0	Urban Unzoned	Other Areas	X	X	
17	School	High Risk Occupancy Infrastructure	New Haven Corp Yard			X	X	High	0	Urban Unzoned	Other Areas		NX	
18	School	High Risk Occupancy Infrastructure	Searles Elementary					Moderate	0	Urban Unzoned	Other Areas			
19	School	High Risk Occupancy Infrastructure	Alvarado Elementary		X	X	X	Very High	0	Urban Unzoned	Other Areas		X	
21	School	High Risk Occupancy Infrastructure	Kitayama Elementary					Moderate	0	Urban Unzoned	Other Areas	X	X	
22	Center/Facility	High Risk Occupancy Infrastructure	Decoto Resource Center					Moderate	0	Urban Unzoned	Other Areas			
23	Center/Facility	High Risk Occupancy Infrastructure	Centro de Servicios					Moderate	0	Urban Unzoned	Other Areas			
24	School	High Risk Occupancy Infrastructure	New Haven Adult					Moderate	0	Urban Unzoned	Other Areas			
25	Police Station	Essential Services Infrastructure	Union Landing Police Substation				X	Very High	0	Urban Unzoned	Other Areas			
26	School	High Risk Occupancy Infrastructure	Guy Emanuele Elementary					Moderate	0	High	Other Areas			

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
27	School	High Risk Occupancy Infrastructure	Cornerstone College					Moderate	0	Urban Unzoned	Other Areas			
28	School	High Risk Occupancy Infrastructure	Mission Hills Middle					Moderate	0	Urban Unzoned	Other Areas			
31	Production Facility	Hazardous Materials Infrastructure	AK Scientific		X		X	Moderate	No Data	Urban Unzoned	1% Annual Chance Flood Hazard	X	X	X
32	Production Facility	Hazardous Materials Infrastructure	American Licorice Co.					Moderate	0	Urban Unzoned	Other Areas			
33	Storage Facility	Hazardous Materials Infrastructure	Cold Storage					Moderate	0	Urban Unzoned	Other Areas			
34	Production Facility	Hazardous Materials Infrastructure	Electrochem Solutions Inc.					Moderate	0	Urban Unzoned	Other Areas			
35	Production Facility	Hazardous Materials Infrastructure	Emerald Packaging Inc.					Moderate	0	Urban Unzoned	Other Areas			
36	Production Facility	Hazardous Materials Infrastructure	Enersys				X	Moderate	0	Urban Unzoned	Other Areas			
37	Production Facility	Hazardous Materials Infrastructure	GCM Medical and OEM Division Inc.					Moderate	0	Urban Unzoned	Other Areas			

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
38	Logistics Facility	Hazardous Materials Infrastructure	Penske Logistic LLC					Moderate	0	Urban Unzoned	Other Areas			
39	Storage Facility	Hazardous Materials Infrastructure	Rangsons Inc. DBA Excelsior Incense					Moderate	0	Urban Unzoned	Other Areas			
40	Logistics Facility	Hazardous Materials Infrastructure	Rich Products					Moderate	0	Urban Unzoned	Other Areas			
41	Logistics Facility	Hazardous Materials Infrastructure	Southern Glazers Wine & Spirits Atlantic					Moderate	0	Urban Unzoned	Other Areas			
42	Logistics Facility	Hazardous Materials Infrastructure	Southern Glazers Wine & Spirits Dowe					Moderate	0	Urban Unzoned	Other Areas			
43	Storage Facility	Hazardous Materials Infrastructure	Union Sanitary District Treatment Plant	X	X	X	X	Very High	0	Urban Unzoned	1% Annual Chance Flood Hazard		X	X
44	Production Facility	Hazardous Materials Infrastructure	United States Pipe & Foundry Company LLC					Moderate	0	Urban Unzoned	Other Areas			

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
45	Logistics Facility	Hazardous Materials Infrastructure	Weber Logistics	X	X	X	X	Very High	0	Urban Unzoned	1% Annual Chance Flood Hazard			
46	Production Facility	Hazardous Materials Infrastructure	Tenaya Therapeutics Inc.					Moderate	0	Urban Unzoned	Other Areas			
47	Police Station	Essential Services Infrastructure	Union City Police Station					Moderate	0	Urban Unzoned	Other Areas			
48	Police Station	Essential Services Infrastructure	Union City Police Resource Center		X	X	X	Moderate	0	Urban Unzoned	Other Areas	X	X	
49	Fire Station	Essential Services Infrastructure	Alameda County Fire Dept. Station #31					Moderate	0	Urban Unzoned	Other Areas			
50	Fire Station	Essential Services Infrastructure	Alameda County Fire Dept. Station #32		X	X	X	High	0	Urban Unzoned	Other Areas	X		
51	Fire Station	Essential Services Infrastructure	Alameda County Fire Dept. Station #33					Moderate	0	Urban Unzoned	Other Areas			
52	EMS Station	Essential Services Infrastructure	EMS building				X	High	0	Urban Unzoned	Other Areas			

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
53	City Facility	Essential Services Infrastructure	Union City Library					Moderate	0	Urban Unzoned	Other Areas	X		
54	City Facility	Essential Services Infrastructure	Mark Green Sports Center	X	X	X	X	High	0	Urban Unzoned	Other Areas	X		
55	City Facility	Essential Services Infrastructure	Union City Corporation Yard					Moderate	0	Urban Unzoned	Other Areas	X		
56	School	High Risk Occupancy Infrastructure	Itliong-Vera Cruz Middle School		X	X	X	High	0	Urban Unzoned	Other Areas	X		
57	School	High Risk Occupancy Infrastructure	Decoto School for Independent Study					Moderate	0	Urban Unzoned	Other Areas			
58	Day Care Center	High Risk Occupancy Infrastructure	Little People's Preschool & Daycare					Moderate	0	Urban Unzoned	Other Areas			
59	Day Care Center	High Risk Occupancy Infrastructure	Kennedy Preschool					Moderate	0	Urban Unzoned	Other Areas			
60	Day Care Center	High Risk Occupancy Infrastructure	Kidango Searles Center					Moderate	0	Urban Unzoned	Other Areas			
61	Day Care Center	High Risk Occupancy Infrastructure	Kidango Logan Center					Moderate	0	Urban Unzoned	Other Areas			

Object ID	Critical Facility Type	Critical Facility Category	Name	Sea Level Rise 1 Meter (tidal)	Sea Level Rise 21meter (storm)	Sea Level Rise 2 Meter (tidal)	Sea Level Rise 2 meter (storm)	Liquefaction Zone	Landslide Class	FHSZ	DFIRM Flood Zone	James Turner Inundation	New Calaveras Inundation	Tsunami Inundation
62	Day Care Center	High Risk Occupancy Infrastructure	Genius Kids					Moderate	0	Urban Unzoned	Other Areas		X	
63	Day Care Center	High Risk Occupancy Infrastructure	Safari Kid					High	0	Urban Unzoned	Other Areas	X	X	
64	Day Care Center	High Risk Occupancy Infrastructure	Adventure Montessori Academy			X	X	Moderate	0	Urban Unzoned	Other Areas	X		
65	Day Care Center	High Risk Occupancy Infrastructure	Holly Community Center Day Care		X	X	X	High	0	Urban Unzoned	Other Areas	X		
66	Senior Care Facility	High Risk Occupancy Infrastructure	Acacia Creek Retierment Community					Very Low	0	High	Other Areas			
67	Senior Care Facility	High Risk Occupancy Infrastructure	Pacifica Senior Living					Moderate	0	Urban Unzoned	Other Areas	X		
68	Senior Care Facility	High Risk Occupancy Infrastructure	Pavilion at Masonic Homes					Very Low	0	High	Other Areas			

Source: Cal OES/DSOD, CoSMoS, CGS, USGS/CGS, FEMA 12/21/2018 DFIRM, CAL FIRE, City of Union City

F.4 Alameda County Water District Critical Facilities

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
1	1001 Whipple Road	Whipple Well					Moderate	0	Urban Unzoned	Zone X (unshaded)				
2	110 Mayhews Road	Mayhew Booster Station					Moderate	0	High	Zone X (Shaded)				
3	1111 Mowry Avenue	Blending Facility					Moderate	0	Urban Unzoned	Zone X (unshaded)	X	X		
		Manual Water Softening					Moderate	0	Urban Unzoned	Zone X (unshaded)	X	X		
4	1250 Levy Road	Rubber Dam #1 Bladder					High	0	Urban Unzoned	Zone X (unshaded)	X	X		
5	1385 Mowry Avenue	Mowry Well Field					Moderate	0	Urban Unzoned	Zone X (unshaded)	X	X		
6	150 Levy Road	Rubber Dam #3 Bladder					High	0	Urban Unzoned	Zone X (unshaded)	X	X	X	
7	2942 Middlefield Avenue	Middlefield Booster Pump Station					Low	0	Urban Unzoned	Zone X (unshaded)				
		Middlefield Reservoir					Low	0	Urban Unzoned	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
8	36835 Darvon Street	Darvon Well					Moderate	0	Urban Unzoned	Zone X (unshaded)				
9	37496 Willowood Drive	Willowood Well					Moderate	0	Urban Unzoned	Zone X (unshaded)	X	X		
10	37500 Cedar Blvd	Cedar Well					Highe	0	Urban Unzoned	Zone X (unshaded)				
11	37912 Canyon Heights Drive	Canyon Heights					Very Low	VII	High	Zone X (unshaded)				
12	38201 Canyon Heights Drive	Canyon Heights					Moderate	0	High	Zone X (unshaded)		X		
13	39198 Farwell Drive	Farwell Well					Moderate	0	Urban Unzoned	Zone X (unshaded)		X		
14	42436 Mission Blvd	Administration Building					Moderate	0	High	Zone X (unshaded)				
		Chemical Building					Moderate	VII	High	Zone X (unshaded)				
		Dewatering Facility					Moderate	VII	High	Zone X (unshaded)				
		Gravity Thickeners					Moderate	VII	High	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
		Hydro Electric-Pumps					Moderate	VII	High	Zone X (unshaded)				
		Ozone Generation					Moderate	VII	High	Zone X (unshaded)				
		Sedimentation Basins					Moderate	VII	High	Zone X (unshaded)				
		Trailer					Moderate	VII	High	Zone X (unshaded)				
		Yard					Moderate	VII	High	Zone X (unshaded)				
15	42500 Vargas Road	Filter Chemical Building					Very Low	IX	High	Zone X (unshaded)				
		Main Control Building					Very Low	V	High	Zone X (unshaded)				
		Mission San Jose					Very Low	V	High	Zone X (unshaded)				
		Sedimentation Basin					Very Low	V	High	Zone X (unshaded)				
		Yard					Very Low	VIII	High	Zone X (unshaded)				
		Whitfield Booster Station					Very Low	V	High	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
16	42650 Paseo Padre Parkway	Whitfield Booster Zone 2 Station					Low	0	Urban Unzoned	Zone X (unshaded)				
		Whitfield Reservoir					Low	0	Urban Unzoned	Zone X (unshaded)				
		Storage Buildings					Low	0	Urban Unzoned	Zone X (unshaded)				
17	42955 Palm Avenue	Lowry Well					Low	0	Urban Unzoned	Zone X (unshaded)				
18	4300 Lowry Road	Garage					Highe	0	Urban Unzoned	Zone X (unshaded)				
19	43885 S Grimmer Blvd	Headquarters					Moderate	0	Urban Unzoned	Zone X (unshaded)				
		Material Carport					Moderate	0	Urban Unzoned	Zone X (unshaded)				
		Shops					Moderate	0	Urban Unzoned	Zone X (unshaded)				
		Vehicle Carport					Moderate	0	Urban Unzoned	Zone X (unshaded)				
		Warehouse					Moderate	0	Urban Unzoned	Zone X (unshaded)				
		Yard					Moderate	0	Urban Unzoned	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
		Paseo Padre Parkway Booster Station					Moderate	0	Urban Unzoned	Zone X (unshaded)				
20	44116 Paseo Padre Parkway	Vineyard Heights Booster Station					Moderate	V	Moderate	Zone X (unshaded)				
21	45476 Antelope Drive	Rancho Higuera Booster Station					Very Low	V	Moderate	Zone X (unshaded)				
22	47350 Rancho Higuera Road	Avalon Heights Booster Station					Moderate	VII	High	Zone X (unshaded)				
23	48441 Avalon Heights Terrace	Scoot Creek Booster Station					Very Low	VIII	High	Zone X (unshaded)				
24	48830 Green Valley Road	Alameda Reservoir					Very Low	VIII	High	Zone X (unshaded)				
25	570 Shoshone Court	Bellflower Well					Moderate	0	Urban Unzoned	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
26	5804 Bellflower Drive	Curtner Road Booster Station					Moderate	0	Urban Unzoned	Zone X (unshaded)				
27	600 Curtner Road	Desalination Facility Control Room					Moderate	IX	Urban Unzoned	Zone X (unshaded)				
28	6833 Redeker Place	Washington Booster Station					Moderate	0	Urban Unzoned	Zone X (unshaded)				
29	902 Washington Blvd	Fish Screen					Low	0	Urban Unzoned	Zone X (unshaded)				
30	Alameda Creek Flood Control Channel	Appian					High	0	Urban Unzoned	Zone X (unshaded)	X	X	X	
31	Appian Way	Ohlone					Very Low	V	High	Zone X (unshaded)				
32	Dry Creek Trail	Decoto Reservoir					Very Low	VII	High	Zone X (unshaded)				
33	Florence Street	VII Booster Station					Very Low	0	High	Zone X (unshaded)				X
		Vineyard Heights					Very Low	0	High	Zone X (unshaded)				X
34	Grapevine Terrace	Mayhew Reservoir					Very Low	X	High	Zone X (unshaded)				

Property Number	Property Location / Name	Asset Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation	Del Valle Dam Inundation Area	Decoto Dam Inundation Area
35	Hunter Terrace	Paterson Reservoir					Very Low	X	High	Zone X (unshaded)				
36	Paseo Padre Parkway	Nursery Well	X				Very Low	V	High	Zone X (unshaded)				
37	Riviera Drive	Hidden Valley					Moderate	0	Urban Unzoned	Zone X (unshaded)	X	X		
38	Saguare Terrace	Avalon					Very Low	VIII	High	Zone X (unshaded)				
39	St Francis Terrace	Site A					Very Low	IX	High	Zone X (unshaded)				
40	Station Road			X	X	X	Moderate	0	High	Zone X (Shaded)				

Source: Cal OES/DSOD, CoSMoS, CGS, USGS/CGS, FEMA 12/21/2018 DFIRM, CAL FIRE, ACWD

F.5 Union Sanitary District Critical Facilities

Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
Fremont LS				X	X	Very High	0	Urban Unzoned	X Protected by Levee		
Fremont LS				X	X	Very High	0	Urban Unzoned	X Protected by Levee		
Fremont LS				X	X	Very High	0	Urban Unzoned	X Protected by Levee		
Irvington PS	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Irvington PS	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Irvington PS	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Irvington SB	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Irvington SB	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Irvington SB	X			X	X	Moderate	0	Urban Unzoned	Zone AE		
Boyce LS						Moderate	0	Urban Unzoned	Zone AO		
Boyce LS						Moderate	0	Urban Unzoned	Zone AO		
Boyce LS						Moderate	0	Urban Unzoned	Zone AO		
Cherry PS				X	X	Moderate	0	High	Zone AE		
Cherry PS				X	X	Moderate	0	High	Zone AE		
Cherry PS				X	X	Moderate	0	High	Zone AE		
Newark PS			X	X	X	Moderate	0	Urban Unzoned	Zone AE		
Newark PS			X	X	X	Moderate	0	Urban Unzoned	Zone AE		
Newark PS			X	X	X	Moderate	0	Urban Unzoned	Zone AE		

Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
Paseo Padre LS	X			X	X	Moderate	0	Non-Wildland/Non-Urban	Zone X (unshaded)	X	X
Paseo Padre LS	X			X	X	Moderate	0	Non-Wildland/Non-Urban	Zone X (unshaded)	X	X
Paseo Padre LS	X			X	X	Moderate	0	Non-Wildland/Non-Urban	Zone X (unshaded)	X	X
Alvarado Treatment Plant		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		X
Alvarado Treatment Plant		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		X
Alvarado Treatment Plant		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		New CX
East Bay Dischargers Pump Station		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		X
East Bay Dischargers Pump Station		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		X

Name	Tsunami Coastal Evacuation Zone	1 Meter (3.1 feet) of Sea-level Rise: 0-year (tidal) scenario	1 Meter (3.1 feet) of Sea-level Rise: 0-year (storm) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (tidal) scenario	2 Meter (6.2 feet) of Sea-level Rise: 0-year (storm) scenario	Liquefaction Susceptibility	Landslide Hazard Class	FHSZ	DFIRM Flood Zone	James Turner Dam Inundation	New Calaveras Dam Inundation
East Bay Dischargers Pump Station		X	X	X	X	Moderate	0	Urban Unzoned	Zone AE		X

Source: Cal OES/DSOD, CoSMoS, CGS, USGS/CGS, FEMA 12/21/2018 DFIRM, CAL FIRE, USD

Appendix G Survey Results

Survey results are included on the following pages.

Tri-City Multi-jurisdictional Local Hazard Mitigation Plan - Public Outreach Survey

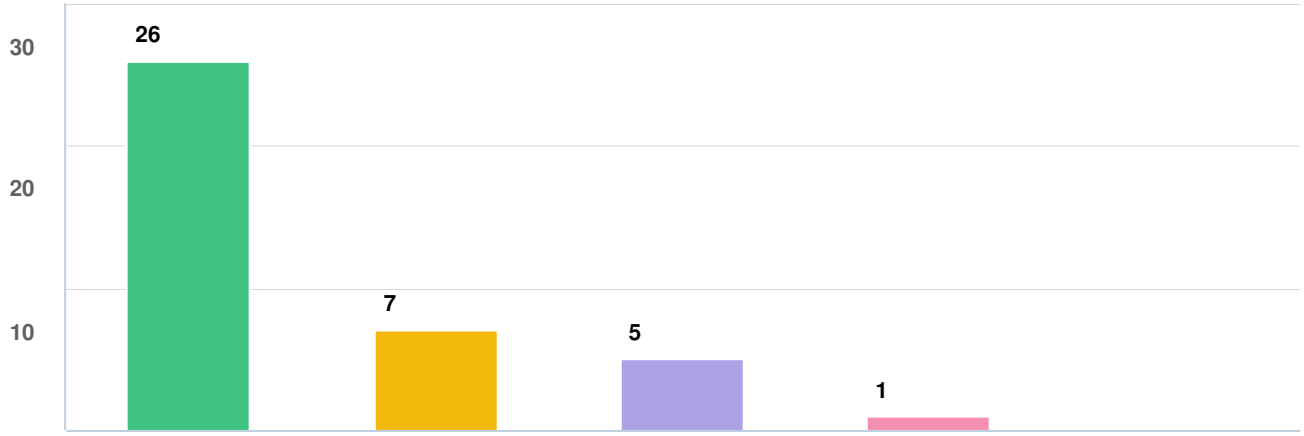
SURVEY RESPONSE REPORT
14 August 2023 - 25 January 2024

PROJECT NAME:
Tri-City Multi-jurisdictional Local Hazard Mitigation Plan

BANG THE TABLE engagementHQ

SURVEY QUESTIONS

Q1 Do you live in the Tri-City area?

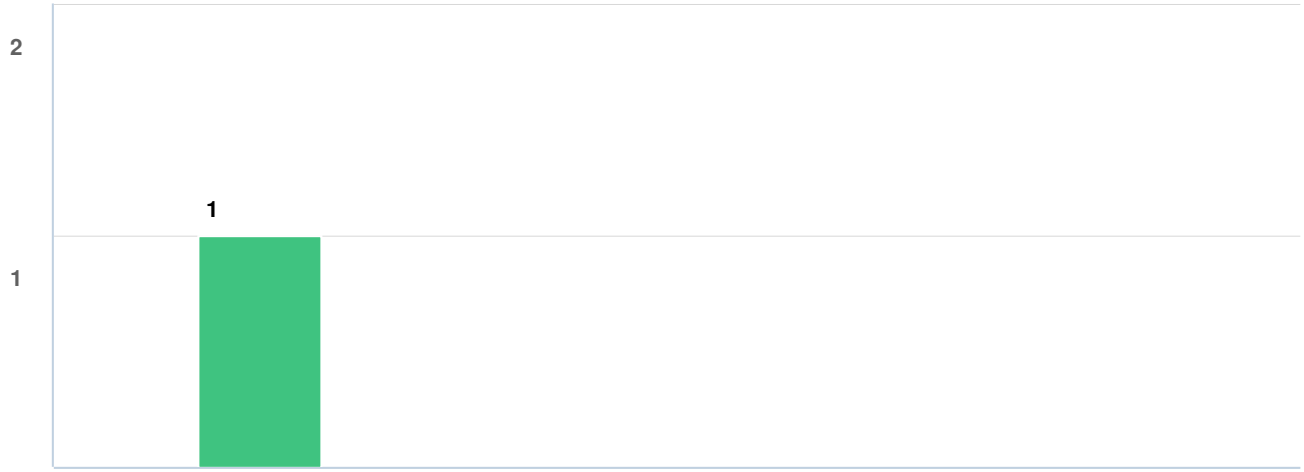


Question options

Yes, I am a Fremont resident. Yes, I am a Newark resident. Yes, I am a Union City resident.
No, but I work in the Tri-City area. No, I don't live or work in the Tri-City area.

Optional question (39 response(s), 0 skipped)
Question type: Checkbox Question

Q2 What city do you work in?

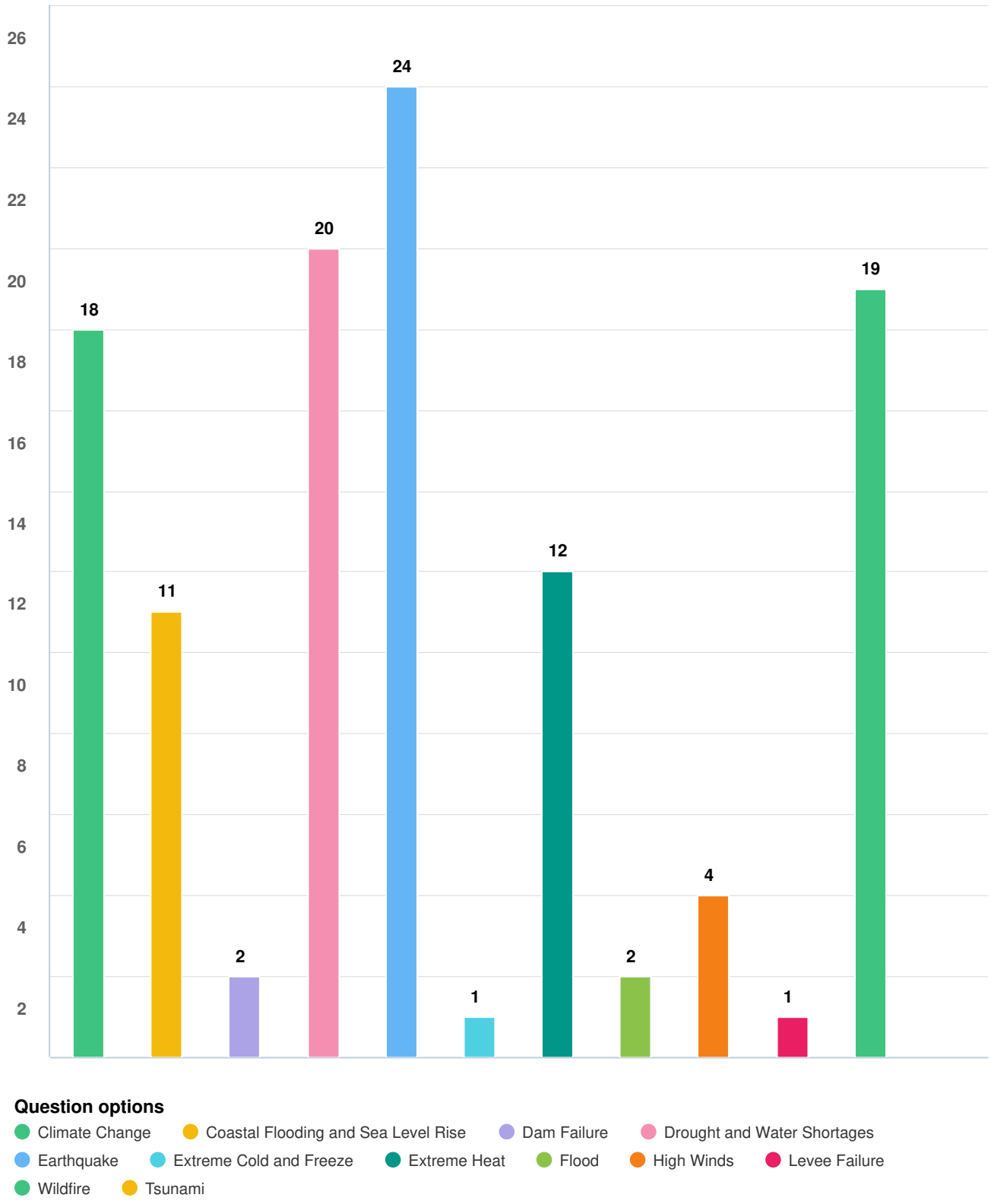


Question options

I work in Newark. I work in Fremont. I work in Union City.

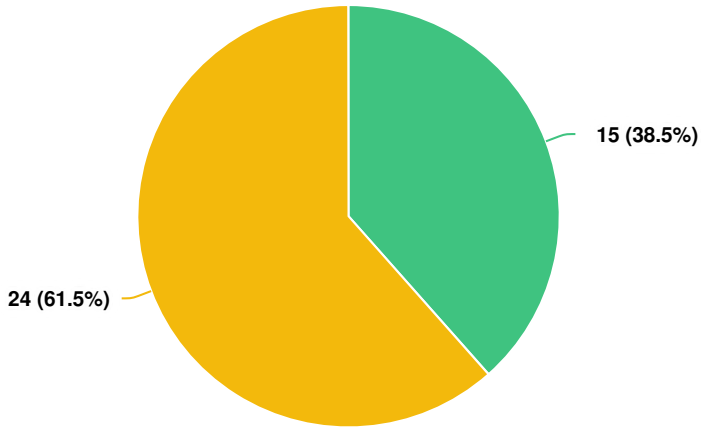
Optional question (1 response(s), 38 skipped)
Question type: Checkbox Question

Q3 Of the following hazards, please select those that you think pose the greatest risk to the Tri-City area. Select up to thr...



Optional question (39 response(s), 0 skipped)
Question type: Checkbox Question

Q4 Have you experienced a natural disaster (wildfire, high winds, flood, earthquake, etc.) in the Tri-City Area?



Question options

Yes No

Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q5 Please describe the disaster, including approximate date and impacts.

Anonymous 8/18/2023 05:40 PM	Heavy rains caused me flows g from the hills de smashing my fence and sending me into my back yard
Anonymous 8/18/2023 11:40 PM	loma prieta
Anonymous 8/19/2023 12:40 PM	Wildfire near our cities
Anonymous 8/20/2023 12:53 PM	Our house doesn't have air conditioning so the heatwave last year was brutal
Anonymous 8/20/2023 08:50 PM	Earthquake. Maybe several years ago. No significant/mentionable impact.
Anonymous 8/22/2023 06:26 PM	Back in 1970’s Niles hill fires
Anonymous 8/25/2023 04:23 PM	The Loma Prieta Earthquake. Helped elderly people get out of the pool at the gym.
Anonymous 8/26/2023 10:07 AM	The Loma Prieta Quake
Anonymous 9/02/2023 09:50 AM	1989 Loma Prieta Earthquake. Huge complex fire in the Alameda Creek Watershed a few years back.
Anonymous 9/21/2023 10:04 AM	Earthquakes past 20 years. Increased heat past couple years
Anonymous 12/04/2023 11:43 AM	Severe flooding in Newark, approximately dec 2022
 12/14/2023 07:18 PM	Loma Preita earthquake

Anonymous 1/22/2024 08:01 PM	Winter 2023 Flooding in Newark Sanctuary Villiage, damages to the foundation.

Optional question (13 response(s), 26 skipped)
Question type: Essay Question

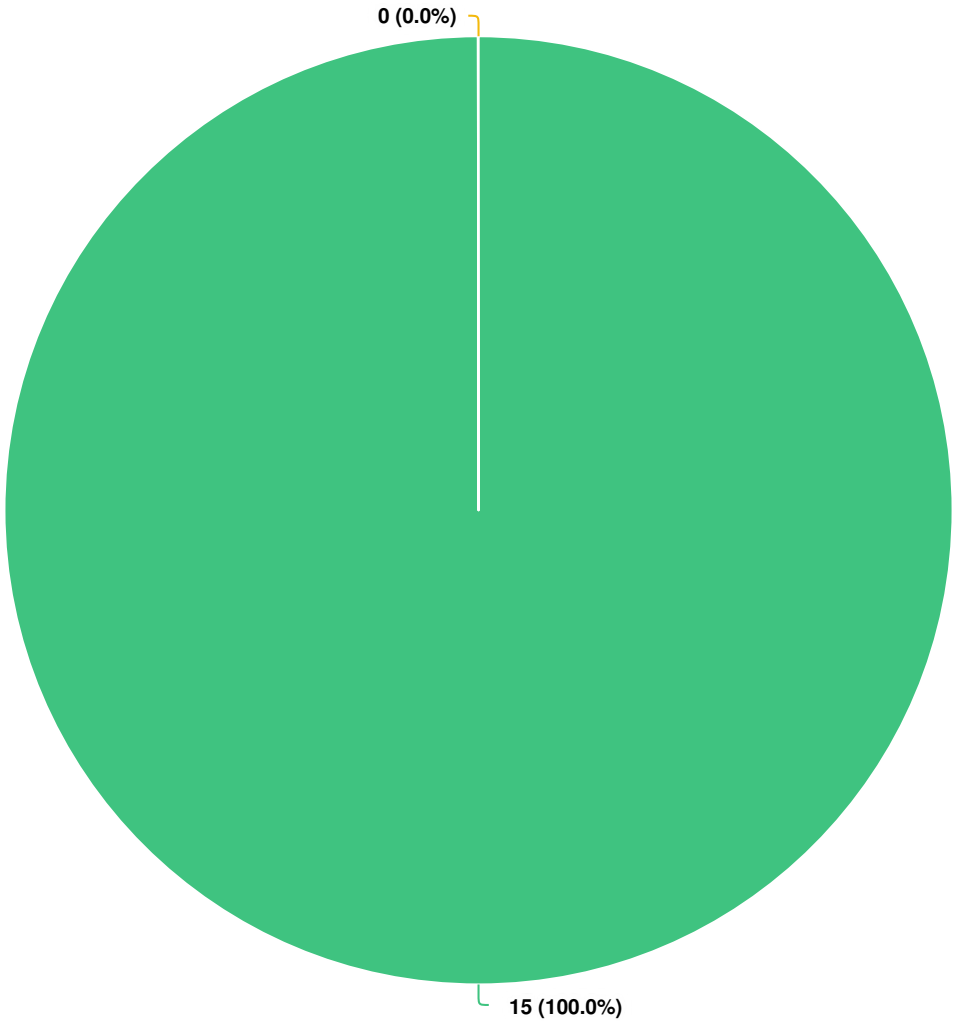
Q6 What steps could have been taken before the disaster occurred to prevent or reduce the impacts?

Anonymous 8/18/2023 05:40 PM	Eat Bag Parks could have placed plastic over the flows
Anonymous 8/18/2023 11:40 PM	provisions in car
Anonymous 8/19/2023 12:40 PM	Better communication of resources
Anonymous 8/20/2023 12:53 PM	Nothing, we're broke.
Anonymous 8/20/2023 08:50 PM	No impact.
Anonymous 8/25/2023 04:23 PM	None.
Anonymous 8/26/2023 10:07 AM	City of Fremont should have developed own earthquake retrofit program & include all homes with slab foundation - these have been ignored and yet many homes are built that way.
Anonymous 9/02/2023 09:50 AM	1. Water and sewer pipes need to be seismically upgraded. 2. Better management of our watershed to reduce ground fuel and create fire barriers.
Anonymous 9/21/2023 10:04 AM	Heat - Plant more trees and reduce heat island effect Earthquake - my be do an outreach/email for how will the mass communication be for the shelter etc. and educate residents to prepare kits etc.

Anonymous 12/04/2023 11:43 AM	Better drainage systems. We live so close to the wetlands, all of the water should flow easily to the bay.
Anonymous 1/22/2024 08:01 PM	Don’t allow homes to be build in the flood zone. Building ontop of wetlands causes man made disasters and destroys the natural protection of storm surges

Optional question (11 response(s), 28 skipped)
Question type: Essay Question

Q7 Would you like to describe another natural disaster you experienced?

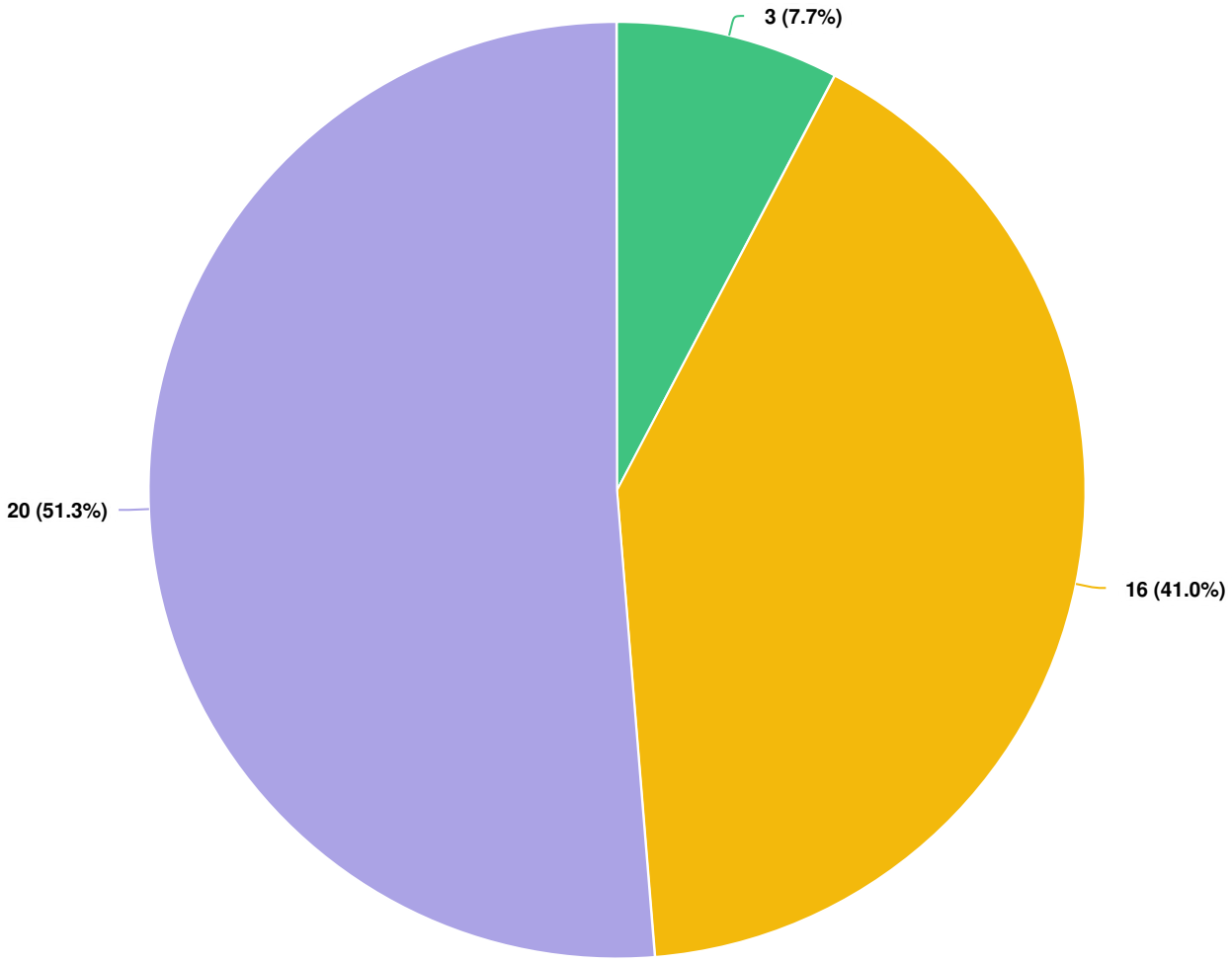


Question options

No Yes

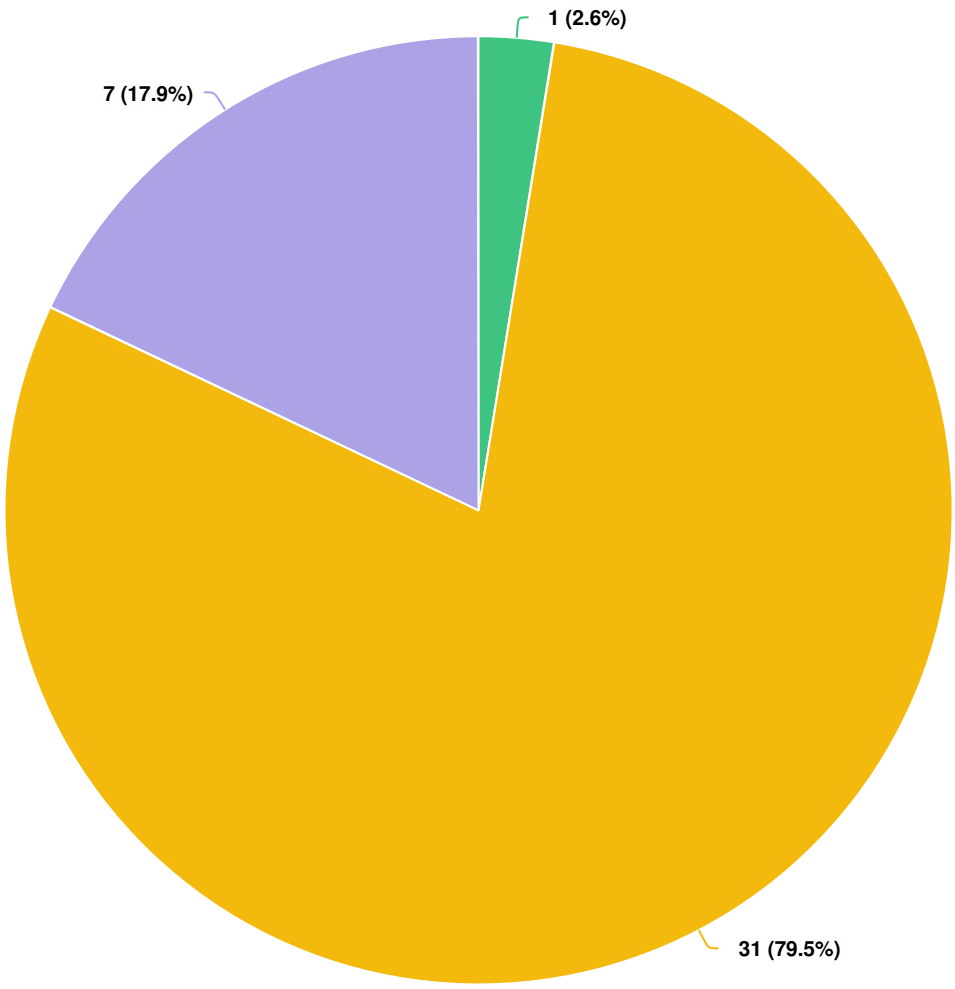
Optional question (15 response(s), 24 skipped)
Question type: Radio Button Question

Q13 Is your Tri-City area home or business located in a FEMA designated floodplain?



Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q14 Do you have flood insurance?

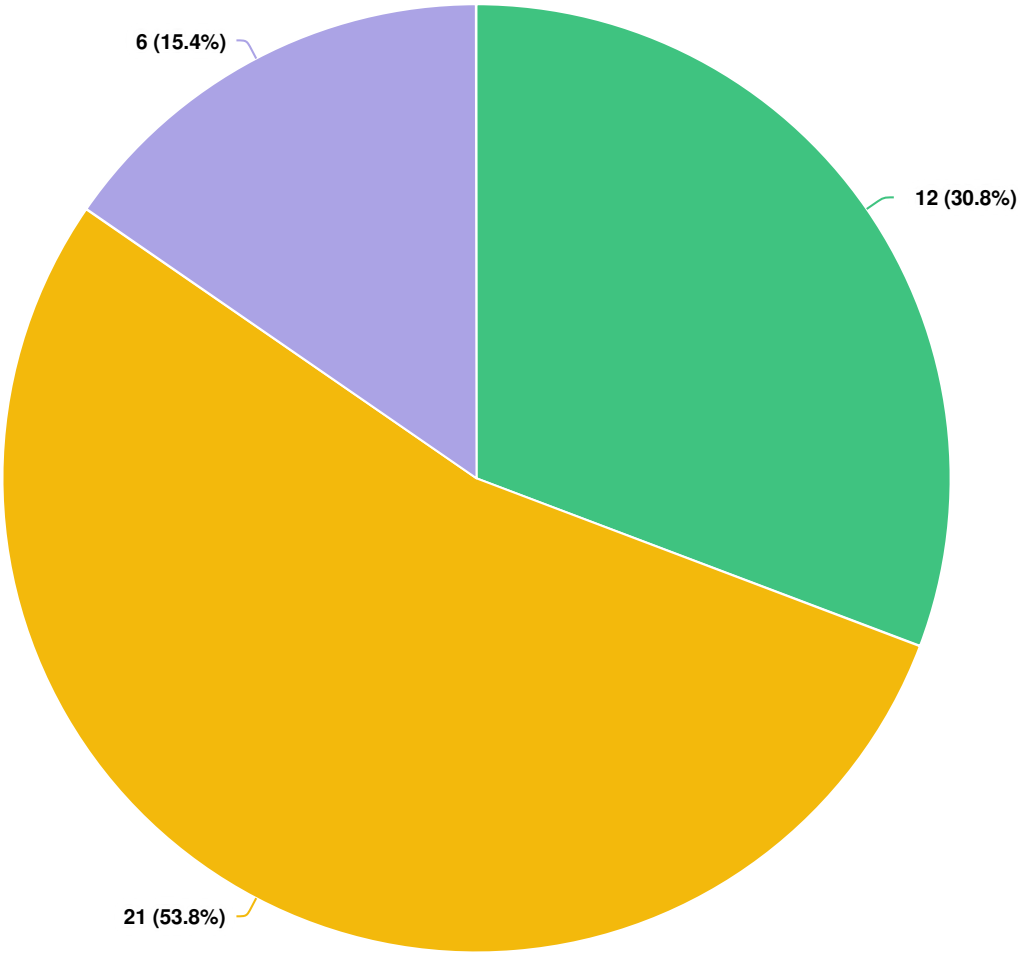


Question options

Yes No I don't know

Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q15 Do you have earthquake insurance?

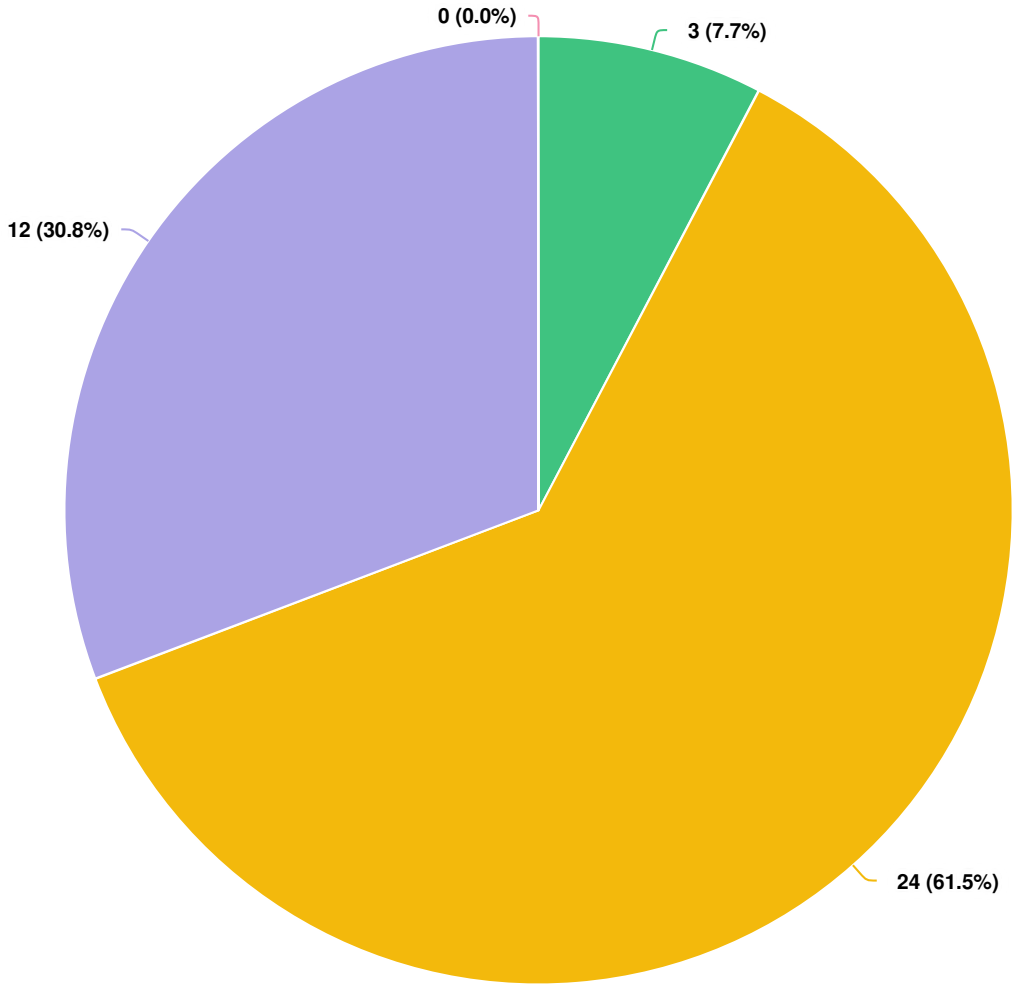


Question options

Yes No I don't know

Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q16 How prepared are you for a natural disaster?

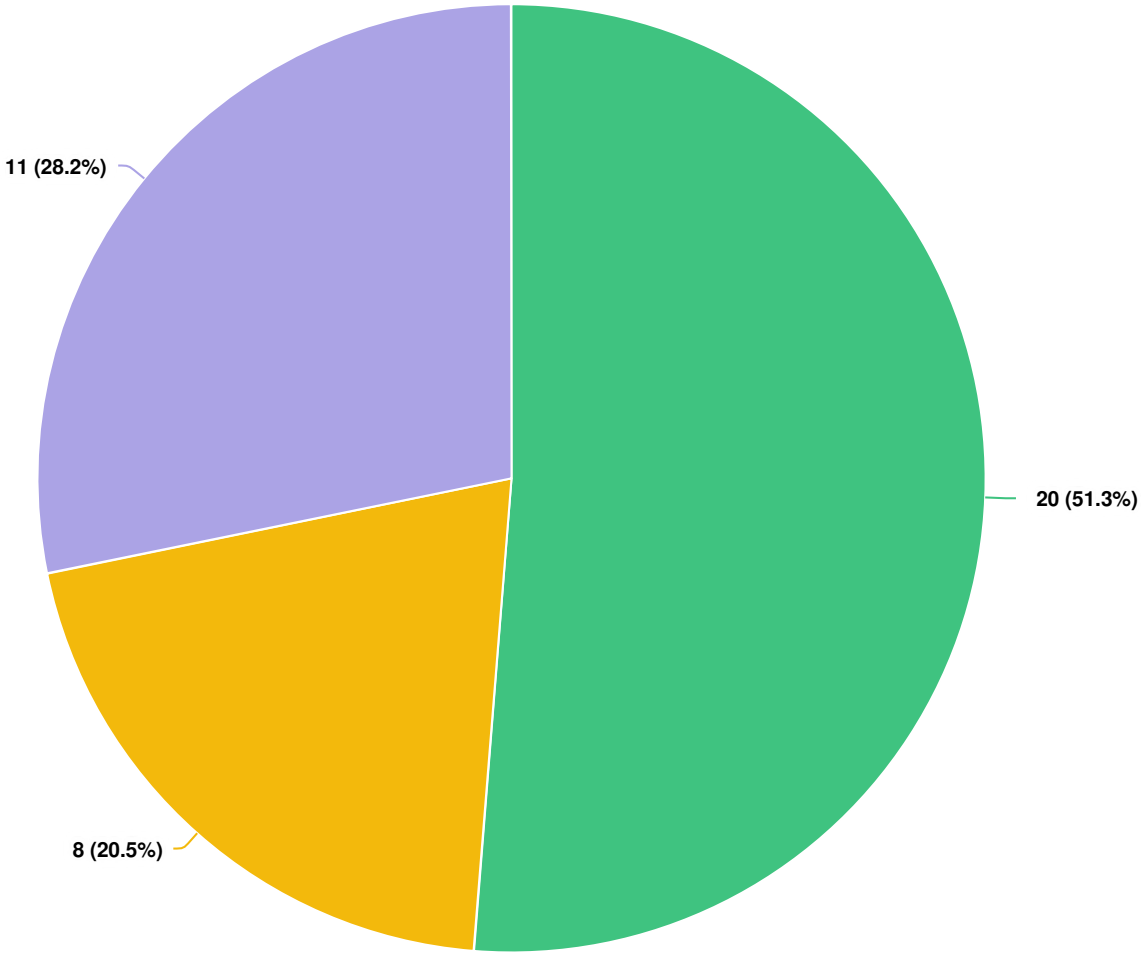


Question options

Very Prepared | Somewhat Prepared | Unprepared | I don't know

Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q17 Have you signed up to receive emergency notifications via AC Alert?

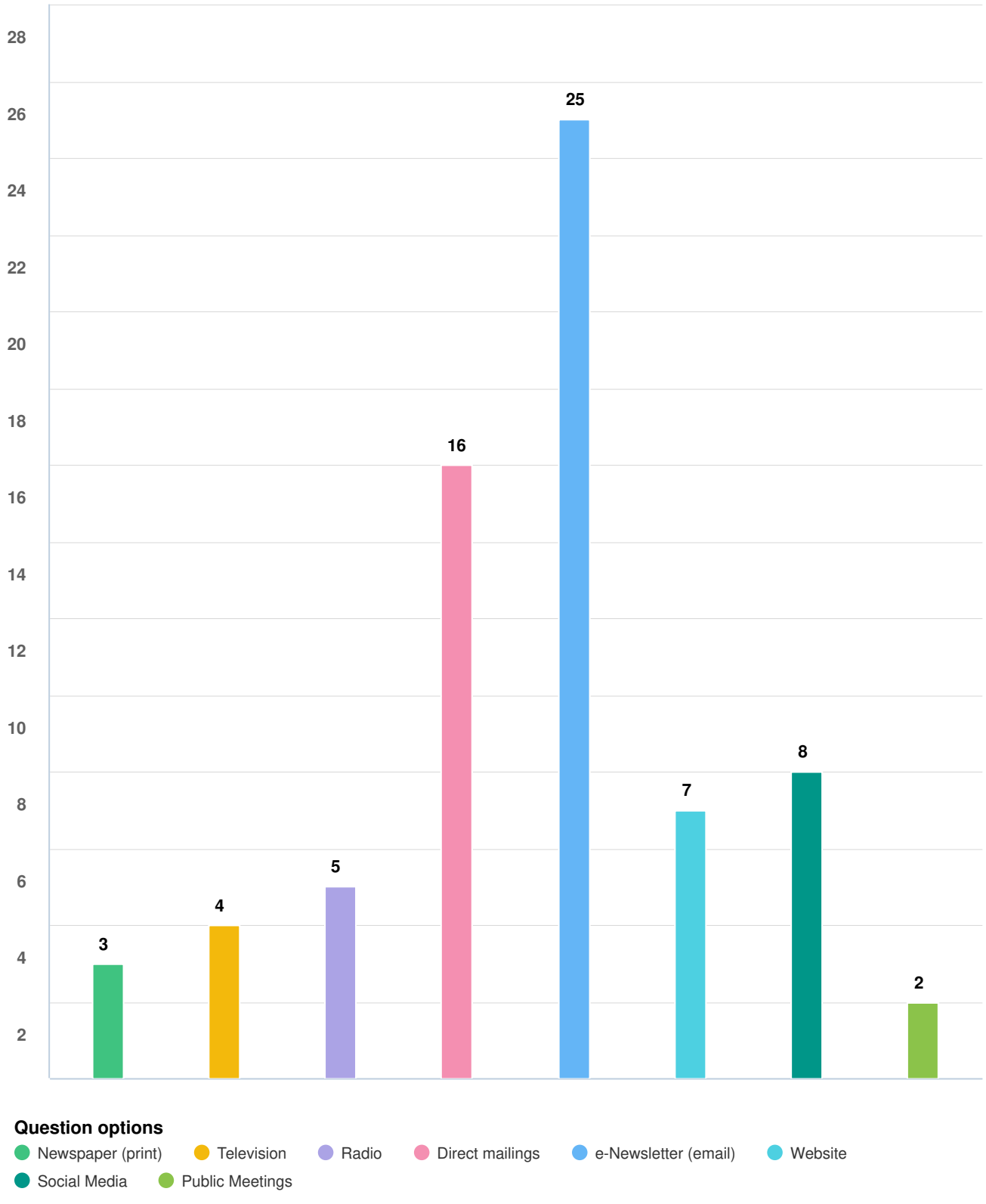


Question options

Yes No I don't know

Optional question (39 response(s), 0 skipped)
Question type: Radio Button Question

Q18 **Your City or utility district may wish to share information about emergency preparedness and how to reduce the risk natural disasters pose to your household and neighborhood. Which communication methods do you prefer? Select up to two.**



Optional question (39 response(s), 0 skipped)
Question type: Checkbox Question

Q19 What would you like your City or utility district to do to reduce the impact of future natural disasters?

Anonymous 8/18/2023 04:37 PM	Harden 1st responder sites and hospitals. Enhance PG&E response with city / county staff.
Anonymous 8/18/2023 04:49 PM	Provide easy to understand but specific information about risks for each local neighborhood.
Anonymous 8/18/2023 05:40 PM	Maintain a high level of preventive maintenence
Anonymous 8/18/2023 06:16 PM	Provide community training so people learn how to manage natural disasters on their own until help arrives. Training should provide info on how to cooperate as a neighborhood in addition to what to do to prepare individually/as a family.
Anonymous 8/18/2023 09:33 PM	strengthen utility lines, water, sewer, gas, from failure during earthquake. Encourage preparation like adding automatic gas shutoff on houses.
Anonymous 8/18/2023 11:40 PM	timely alerts
Anonymous 8/19/2023 12:40 PM	Plant more trees, prevent fires by monitoring
Anonymous 8/20/2023 10:09 AM	To have and stress the importance and resources available.
Anonymous 8/20/2023 12:53 PM	Offer grants for people to make their homes and communities climate-resilient, plant more trees to naturally cool the area, move development and utilities further inland and do ecological restoration along the coast, replace municipal lawns with community gardens, etc.
Anonymous 8/22/2023 09:46 AM	Move all power cables underground. Increase ground cover plants and trees. Remove dry brush and manage wile growth of plants by the roadsides. Make the public pathways clean and prevent risk of

	damage due to fire spreading or debris flow
Anonymous 8/22/2023 06:26 PM	Cut the trees and bushes in the old Alameda creek in front of my home.
Anonymous 8/22/2023 09:16 PM	Be proactive about potential disasters to avoid worst case scenarios.
Anonymous 8/25/2023 04:23 PM	Take a more active role to reduce the fire hazards from overgrown dried weeds throughout the City and also from homeless encampments.
Anonymous 8/26/2023 10:07 AM	Include retrofit programs with list of approved contractors to do the work now—not after next quake. Seniors citizens, especially need help to get this information as disasters create scammers who pass themselves off as experienced professionals. I believe Hayward has retrofit plans but no plans address slab foundations. What is the number of homes in Fremont with slab foundations in Fremont? To my knowledge, Fremont hasn't created any plans and or steps for Do It Yourself guides to sell to residents for retrofit for nominal fee. It would be helpful to have more easily found maps showing natural conditions of creeks, springs and marshes, in addition to major gas lines, major electric power lines, earthquake fault lines, areas in potential fire areas and flooding areas, as well as underground springs water (ie Weibel & Warm Springs). Fremont website should make it easy to find this info
Anonymous 8/26/2023 11:41 AM	Plan ahead & invest the funds necessary.
Anonymous 9/01/2023 06:19 PM	Help lower earthquake insurance costs. Underground all utility lines.
Anonymous 9/02/2023 09:50 AM	Seismically upgrade all infrastructure in the Tri-Cities area. Create an earthquake alert system. Have a detailed earthquake response plan. Stock emergency supplies of critical equipment for the inevitable big one. Keep educating the community on earthquake preparedness with checklist handouts.
Anonymous 9/10/2023 02:42 PM	Stop building nearer and nearer to the Bay

Anonymous 9/19/2023 11:15 AM	make sure infrastructure is prepared for earthquake.
Anonymous 10/04/2023 10:02 AM	plan ahead and prioritize climate resilience. get more people aware of risks and what to do in an emergency.
Anonymous 10/20/2023 05:01 PM	More outreach on emergency preparedness and immediate hazards and risks in city.
Anonymous 10/25/2023 09:52 AM	Stop using fossil fuels--give every house solar. Plant more native trees.
Anonymous 11/15/2023 10:07 PM	Regular clean up of debris around city
Anonymous 11/23/2023 09:22 AM	Ensure that the city is first safe from our own failures - water and electric grid, roads, schools, sanitation, levees, rampant housing (and bending backwards to help developers). This is something you can actually do.
Anonymous 1/03/2024 06:15 PM	Working with the natural environment long term to mitigate flooding areas and prevent fires more
Anonymous 1/22/2024 08:01 PM	don't put more people in harms way by building new housing atop restorable wetlands in a sea level rise inundation zone!

Optional question (26 response(s), 13 skipped)
Question type: Essay Question

Q20 Is there any thing else you would like to add?

Anonymous 8/18/2023 04:49 PM	Please don't allow this to become another high-level check the box planning effort filled with generalities.
Anonymous 8/18/2023 06:16 PM	Hopefully the models being used to predict potential problems are forward looking (e.g. not using rainfall models from previous years data and are instead taking into account climate change prediction models).

Anonymous 8/18/2023 09:33 PM	Try to encourage preparation and get a bicycle or scooter because they will work if there is no gasoline and electricity or roads are messed up.
Anonymous 8/18/2023 11:40 PM	there should be multiple places to go in case of disaster. not good if all go to the same location.
Anonymous 8/19/2023 12:40 PM	Awareness and education of climate change through social media
Anonymous 8/22/2023 06:26 PM	We continually experience fires in the field and creek from the homeless that live in the creek and this year Union city had a major fire due to having legal fireworks that could have spread into the field.
Anonymous 8/25/2023 04:23 PM	No thank you.
Anonymous 8/26/2023 10:07 AM	Although Fremont staff had to adapt to the Pandemic and still provide some services onsite, residents got info they needed with return phone calls, emails etc. Now there seems to be one single phone number with recorded phone tree —expecting people to know the name of a staff person or even which department on their first call? Could this be more user friendly with a “real person” available to greet and assist those with a general phone number for the appropriate department?
Anonymous 9/02/2023 09:50 AM	Yes, stop all housing and commercial developments by our bay lands.
Anonymous 9/09/2023 11:16 AM	I would want the city to text me like amber alerts.
Anonymous 9/19/2023 11:15 AM	Natural gas lines should have automatic shut off values in case of a major earthquake.
Anonymous 10/04/2023 10:02 AM	shallow groundwater is a big threat to newark that should be studied as part of this effort.
Anonymous	Pl use your brain and not a project report to improve basic facilities

11/23/2023 09:22 AM	and utilities. For example, roads, sanitation, schools continue to deteriorate esp as population rises.
Anonymous 1/22/2024 08:01 PM	Please do not allow developers to build the Mowry housing at the pick and pull site. The pick and pull location should not have been in that wetland location in the first place. We need to be more practical about placing homes in safer locations. Don’t destroy our natural parks area and wetlands. They are priceless and sensitive areas that require protection.

Optional question (14 response(s), 25 skipped)
Question type: Essay Question

Appendix H Hazus Reports

Multiple Hazus Scenario reports were completed for this LHMP Update. These include the following:

Tri-City Planning Area (including ACWD and USD)

- Calaveras 7.43 with 10 mph wind
- Calaveras 7.43 with 50 mph wind
- Hayward + Rodgers Creek 7.57 with 10 mph wind
- Hayward + Rodgers Creek 7.57 with 50 mph wind
- Hayward (Haywired Scenario) 7.0 with 10 mph wind
- Hayward (Haywired Scenario) 7.0 with 50 mph wind
- San Andreas 7.9 with 10 mph wind
- San Andreas 7.9 with 50 mph wind

City of Fremont

- Calaveras 7.43 with 10 mph wind
- Calaveras 7.43 with 50 mph wind
- Hayward + Rodgers Creek 7.57 with 10 mph wind
- Hayward + Rodgers Creek 7.57 with 50 mph wind
- Hayward (Haywired Scenario) 7.0 with 10 mph wind
- Hayward (Haywired Scenario) 7.0 with 50 mph wind
- San Andreas 7.9 with 10 mph wind
- San Andreas 7.9 with 50 mph wind

City of Newark

- Calaveras 7.43 with 10 mph wind
- Calaveras 7.43 with 50 mph wind
- Hayward + Rodgers Creek 7.57 with 10 mph wind
- Hayward + Rodgers Creek 7.57 with 50 mph wind
- Hayward (Haywired Scenario) 7.0 with 10 mph wind
- Hayward (Haywired Scenario) .0 with 50 mph wind
- San Andreas 7.9 with 10 mph wind
- San Andreas 7.9 with 50 mph wind

City of Union City

- Calaveras 7.43 with 10 mph wind
- Calaveras 7.43 with 50 mph wind
- Hayward + Rodgers Creek 7.57 with 10 mph wind
- Hayward + Rodgers Creek 7.57 with 50 mph wind
- Hayward (Haywired Scenario) 7.0 with 10 mph wind
- Hayward (Haywired Scenario) 7.0 with 50 mph wind
- San Andreas 7.9 with 10 mph wind
- San Andreas 7.9 with 50 mph wind



2024 Tri-City Local Hazard Mitigation Plan Update

September 12, 2024
City Council Meeting

Overview

- Local Hazard Mitigation Plan (LHMP) Background
- Resource Organization
- Hazards and Risks Assessment
- Plan Development
- Plan Monitoring and Implementation
- Recommendation

2024 Tri-City LHMP Background

Tri-City partnership with FEMA grant funding

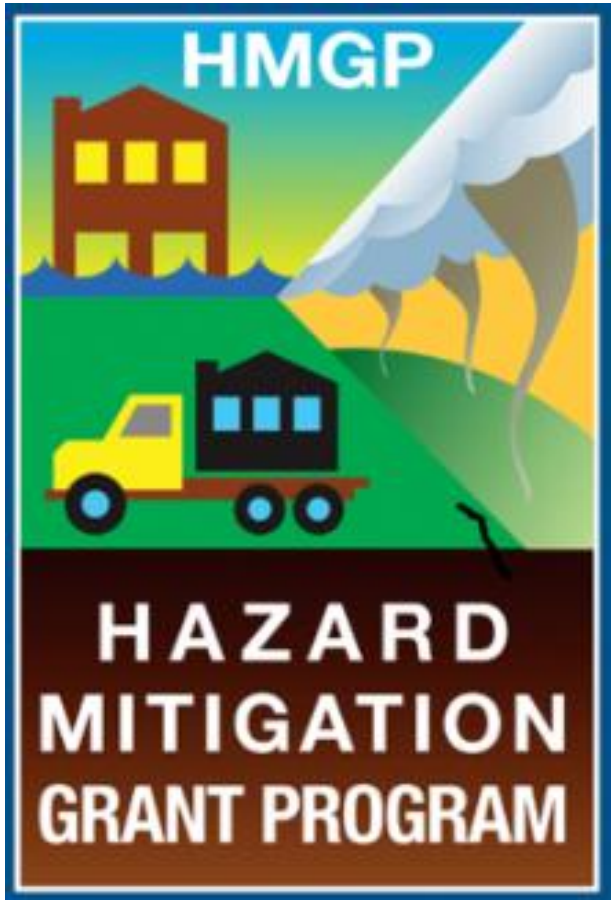


Contractor and Planning Team worked to meet FEMA/CalOES requirements



2024 Tri-City LHMP Background

Federal government in 2002 updated the Stafford Act to include Title 44/Chapter 1 Part 201 (44 CFR Part 201).



Organize Resources

- Spring of 2021 the City Office of Emergency Services began process to update 2017 LHMP
- September 2022 the City of Fremont was awarded a FEMA grant to hire a contractor
- January 2023 the Project team selected Foster-Morrison as our contractor

Organize Resources

- April 2023 established Project team and timeline
- April 2023 Project team identified Planning team members
- April 2023 – January 2024 Community engagement

Assess Hazards and Risks

PRIORITY HAZARDS	LIKELIHOOD OF FUTURE OCCURENCES
Climate Change	Highly Likely
Coastal Flooding and Sea Level Rise	Highly Likely
Dam Failure	Unlikely
Drought and Water Shortage	Likely
Earthquake	Highly Likely
Floods: 1%/0.2% annual chance	Occasional
Floods: Localized/Stormwater Flooding	Highly Likely
Landslide	Likely
Levee Failure	Unlikely
Severe Weather: Extreme Cold and Freeze	Likely
Severe Weather: Extreme Heat	Highly Likely
Severe Weather: Heavy Rains, Storms and High Winds	Highly Likely
Tsunami	Unlikely
Wildfire	Highly Likely

Develop Mitigation Plan

- September 2023 Planning team set goals
- October 2023 Planning team reviewed 2017 Action Items
- October 2023 Planning team received draft plan

Develop Mitigation Plan – Action Item Highlights

- Public Education and Awareness
- Retrofit existing facilities and address back-up power
- Develop plans addressing sea level rise, storm drains, and urban forest
- Enhance GIS data systems and mapping
- Complete Central Avenue railroad overpass

Implement and Monitor

- March 2024: Submitted 2024 Tri-City LHMP Update to Cal OES and FEMA
- July 2024: Received Cal OES and FEMA conditional approval pending jurisdiction adoption
- August 2024: Newark Disaster Council approved recommending City Council adopt the 2024 Tri-City LHMP Update

Implement and Monitor

- September 2024: City Council adoption of the 2024 Tri-City LHMP Update for consideration
- Next Steps:
  - Following City Council adoption, the 2024 Tri-City LHMP Update may then be formally approved by Cal OES and FEMA.
  - Newark Disaster Council will review status of the 2024 Tri-City LHMP Update action items yearly (at minimum).

Recommendation

- Staff recommends that City Council adopt a resolution approving the 2024 Tri-City Local Hazard Mitigation Plan Update

STAFF REPORT
Item F. 2.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Roya Gonzalez, Senior Management Analyst
SUBJECT	Receive a presentation of the draft Facilities Master Plan and provide feedback

SUMMARY AND RECOMMENDATION

Staff recommends that the City Council receive a presentation on the draft Facilities Master Plan (Plan) and provide feedback to be incorporated into the final Plan.

BACKGROUND

The City owns and maintains 24 structures, each managed within the constraints of allocated resources and specific preventative maintenance plans. Recognizing the need for a comprehensive approach to address future growth, facility maintenance, and community needs, the City Council approved an agreement in November 2022 with Group 4 Architects to develop the City's first Facilities Master Plan.

Group 4 Architects, alongside their team of consultants, conducted an extensive process to develop the Plan, which included four main tasks:

Task 1: Existing Conditions Evaluations: to assess the physical condition and maintenance needs of each City building, a Facility Condition Assessment (FCA) was completed for each of the City buildings. The FCA included the building site, exterior envelope, structure, interior elements, visual ADA compliance and mechanical, electrical, and plumbing (MEP) systems.

Task 2: Future Needs Assessment: to gain a thorough understanding of the City’s operational needs, the consultant toured each facility to assess the requirements of both staff and the community. During these tours, several future projects were identified to enhance operational efficiency and accommodate expected growth in staff and services. This phase also marked the first part of a two-stage community engagement process aimed at identifying the community's facility space needs. The community expressed a strong interest in arts and community spaces, highlighting the need for facility spaces like an arts/craft studio and a performance theater. Additionally, the consultant reviewed industry standards, trends, and best practices in community facilities to tailor recommendations that address Newark’s specific requirements.

Task 3: Facility Options: to address the arts and community space needs identified through community engagement, the consultant proposed a Cultural Arts Community Center with three size options at two potential locations. The proposed sizes are:

- Option A: 18,000 square feet
- Option B: 25,000 square feet
- Option C: 32,000 square feet

Each size option incorporates the spaces prioritized by the community. These options were evaluated at two possible sites: Newark Community Park and Civic Center Park. In phase two of the community engagement process, these options, along with a set of evaluation criteria, were presented to the public. By the end of this phase, it was evident that the Newark Community Park location and size Option C were preferred.

Task 4: Implementation Plan: The implementation plan is separated into four categories:

- Preventive Maintenance: The preventative maintenance is estimated at $73 million over the next 20 years, with costs varying annually. This estimate does not cover preventive maintenance for facilities recommended for replacement (Newark Community Center, Fire Stations 27 and 29) or vacant buildings.
- Renovations/Capitol Projects: Several future projects were identified during Task 2 (Future Needs Assessment) to improve operational efficiency and accommodate anticipated growth in staff and services.
- New or Replacement Facilities: The proposed new Cultural Arts Community Center is recommended to be built at the existing Community Center site, replacing the current facility. Due to several operational deficiencies, extensive maintenance needs, and overall poor building conditions, the consultant also recommends replacing Fire Station No. 27 (at the intersection of Cherry Street and Mowry Avenue) and Fire Station No. 29 (on Ruschin Drive at Newark Boulevard).
- Sell/Repurpose/Demolish: The City owns three vacant buildings - Watkins Hall, the previous library building, and the previous fire station on Thornton Avenue. In addition to their condition and the required upgrades to meet code requirements, no specific uses were identified for these buildings during Task 2 (Future Needs Assessment).

At the City Council meeting on February 22, 2024, the consultant provided a comprehensive summary of the community engagement process and presented key findings. By sharing these findings before presenting the draft plan, the City Council had the opportunity to take the City's facility needs into account when assessing whether to place a measure on the ballot to update the Transient Occupancy Tax rate ("TOT" and commonly known as the "Hotel Tax").

DISCUSSION/ANALYSIS

The Facilities Master Plan outlines a comprehensive strategy for managing and enhancing the City's facilities over the next 20 years. It is structured around four key categories: Preventive Maintenance, Renovations/CIP, New or Replacement Facilities, and Sell/Repurpose/Demolish.

- Preventive Maintenance: Historically, the City has managed its buildings individually. However, the data from the Facility Condition Assessments will

enable staff to develop a comprehensive, long-term preventive maintenance plan. This plan will help staff allocate funds effectively from the maintenance reserve and budget appropriately. By maintaining the City's assets properly, the Plan aims to extend the lifespan of the buildings and ensure their continued functionality.

- Renovations/Capitol Projects: No projects are recommended for immediate completion. All recommendations will be submitted to the Council for review as part of the Capital Improvement Program process. The projects are categorized into three time frames: near term (3-5 years), mid-term (5-10 years), and long term (11-20 years). This categorization will serve as a guide for scheduling and prioritizing these projects for future consideration. These recommendations will address future growth, as well as identified community needs.
- New or Replacement Facilities: The estimated cost for replacing Fire Stations No. 27 and 29 ranges from $15 million to $19 million each, totaling between $30 million and $38 million. The proposed new Cultural Arts Community Center is estimated to cost between $32 million and $56 million, depending on its size. All three facilities are recommended for the immediate/short-term (1-3 years) replacement. A comprehensive funding strategy will need to be developed to support these projects.
- Sell/Repurpose/Demolish: These three buildings will need further analysis to determine their future. During the two-part community engagement process, the community did not identify any specific uses for these buildings. Therefore, a thorough analysis of each site will be necessary to make informed recommendations to City Council.

Successful implementation of this Plan will necessitate thorough consideration of financial, logistical, and community needs. A general overview of the facility recommendations for the first five years is shown below.

2024-2029 City Facility Recommendations Summary				
Facility	Maintain	Renovations/CIP	Replace	Selll/Repurpose/Demo
Ash Street Park Buildings	X			
Birch Grove Restrooms		X		
Boathouse at Lakeshore Park	X			
Community Center Annex			X	
Community Center Building			X	

Community Center Restroom Building			X	
Fire Station 27			X	
Fire Station 28	X	X		
Fire Station 29			X	
Old Fire Station				X
Old Library				X
Clark W. Redeker Senior Center	X			
Second Chance Shelter	X			
Service Center	X	X		
George M. Silliman Community Activity Center	X			
Mel Nunes Sportsfield Restroom Building		X		
Watkins Hall				X
David W. Smith City Hall	X			
Alan L. Nagy Library	X			
Police Department	X			

At the City Council meeting, the consultant will present an overview of the Plan's development process and review its recommendations. Following the presentation, the consultant will seek feedback from the public and City Council to refine and advance the Plan. Staff anticipates bringing the final Plan to the Council for approval before the end of the year.

FISCAL IMPACT

There is no fiscal impact associated with this item.

REVIEW AND APPROVAL

Prepared by - Roya Gonzalez, Senior Management Analyst
Reviewed by - Lenka Hovorka, Assistant City Manager
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

Draft Facilities Master Plan

FMP Presentation

NEWARK
California

City of Newark
Facilities Master Plan

PMT REVIEW DRAFT REPORT | 08 JULY 2024







GROUP 4 ARCHITECTURE

GROUP 4

ARCHITECTURE
RESEARCH +
PLANNING, INC

211 LINDEN AVENUE
SO. SAN FRANCISCO
CA 94080 USA
T: 650.871.0709





CONTENTS

1. Introduction 3

Executive Summary *4*

Project Goals and Purpose *6*

Plan Summary *6*

Work Plan and Participation Plan *7*

Analysis of Existing Operations *8*

Facility Condition Assessments *8*

Facility Condition Assessments Summary Table *9*

Project Participation *14*

2. Community, Recreation, and Aquatic Facilities 17

Newark Community Center *18*

Newark Community Center Annex *19*

Clark W. Redeker Senior Center *34*

George M. Silliman Community Activity Center *36*

Ash Street Recreation *40*

Birch Grove Park Restrooms *41*

Lakeshore Park Boathouse *42*

Newark Community Park Restrooms *43*

Alan L. Nagy Library *44*

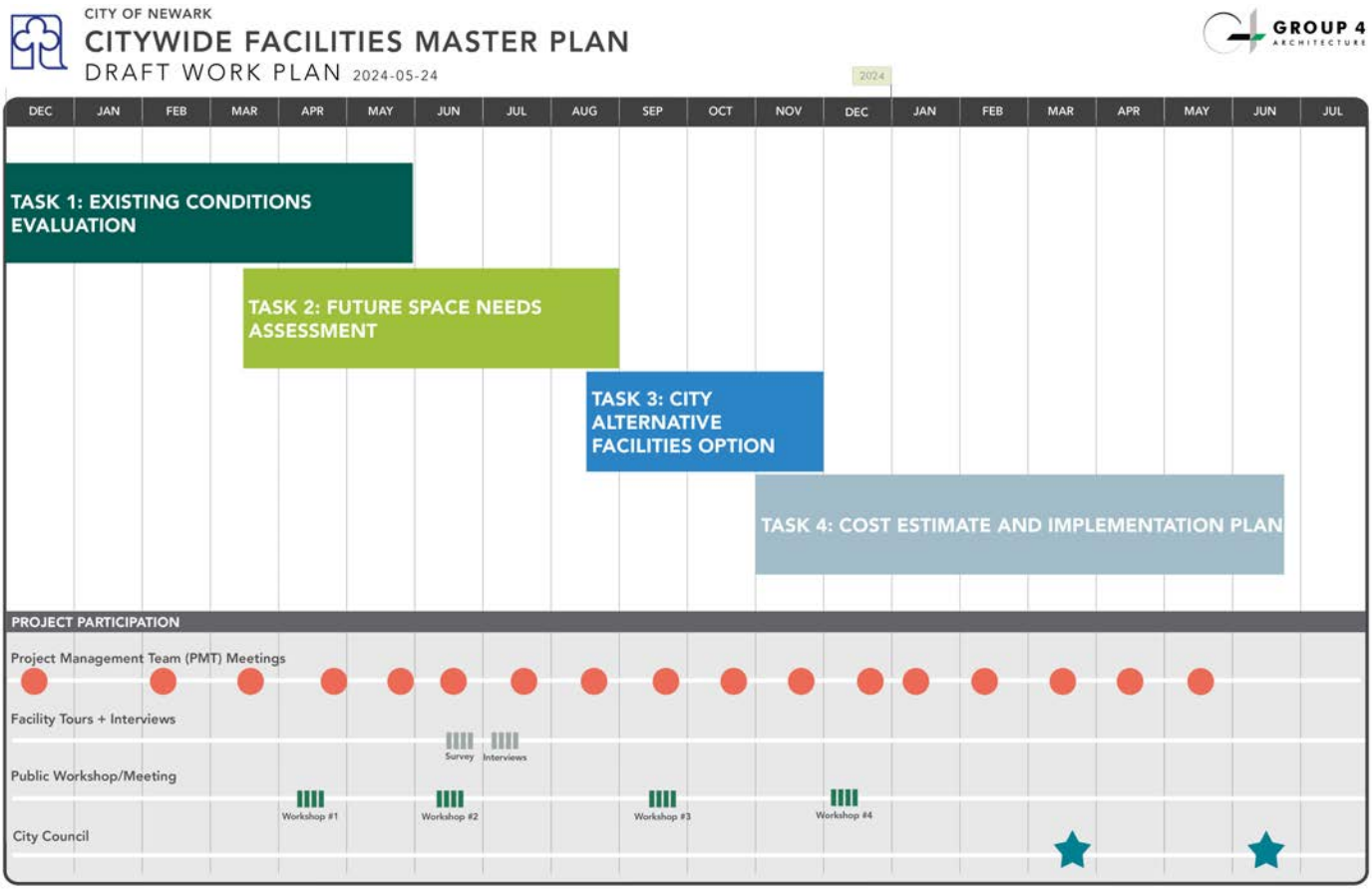
Sportsfield Restroom *45*

Old Newark Library *46*

Watkins Hall *47*

3. Administration, Public Safety, and Service Facilities 49
David W. Smith City Hall *51*
Fire Station 27 ..... *62*
Fire Station 29 ..... *63*
Fire Station 28 ..... *68*
Newark Police Department *72*
Newark Service Center *76*
Second Chance Emergency Shelter *78*
Old Fire Station *79*


UNITY PROGRAM OPTIONS
COMMUNITY AND ARTS FACILITY
BASE - A
B
C
SQUARE FEET
~18,000 SF, 1-Story
1ST FLOOR FOOTPRINT
~18,000 SF
CAPITAL COST
$$$ – $$$$
PARKING
~60 – 130 spaces
SQUARE FEET
~25,000 SF, 2-Story
1ST FLOOR FOOTPRINT
~18,000 SF
CAPITAL COST
$$$$ – $$$$$
PARKING
~80 – 150 spaces
SQUARE FEET
~32,000 SF, 2-Story
1ST FLOOR FOOTPRINT
~20,000 SF
CAPITAL COST
$$$$$ – $$$$$$
PARKING
~105 – 175 spaces
BASE + B +
SITE OPTIONS
COMMUNITY CENTER PAR
EXISTING COMMUNITY PARK ANALYSIS
COMMUNITY PARK OPTIONS
Place a sticker on your preferred site option
OPTION A
OPTION B
SITE OP
EXISTING CIVIC
INTRODUCTION



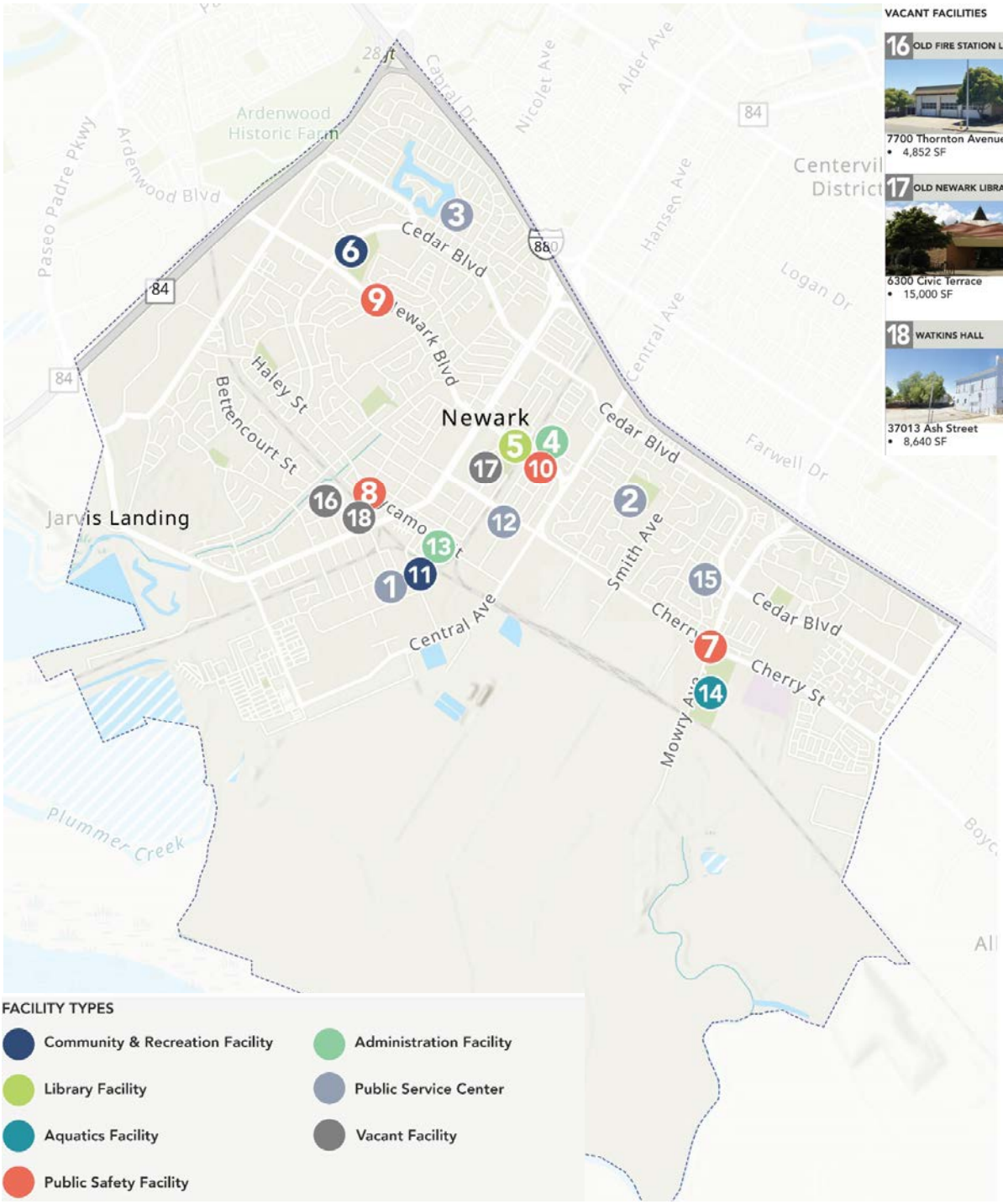
INTRODUCTION

EXECUTIVE SUMMARY

For 70 years, the City of Newark has been a part of Alameda County, California. The city has changed a lot in those seven decades, evolving from the railroad and agricultural to the biotech and health sciences industries. Though Newark was incorporated within the last century, its community can be traced back 150 years. Today, the City of Newark owns and operates 24 facilities that serve vastly different purposes; aquatic recreation, library, park restrooms, shelters for residents experiencing barriers, public safety, and more. With such a strong community and deep roots in the Bay Area, the investments that Newark makes in their facilities will work to emphasize and improve what already exists, while propelling the city into a new era of service.

The City of Newark began a facility master plan process in 2022 with Group 4 Architecture with the goal of planning for the city's future growth and developing needs. The objectives for this process included a master plan for the near future (1-3 years), and long term (5-10+ years) as well as a strategy for capital investments in city facilities. Throughout the master planning process, city leadership and staff have been involved during every step of the process so that each decision and recommendation is realistic and caters directly to the needs of all Newark residents.

The thorough engagement process for this master plan helped to create the best plan possible. Newark residents were able to help envision the future of their city by participating in engagement and providing opinions on potential types of public spaces and project site options. Over several months, in-person pop-ups at city events, community meetings, and online surveys were used for two rounds of engagement to ensure a diverse range of needs and opinions were reflected in the final plan and recommendations.



VACANT FACILITIES

16 OLD FIRE STATION LOCATION

7700 Thornton Avenue
- 4,852 SF

17 OLD NEWARK LIBRARY LOCATION

6300 Civic Terrace
- 15,000 SF

18 WATKINS HALL

37013 Ash Street
- 8,640 SF

FACILITY TYPES

- Community & Recreation Facility
- Library Facility
- Aquatics Facility
- Public Safety Facility
- Administration Facility
- Public Service Center
- Vacant Facility

1 ASH STREET CENTER, RESTROOM, AND VIOLA BLYTHE COMMUNITY SERVICE CENTER



37365 Ash Street
- Ash Street Center: 1,968 SF
- Restroom: 1,100 SF
- Viola Blythe: 960 SF

2 BIRCH RESTROOM @ BIRCH GROVE PARK



38080 Birch Street
- 900 SF

3 BOATHOUSE@ LAKESHORE PARK



Chelsea Drive
- 300 SF

4 DAVID W. SMITH CITY HALL



37101 Newark Blvd.
- 25,638 SF

5 ALAN L. NAGY LIBRARY



37055 Newark Blvd.
- 25,580 SF

6 NEWARK COMMUNITY CENTER, ANNEX AND RESTROOM



35501 Cedar Blvd.
- Community Center: 15,000 SF
- Community Annex: 3,000 SF
- Community Center Restroom: 500 SF

7 FIRE STATION 27



39039 Cherry Drive
- 7,005 SF

8 FIRE STATION 28



7550 Thornton Avenue
- 18,000 SF

9 FIRE STATION 29



35775 Ruschin Drive
- 5,450 SF

10 NEWARK POLICE DEPARTMENT



37077 Newark Blvd.
- 23,987 SF

11 CLARK W. REDEKER NEWARK SENIOR CENTER



7401 Enterprise Drive
- 7,300 SF

12 SECOND CHANCE SHELTER



6516 Central Avenue
- 3,116 SF

13 SERVICE CENTER (NEWARK PUBLIC WORKS MAINTENANCE)



37440 Filbert Street
- 24,700 SF

14 GEORGE M. SILLIMAN COMMUNITY ACTIVITY CENTER AND SPORTSFIELD SCOREKEEPER HUT



6800 Mowry Avenue
- Phase I: 36,410 SF
- Phase II: 32,320 SF
- Sportsfield Scorekeeper Hut: 680 SF

15 SPORTSFIELD RESTROOM



3911 Cherry Street
- 680 SF

PROJECT GOALS AND PURPOSE

The goals for this planning process align with the City of Newark's original vision for the project and created a detailed and focused framework for the planning approach.

1. **ASSESS**
Assess facility needs and conditions

2. **DETERMINE GROWTH**
Determine growth and future needs

3. **ENGAGE**
Engage the Newark community about community program and space needs

4. **DEVELOP**
Develop recommendations and options with supporting cost estimates

5. **PLAN**
Create an action plan to guide and improve future decision-making about programs, services, workflow, and facilities

PLAN SUMMARY

Within the last 14 months, the planning process for the City of Newark has included thorough analysis, close work with city staff and administration, and public engagement which led to the development of a plan for Newark's facilities that works with what the city already has, and channels effort into identified areas of need. The following are strategies that were determined throughout the planning process and target areas that the City of Newark can invest in to increase the number of services and programs provided and functionality across the board.

- Protecting capital assets
- Reinvesting in the Community Center
- Rethinking the Clark W. Redeker Senior Center
- Addressing the condition of two Fire Stations
- Investing further in aquatic recreation



TASK 1: EXISTING CONDITIONS EVALUATION

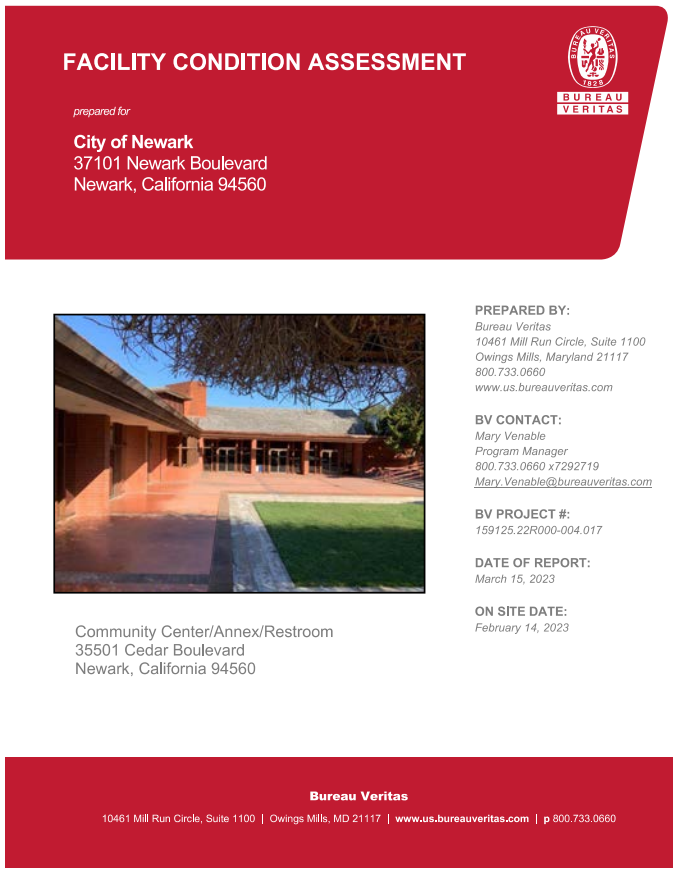
WORK PLAN AND PARTICIPATION PLAN

This facilities master plan focused on four main studies. The first being an existing space analysis of City Hall to examine the efficiency of the building's layout. The second study looked at the functionality and health of the city's existing community facilities such as the Newark Community Center and Annex, Service Center, Senior Center, and Silliman Center. The third study was a space analysis of the remaining Newark facilities, and the last study, performed by TenOver Studio, examined the condition and functionality of Newark's existing Fire Stations (27, 28, and 29).

The existing City Hall building currently contains staff from six different departments: City Administration (City Manager, City Attorney, City Clerk, Human Resources), Information Technology (IT), Finance, Community Development, Public Works, and Fire Prevention. As part of the planning process, Group 4 attended a walkthrough of the building's public and staff spaces to assess how space is currently used by the city. From this, Group 4 created floor plan diagrams which were confirmed by Newark's administrative team.

Group 4 then walked through Newark's community, recreation, and aquatic facilities to determine whether the city's recreation and community space needs are being met. The project team paid special attention to the current Newark Community Center which is functioning suboptimally. From this, Community Center options were brought to the public for input.

Ten Over Architects walked through and determined the existing conditions of the three Fire Stations in Newark as well as the Police Station and reported their findings back to the project management team. Additionally, Aquatic Design Group performed an analysis of the Silliman Center, Newark's aquatic facility.



FACILITY CONDITION ASSESSMENT

prepared for

City of Newark
37101 Newark Boulevard
Newark, California 94560

Community Center/Annex/Restroom
35501 Cedar Boulevard
Newark, California 94560

PREPARED BY:
Bureau Veritas
10461 Mill Run Circle, Suite 1100
Owings Mills, Maryland 21117
800.733.0660
www.us.bureauveritas.com

BV CONTACT:
Mary Venable
Program Manager
800.733.0660 x7292719
Mary.Venable@bureauveritas.com

BV PROJECT #:
159125.22R000-004.017

DATE OF REPORT:
March 15, 2023

ON SITE DATE:
February 14, 2023

Bureau Veritas
10461 Mill Run Circle, Suite 1100 | Owings Mills, MD 21117 | **www.us.bureauveritas.com** | **p** 800.733.0660



CITY HALL BUREAU VERITAS PROJECT: 159125.22R000-016.017

2. Building and Site Information

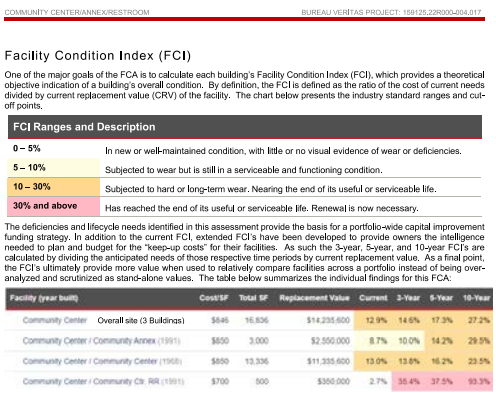
Systems Summary

System	Description	Condition
Structure	Steel frame with concrete-topped metal decks over concrete pad column footings over concrete foundation slab.	Good
Facade	Primary Wall Finish : Stucco Secondary Wall Finish: Curtain wall Windows: Aluminum	Good
Roof	Primary: Flat construction with single-ply TPO/PVC membrane	Good
Interiors	Walls: Painted gypsum board, Laminated paneling (FRP), ceramic tile Floors: Carpet, VCT, ceramic tile, and terrazzo Ceilings: Painted gypsum board and ACT	Good
Elevators	Passenger: One hydraulic car serving both floors	Good
Plumbing	Distribution: Copper supply and PVC waste and venting Hot Water: Gas water heater with integral tanks Fixtures: Toilets, urinals, Shower, and sinks in all restrooms	Good
HVAC	Central System: Boilers, air handlers, and heating pumps feeding VAV units Supplemental components: Package units, Ductless split-systems and Exhaust fans	Good
Fire Suppression	Wet-pipe sprinkler system and fire extinguishers	Good

6

www.us.bureauveritas.com | p 800.733.0660

Left: Facility Condition Assessment report cover for the Community Center Right: City Hall FCA report building and site information



COMMUNITY CENTER/ANNEX/RESTROOM BUREAU VERITAS PROJECT: 159125.22R000-004.017

Facility Condition Index (FCI)

One of the major goals of the FCA is to calculate each building's Facility Condition Index (FCI), which provides a theoretical objective indication of a building's overall condition. By definition, the FCI is defined as the ratio of the cost of current needs divided by current replacement value (CRV) of the facility. The chart below presents the industry standard ranges and cut-off points.

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little or no visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.

The deficiencies and lifecycle needs identified in this assessment provide the basis for a portfolio-wide capital improvement funding strategy. In addition to the current FCI, extended FCI's have been developed to provide owners the intelligence needed to plan and budget for the "keep-up costs" for their facilities. As such the 3-year, 5-year, and 10-year FCI's are calculated by dividing the anticipated needs of those respective time periods by current replacement value. As a final point, the FCI's ultimately provide more value when used to relatively compare facilities across a portfolio instead of being over-analyzed and scrutinized as stand-alone values. The table below summarizes the individual findings for this FCA:

Facility (year built)	Cost/SF	Total SF	Replacement Value	Current	3-Year	5-Year	10-Year
Community Center Overall site (3 Buildings)	$646	16,836	$14,235,600	12.9%	14.6%	17.3%	27.2%
Community Center / Community Annex (1991)	$650	3,000	$2,550,000	8.7%	10.0%	14.2%	29.5%
Community Center / Community Center (1968)	$650	13,336	$11,335,600	13.0%	13.6%	16.2%	23.5%
Community Center / Community Ctr. RR (1991)	$700	500	$350,000	2.7%	35.4%	37.5%	93.3%

Facility Condition Index (FCI) for the Community Center projected out 10 years

FACILITY CONDITION ASSESSMENTS

To understand the full range of needs for each of Newark's facilities, facility condition assessments were conducted. These assessments resulted in reports that detail the health of each building structure. They outline maintenance and accessibility issues, if any, as well as provide FCI (facility condition index) percentages for the current year, 3 years, 5 years, and 10 years into the future. FCI numbers show the percentage of a building and its components that will need replacement or maintenance.

Process:

- **Pre-Survey:** The Project Management Team completed pre-survey questionnaires prior to site visits and reviewed existing building data.
- **Assessments:** Bureau Veritas (BV) visited each facility and inspected building systems including the surrounding site and infrastructure, exterior and building envelope, roof and rooftop systems, interiors & accessibility, and life safety systems. BV then identified deficiencies in the existing buildings and developed repair/ replace recommendations. Finally, BV created cost estimations and a maintenance plan.

Facility Condition Assessments Summary Table

FACILITY	CURRENT FCI	3-YEAR FCI	5-YEAR FCI	10-YEAR FCI
Ash Street Park Bldgs	2.1%	5.0%	9.8%	28.9%
Birch Grove Restroom	0.0%	3.3%	22.6%	29.8%
Boathouse	0.9%	0.9%	9.7%	12.4%
Newark Community Center Annex	8.7%	10.0%	14.2%	29.5%
Newark Community Center	13.0%	13.8%	16.2%	23.5%
Community Center Restroom	2.7%	35.4%	37.5%	93.3%
Fire Station 27	8.8%	10.2%	12.8%	25.2%
Fire Station 28	0.4%	1.2%	3.2%	9.5%
Fire Station 29	5.5%	7.7%	11.7%	19.8%
Old Fire Station	13.1%	13.5%	21.6%	27.1%
Old Library	8.1%	17.1%	18.7%	22.7%
Clark W. Redeker Senior Center	0.3%	2.7%	4.9%	22.9%
Second Chance Shelter	0.7%	2.7%	6.6%	22.6%
Newark Service Center	4.0%	8.5%	14.0%	24.7%
George M. Silliman Community Activity Center	0.8%	2.6%	7.5%	20.5%
Sports Field Restroom	0.6%	8.9%	14.5%	41.0%
Watkins Hall	12.6%	21.9%	24.2%	25.4%
David W. Smith City Hall	0.0%	0.0%	0.1%	3.8%
Alan L. Nagy Library	0.0%	0.0%	0.0%	4.5%
Newark Police Department	0.1%	0.1%	0.1%	3.5%

FCI Ranges and Description	
0 – 5%	In new or well-maintained condition, with little or no visual evidence of wear or deficiencies.
5 – 10%	Subjected to wear but is still in a serviceable and functioning condition.
10 – 30%	Subjected to hard or long-term wear. Nearing the end of its useful or serviceable life.
30% and above	Has reached the end of its useful or serviceable life. Renewal is now necessary.



TASK 2: FUTURE SPACE NEEDS ASSESSMENT

In order to determine the future space needs of Newark, Group 4 engaged with the community through pop-up events and conducted a community survey to ask about public space and recreation needs. With the guidance and approval of the Project Management Team (PMT), Group 4 additionally conducted calculations of existing David W. Smith City Hall space and examined future staff growth to determine adequate space recommendations.

TASK 3: CITY ALTERNATIVE FACILITIES OPTIONS

Based on the results of this plan's public engagement efforts with the residents of Newark in combination with the prepared facility condition assessments, alternative options were developed specifically for the Newark Community Center located in Newark Community Park. Some of these options include changes to the Clark W. Redeker Senior Center and Newark's Old Library.

Further information on the future space needs assessment and the city alternative facilities options for each of Newark's facilities can be found in the following facility sections.

	Immediate	Short Term (1-2 yrs.)	Near Term (3-5 yrs.)	Mid Term (6-10 yrs.)	Long Term (11-20 yrs.)	TOTAL
Total expenditures for ALL facilities	$8.15M	$4.08M	$9.93M	$20.41M	$57.53M	$100.1M
Total expenditures for facilities *EXCLUDING Community Center-Annex-Restroom, Fire Station 27 and 29, Watkins Hall, Old Fire Station and Old Library*	$1.72M	$2.74M	$7.38M	$15.63M	$44.99M	$72.46M
Total expenditures for ALL facilities for Safety Plan Type costs	$500K					
Total expenditures for facilities for Safety Plan Type costs *EXCLUDING Community Center-Annex-Restroom, Fire Station 27 and 29, Watkins Hall, Old Fire Station and Old Library*	$52K					

Facility Maintenance Cost Table

TASK 4: COST AND IMPLEMENTATION PLAN

The facility condition assessments included an identification of deficiencies, inventory of assets, repair and replace recommendations and a maintenance plan identifying expenditures for immediate to long-term costs. The table summarizes those expenditures for all facilities as well as expenditures when the City excludes its vacant facilities (the old library, old fire station and Watkins Hall) and those facilities identified to be replaced or renovated (Newark Community Center, Fire Station 27 and Fire Station 29). It also highlights those expenditures specifically associated as safety to be addressed as an immediate need and costs. The facility costs below are costs to maintain and repair the current facilities and do not address costs associated with upgrading a facility to current codes, meet operational requirements or respond to community needs.

FACILITY RECOMMENDATION

BASED ON 5-YEAR FCI

✓ INDICATE SHORT TERM NEEDS

FACILITY	MAINTAIN	RENOVATE	REPLACE	SELL OR REPURPOSE	PAGE #
Ash Street Park Bldgs	✓				40
Birch Grove Restroom		✓			41
Boathouse	✓				42
Newark Community Center Annex			✓		19
Newark Community Center			✓		18
Newark Community Center RR			✓		43
Fire Station 27			✓		62
Fire Station 28	✓				68
Fire Station 29			✓		63
Old Fire Station				✓	79
Old Library				✓	46
Clark W. Redeker Senior Center	✓				34
Second Chance Shelter	✓				78
Newark Service Center		✓			76
George M. Silliman Center	✓				36
Sports Field Restroom		✓			45
Watkins Hall				✓	47
David W. Smith City Hall	✓				50
Alan L. Nagy Library	✓				44
Newark Police Department	✓				72

Newark facility recommendation summary table with corresponding report pages.

Based on the facility maintenance costs, a table was created to determine which facilities the City should maintain, renovate, replace or sell/repurpose. The facilities in the maintain facilities column currently meet the community needs and generally meet operational requirements. Those listed as renovate require futher costs to bring them up to code and operational requirements. Facilities identified as replace require significant costs to bring them up to code and operational requirements and do not address the community needs identified during the community outreach. The facilities listed as sell/repurpose require further study by the City. During the community outreach no need was identified for those facilities and/or their locations. These facilities would also require significant cost to bring them up to current building and life safety code if a new use was identified.

		Project Costs	Immediate & Short Term	Near Term (3-5 yrs.)	Mid Term (5-10 yrs.)	Long Term (11-20 yrs.)
AQUATICS	Improvement to George M. Silliman Center • Updated pool amenities • Improve Check-in and Staff Workspaces • Ninja Cross and Aquatic Fitness	*$7-9M* *($5-6M)* *($1-1.5M)* *($1-1.5M)*			✓	
COMMUNITY & ARTS	New 18-32k SF Community & Arts Center @ Community Park	*$31-56M*	✓			
RECREATION	Improvement to Silliman Center • Improved Storage • Evaluate underutilized space for additional program opportunities • Evaluate additional gym and courts w/indoor walk/run track	*$3-4M* *$23-28M*				✓ ✓
DAVID W. SMITH CITY HALL	Minor improvements to David W. Smith City Hall	*$1.5-2M*				✓
SERVICE CENTER	Improvements to Newark Service Center • New Admin Building • New maintenance bays (4) • Update locker/changing rooms and break room • Update HVAC in Shop Bldg. • Additional covered parking	*$18.5-23M* *($3-4M)* *($7-8M)* *($2-3M)* *($.5-1M)* *($6-7M)*		✓		
FIRE	New 8-10k Fire Station 27 New 8-10k Fire Station 29 Upgrades to Fire Station 28	*$15-19M* *$15-19M* *$1.5-2M*	✓ ✓	✓		
POLICE	Minor improvement to Newark Police Department	*$2-2.5M*			✓	
SAFETY ISSUES			$52-500K			
MAINTENANCE			$4.5-12.3M	$7.4-10M	$15.7-20.5M	$45-57.6M

Facility Improvement Projects

At the conclusion of the community outreach, facility assessments, and needs study, an implementation plan for the City was identified. The projects identified take into account, not only the condition of the facility but also respond to the communities' priorities and needs. The table below summarizes each of the facility projects and categorizes them in immediate/short-term vs long-term needs. The project costs associated with each project is a rough order of magnitude cost that was generated based of a $/SF for building and site costs, and assumes a publicly bid process using prevailing wages. It takes into account any associated furniture, fixtures, and equipment (FFE), and technology costs as well as soft costs including design and construction management fees and city administration and permit fees. These project costs also include a construction and project contingency. The project costs do NOT include escalation as these projects are currently unfunded with no associated timeline for design and construction.

The City also identified a number of funding strategies:

- **State & Federal grants:** a financial award given by a government or other outside agency for beneficial projects.
- **Measure GG:** 1/2 cent sales tax approved by voters in 2016.
- **Development Impact Fees:** One-time charges imposed by the City on new or proposed development projects.
- **Capital Funds:** Newark's existing or anticipated revenue.
- **Other:** local bond measures

Final recommendations & directions paragraph to be added after City Council presentation



PROJECT PARTICIPATION

Project Management Team (PMT), City of Newark

Roya Gonzalez, Senior Management Analyst

David Benoun, Newark City Manager

Lenka Hovorka, Assistant City Manager

Steven Turner, Community Development Director

Soren Fajeau, Public Works Director

Nick Cuevas, Recreation & Community Services Director



CONSULTANT TEAM

Group 4 Architecture, Research + Planning, Inc.
211 Linden Avenue
South San Francisco, CA 94080

Andrea Gifford, Principal
Grace Tilghman, Planner
Nicole Ghiselli, Architect
650.871.0709 | www.g4arch.com

TenOver Architects
Candice Wong, Principal
Jesse Pereira, Project Architect
805.541.1010 | www.tenoverstudio.com

Bureau Veritas Technical Assessments
Erik Piller, Senior Vice President
Mary Venable, Lead Project Manager
800.733.0660 | www.bureauveritas.com

TBD Consultants
Gary Holland, Principal
415.981.9430 | www.tbdconsultants.com

Aquatic Design Group
Dennis Berkshire, President
Michelle Gable, Associate
760.438.8400 | www.aquaticdesigngroup.com



COMMUNITY, RECREATION, AND AQUATIC FACILITIES

NEWARK COMMUNITY CENTER



RECOMMENDATION: **REPLACE**

Address: *35501 Cedar Boulevard, Newark, CA 94560*

Built: *1968*

Size: *13,400 square feet*

Site Area: 3.75 acres

Estimated Project Cost:

18,000 SF Facility: $30,796,000

25,000 SF Facility: $44,289,000

32,000 SF Facility: $56,399,000

YEAR	FCI (Facility Condition Index)
Current	13.0%
3-Year	13.8%
5-Year	16.2%
10-Year	23.5%

NEWARK COMMUNITY CENTER ANNEX



RECOMMENDATION: **REPLACE**

Address: *35501 Cedar Boulevard, Newark, CA 94560*

Built: *1991*

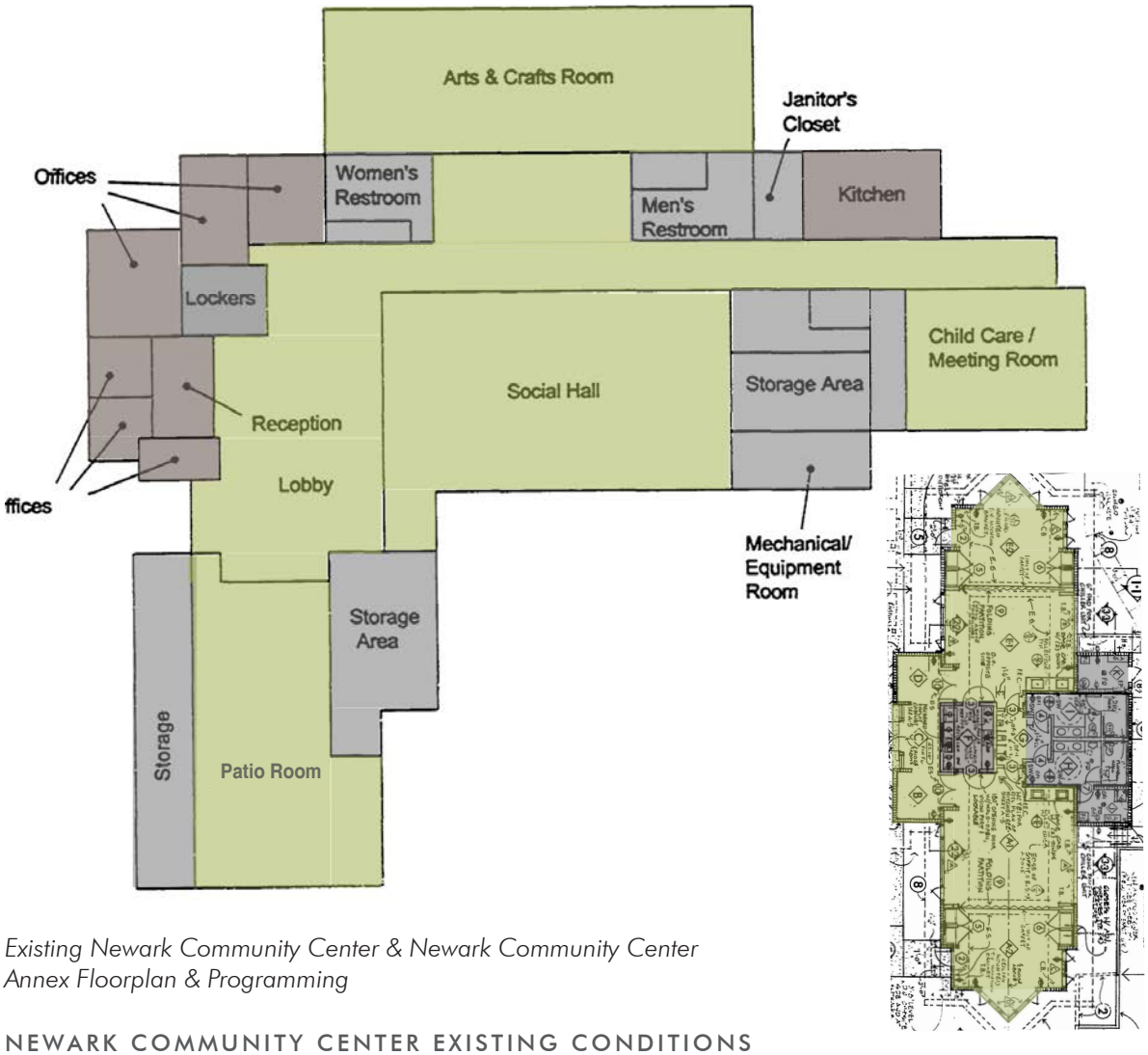
Size: *3,000 square feet*

Site Area: 3.75 acres

Estimated Project Cost:

See Community Center

YEAR	FCI (Facility Condition Index)
Current	8.7%
3-Year	10.0%
5-Year	14.2%
10-Year	29.5%



Existing Newark Community Center & Newark Community Center Annex Floorplan & Programming

NEWARK COMMUNITY CENTER EXISTING CONDITIONS

The Newark Community Center was built in 1968 and has nearly 14,000 square feet across a single story. What was once a community space for city activities and programs, room rentals, and childcare, has become mostly unoccupiable to the public except for opportunities to rent out rooms for personal events and parties. At its peak, there were functioning staff offices, a reception and lobby space, a patio room and social hall for renting, an arts and crafts room, storage, meeting space, and kitchen. In the center of the building is a large courtyard which connects the Newark Community Center to the Newark Community Center Annex, which is presently used for a popular pre-school childcare program. Newark Community Center observations are listed below.

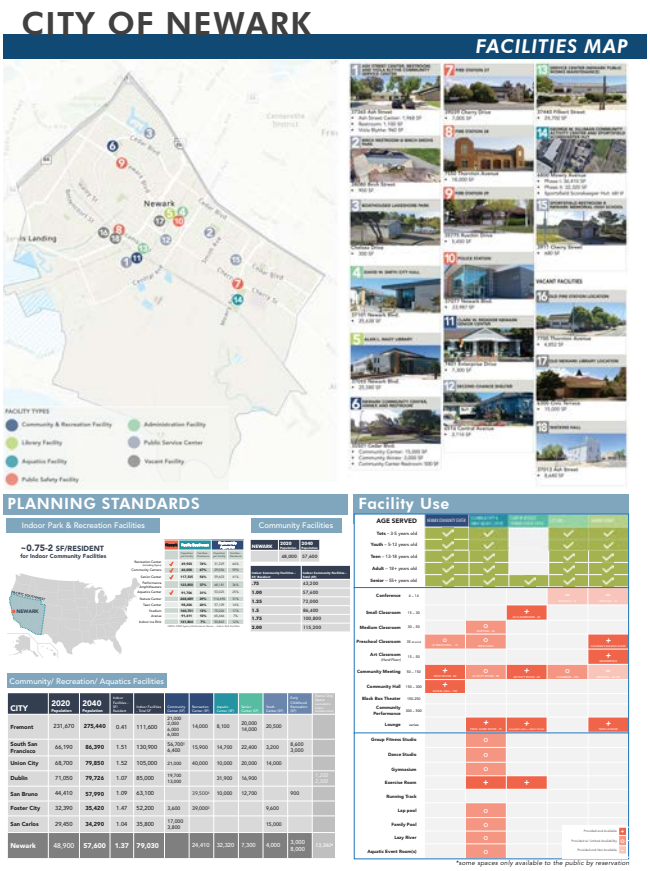
Exterior

- Building shows signs of wear and has significant maintenance needs.
- Significant water damage to roof and walls.

Interior

- Staff offices in the front of the building are not able to be occupied due to water leakage and intrusion, and rooms have been locked.
- Poor air quality and water damage in the downstairs area, currently locked and not used.
- Roof and skylights leak; have water stains and also actively drip and need buckets to catch falling water.
- Interior finishes affected by water damage, include fungal concerns.



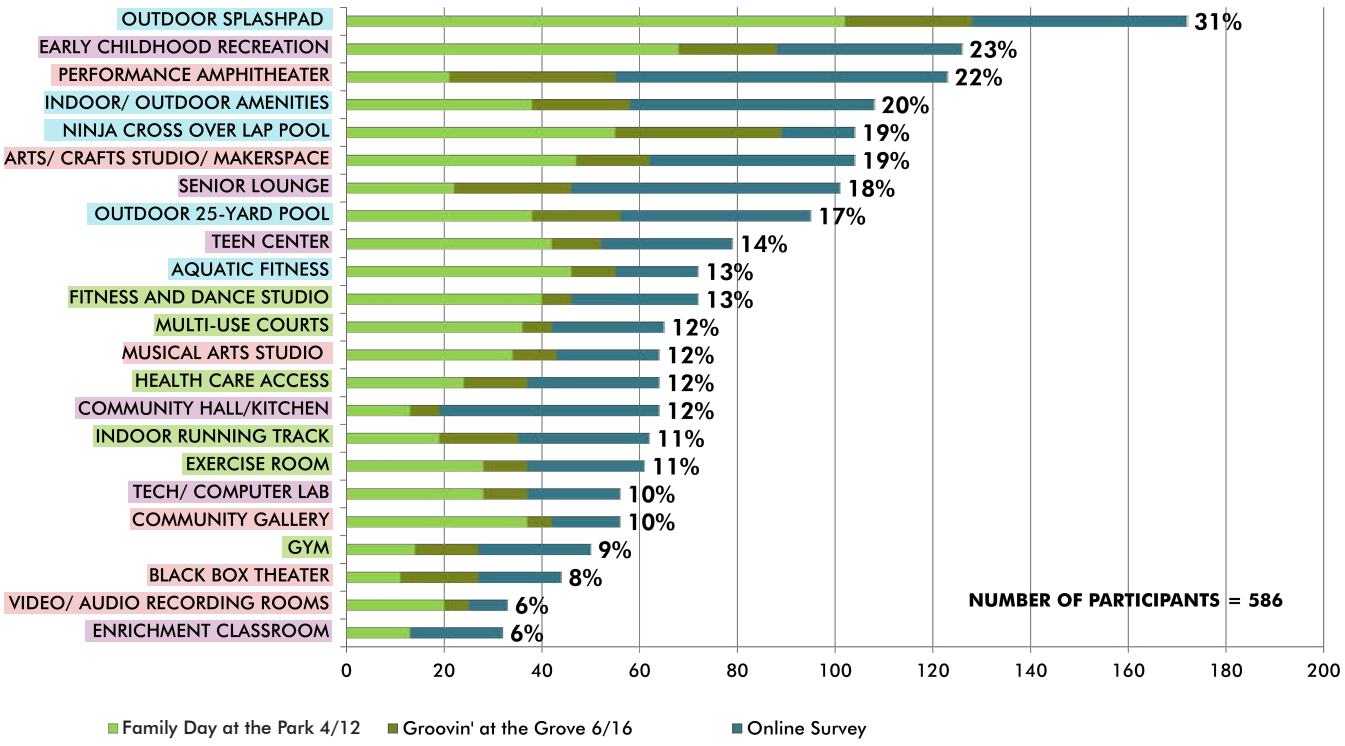


ROUND 1 COMMUNITY ENGAGEMENT

Collecting Newark community's input on city facility needs was an essential part of this planning process. With the PMT's approval and edits, Group 4 developed 5 large boards to bring to various community events as pop-ups. This first round of engagement included two in-person pop-up events plus a community survey. Nearly 600 residents participated.

The engagement boards explained the current use of each of Newark's facilities, as well as the regional planning standards for Northern California. The boards asked residents about their opinions (love it or change it) on their facilities as well as asked about their community space priorities. To inquire about residents' community space priorities, Group 4 provided 23 space options for participants to place a vote/ dot. These space options fell under four categories; community/ lounge, the arts and performance, exercise and recreation, and aquatics. The purpose of this exercise was to gain a better understanding of what types of spaces Newark's residents are looking for in their city's facilities. Below are the events that Group 4 attended for round one engagement pop-ups.

- Family Day at the Park (4/12/23)
- Groovin' at the Grove (6/16/23)



Round 1 Engagement Results

AQUATICS

The residents of Newark prioritize access to aquatic centers. Many were in agreement that indoor/ outdoor aquatics experiences, aquatic recreation such as Ninja Crossovers for pools, and aquatic fitness.

THE ARTS

The Newark community values the arts and sees the importance of public space for opportunities to hold theater performances, somewhere to practice and play music, arts/ makerspaces, a community gallery, and video/ audio recording rooms.

COMMUNITY

Designated space for specific age groups is a priority as well; the Newark community's priorities include early childhood recreation, a senior lounge, a dedicated teen center, community hall/ kitchen, computer lab, and enrichment classrooms.

RECREATION

Newark community members value spaces which allow them access to fitness and dance, a variety of sports with multi-use courts, health care, and personal fitness through gyms and exercise rooms.



Community members adding votes to their space priorities at Groovin' at the Grove.



Engagement pop-up tent for Family Day in the Park.




OUTDOOR SPRAYGROUND/
SPLASHPAD
OUTDOOR 25-YARD POOL
NINJA CROSS OVER LAP POOL
AQUATIC FITNESS
(UNDERWATER BIKES, ETC.)
OTHER?
NEWARK
NewBark
Dog Park
FACILITY INPUT
WHAT ARE YOUR OPINIONS ON NEWARK'S CURRENT
LOVE IT
What makes this Facility special for you?
CHANGE IT
What would you improve about this Facility if you could?

PLANNING STANDARDS

INDOOR PARK & RECREATION FACILITIES

~0.75-2 SF/RESIDENT
for Indoor Community Facilities



	Newark	Pacific Southwest		Nationwide Agencies	
		Population per Facility	*Facilities - Prevalence*	*Population per Facility*	*Facilities - Prevalence*
Recreation Center (Including Gyms)	✓	**49,903**	**74%**	31,329	64%
Community Centers	✓	**46,000**	**67%**	29,036	59%
Senior Center	✓	**117,335**	**54%**	59,603	41%
Performance Amphitheaters		**123,850**	**37%**	68,181	36%
Aquatics Center	✓	**91,706**	**31%**	53,025	25%
Nature Center		**268,689**	**29%**	114,696	31%
Teen Center		**98,206**	**26%**	57,109	14%
Stadium		**160,731**	**13%**	75,026	17%
Arenas		**91,411**	**10%**	65,466	7%
Indoor Ice Rink		**141,864**	**7%**	50,863	12%

NRPA's 2022 Agency Performance Review – Indoor Park Facilities

PLANNING STANDARDS

The existing Newark Community Center is not currently open for programs due to water damage like roof leakage and mold concerns in rooms that are not accessible and securely closed off. The only current use of this facility is renting out space to residents for event use. During public engagement, findings identified that Newark lacks an adequate community center. Additionally, there is a growing need for public performance and amphitheater space which a community center could provide.

Newark has just under 50,000 residents. Based on the Pacific Southwest's community facility planning standards, the City of Newark should have ~0.75-2.0 square feet of indoor community facilities per resident. These planning standards also dictate that a city of Newark's size should have more robust teen center and performance amphitheater square footage. While Newark has some recreation and teen space located at the George M. Silliman Community Activity Center and the Alan L. Nagy Library, the lack of a dedicated community center and performance space creates programming and service difficulties, both of which should be readily available to the community.

CITY	2020 Population	2040 Population	Indoor Facilities - SF/ Resident	Indoor Facilities - Total SF	Community Center (SF)	Recreation Center (SF)	Aquatic Center (SF)	Senior Center (SF)	Youth Center (SF)	Early Childhood Recreation (SF)	*Rental Only Space (excluded in indoor facilities total)*
Fremont	231,670	**275,440**	0.41	111,600	21,000 2,000 6,000 6,000	14,000	8,100	20,000 14,000	20,500		
South San Francisco	66,190	**86,390**	1.51	130,900	56,700[1] 6,400	15,900	14,700	22,400	3,200	8,600 3,000	
Union City	68,700	**79,850**	1.52	105,000	21,000	40,000	10,000	20,000	14,000		
Dublin	71,050	**79,726**	1.07	85,000	19,700 13,000		31,900	16,900			*1,200* *2,300*
San Bruno	44,410	**57,990**	1.09	63,100		39,500[4]	10,000	12,700		900	
Foster City	32,390	**35,420**	1.47	52,200	3,600	39,000[3]			9,600		
San Carlos	29,450	**34,290**	1.04	35,800	17,000 3,800				15,000		
Newark	48,900	**57,600**	**1.37**	**79,030**		24,410	32,320	7,300	4,000	3,000 8,000	*13,340[6]*

Comparable cities and Newark's existing community space

As shown in the chart above, Newark's indoor facility square feet per resident is currently 1.37 SF. Newark's goal SF/capita is between 1.5 and 1.75. The amount of indoor communty square footage needed to achieve those goals is detailed in the chart below.

NEWARK	2020 Population	2040 Population
	48,000	57,600

Indoor Community Facilities - SF/ Resident	Indoor Community Facilities - Total (SF)	New Facility / Addition (SF)	Existing Facilities (SF)
.75	43,200	**0**	79,030
1.00	57,600	**0**	79,030
1.25	72,000	**0**	79,030
1.5	86,400	**+ 7,370**	79,030
1.75	100,800	**+ 21,770**	79,030
2.00	115,200	**+ 36,170**	79,030

Community facility planning standards

ALTERNATIVE OPTIONS PROCESS

Round 1 engagement results and existing space analysis show that a larger and better functioning community center is needed. Because of Newark's current population and projected population growth, The City needs space to provide programs, services, and recreation space to residents. Additionally identified in outreach was the need for a community performance space and/ or large community rooms.

With the PMT, Group 4 developed new potential site options for a community center, either on its existing site at Newark Community Park, or in Civic Center Park in place of the Old Library which currently is closed to the public.

NEWARK COMMUNITY CENTER



3-YEAR FCI: **13.0%**

10-YEAR FCI: **23.5%**

- **CONSTRAINTS:** Mold detected in non-occupiable areas. Water damage from ongoing leaks and potential structural issues.
- **COMMUNITY BENEFITS:** Large rooms for community events with adjacent outdoor courtyard for indoor/ outdoor

NEWARK COMMUNITY CENTER ANNEX



3-YEAR FCI: **8.7%**

10-YEAR FCI: **29.5%**

- **CONSTRAINTS:** Mold detected in non-occupiable areas. Lack of proper staff and storage space.
- **COMMUNITY BENEFITS:** Provides much needed early childcare with proximity to park and playground.

CLARK W. REDEKER SENIOR CENTER



3-YEAR FCI: **2.7%**

10-YEAR FCI: **22.9%**

- **CONSTRAINTS:** Current program rooms are undersized to meet senior needs. Staff spaces are dispersed and reaching capacity.
- **COMMUNITY BENEFITS:** Space for senior activities and the opportunity for residents to meet and interact.

OLD LIBRARY



3-YEAR FCI: **8.1%**

10-YEAR FCI: **22.7%**

- **CONSTRAINTS:** Facility is currently unoccupied and in need of repair. Limited visibility from street.
- **COMMUNITY BENEFITS:** Proximity to David W. Smith City Hall, Alan L. Nagy Library, and Newark Civic Park.

BASE - A

SQUARE FEET
~18,000 SF, 1-Story

1ST FLOOR FOOTPRINT
~18,000 SF

CAPITAL COST
$$$ – $$$$

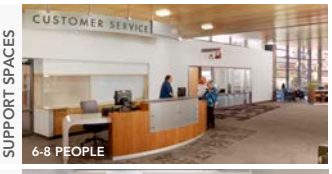
PARKING
~60 – 130 spaces















A

B

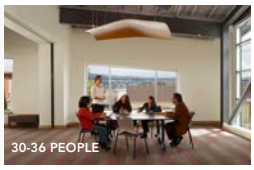
SQUARE FEET
~25,000 SF, 2-Story

1ST FLOOR FOOTPRINT
~18,000 SF

CAPITAL COST
$$$$ – $$$$$

PARKING
~80 – 150 spaces

BASE +











B

C

SQUARE FEET
~32,000 SF, 2-Story

1ST FLOOR FOOTPRINT
~20,000 SF

CAPITAL COST
$$$$$ – $$$$$$

PARKING
~105 – 175 spaces

BASE + B +







C

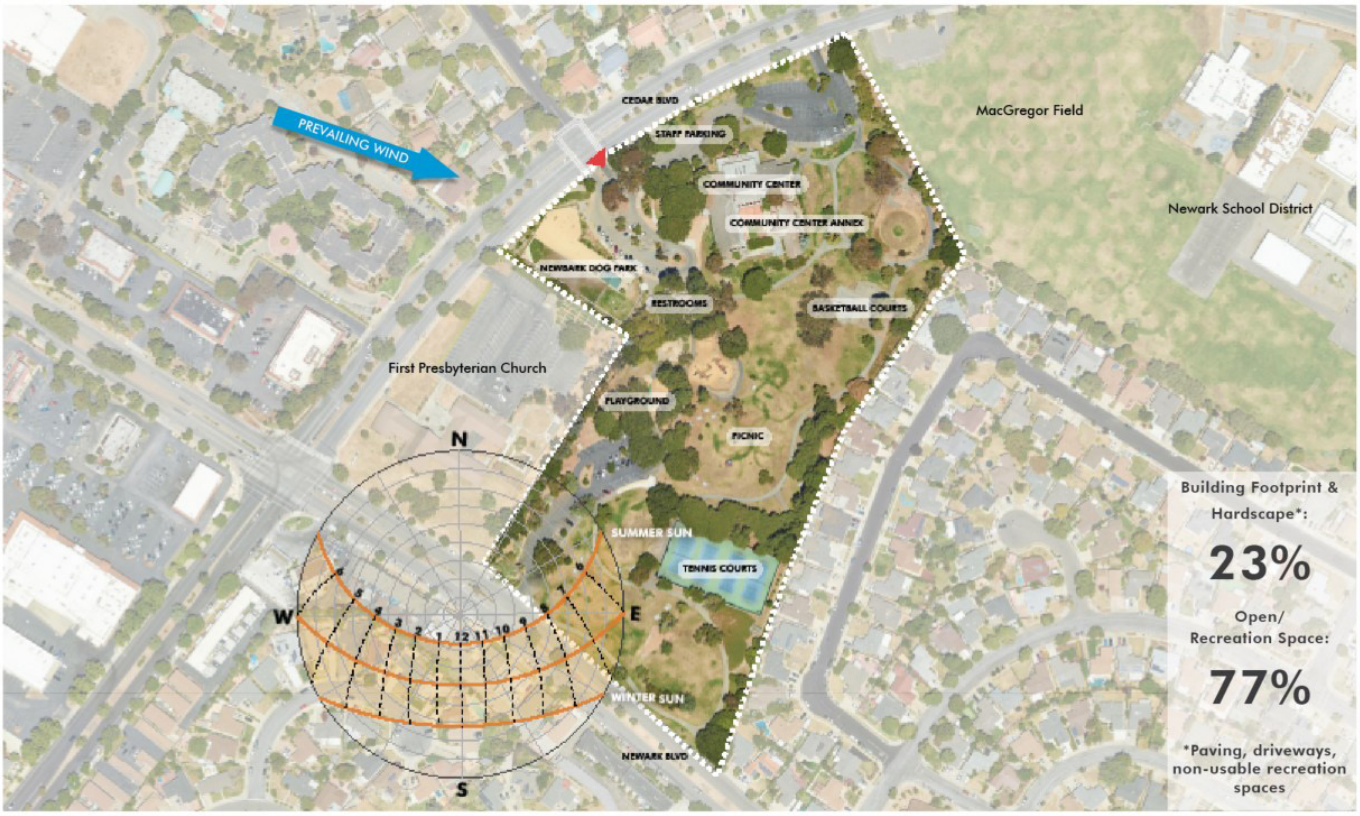
COMMUNITY CENTER PROGRAM OPTIONS

Above are program options for a new community center that range in size from a single story with 18,000 square feet to 32,000 square feet with two stories. Base A includes modern community center spaces such as preschool classrooms, staff space, a large community room, gallery space, and art classrooms. Each option builds off of the last, with Option C including all of A and B program spaces as well.

SITE OPTIONS

COMMUNITY PARK

EXISTING COMMUNITY PARK ANALYSIS



COMMUNITY PARK OPTIONS



NEWARK COMMUNITY PARK ANALYSIS AND OPTIONS

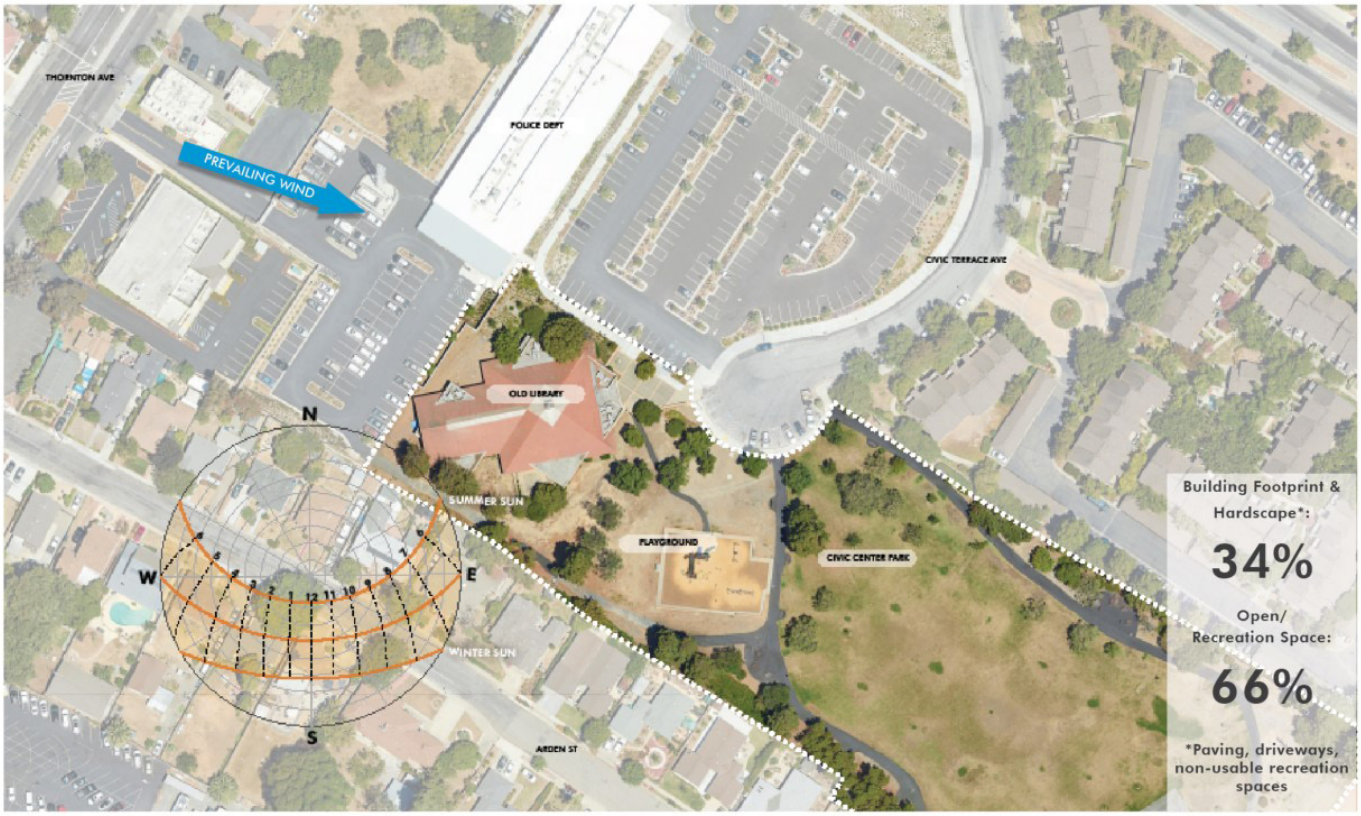
The Newark Community Park includes ample green space, parking, multiple sport courts such as basketball and tennis, a playground, and the NewBark Dog Park. The existing Newark Community Center building is surrounded by public and staff parking lots, one of which is shared with the NewBark Dog Park.

The above program options for a new community facility range from 18,000 square feet and 1 story to 32,000 square feet and 2 stories. Base A includes modern community center spaces such as preschool classrooms, staff space, a large community room, gallery space, and art classrooms. Options B and C build off of A, and option C includes A, B, and C spaces as the largest option.

SITE OPTIONS

CIVIC CENTER PARK

EXISTING CIVIC CENTER PARK ANALYSIS



CIVIC CENTER PARK OPTIONS



NEWARK CIVIC CENTER PARK ANALYSIS AND OPTIONS

Newark Civic Center Park is connected to the Alan L. Nagy Library, David W. Smith City Hall, and Newark Police Department by a large parking lot and includes a large green lawn, playground, and Newark's Old Library building that is currently not open to the public. This site option shows that a new community center could take the place of the Old Library, either by repurposing or constructing a new building in place of it.

Option A, with 18,000 square feet, requires less parking spaces, but will still encroach on the park's existing playground and green space. As the program options get larger, more parking spaces are needed, and more of the park will become used for the new building.

EVALUATION CRITERIA (POOR / FAIR / EXCELLENT)	COMMUNTY CENTER & ANNEX AT COMMUNITY PARK				OLD LIBRARY AT CIVIC CENTER PARK			
	Base- A (18k SF)		Base+B (25k SF)	Base+B+C (32k SF)	Base- A (18k SF)		Base+B (25k SF)	Base+B+C (32k SF)
	Renovate Community Center & Annex	Replace Community Center & Annex	Consolidate: Relocate/ replace Senior Center	Expanded Community Center	Renovate Old Library	Replace Old Library	Consolidate: Relocate/ replace Senior Center	Expanded Community Center
TOP CRITERIA: OPERATIONAL EFFICIENCY	🔴	🟢	🟢	🟢	🔴	🟢	🟢	🟢
TOP CRITERIA: COMMUNITY NEEDS	🔴	🟢	🟢	🟢	🔴	🟢	🟢	🟢
TOP CRITERIA: COSTS	🟢	🟡	🔴	🔴	🟢	🟡	🔴	🔴
VISIBILITY	🟡	🟢	🟢	🟢	🟡	🟡	🟡	🟡
SYNERGY/ CONNECTIVITY	🟡	🟡	🟢	🟢	🟡	🟡	🟢	🟢
BLDG/ PARK RELATIONSHIP	🟡	🟢	🟢	🟢	🔴	🔴	🔴	🔴
ACCESSIBILITY	🟡	🟢	🟢	🟢	🟡	🟢	🟢	🟢
ENVIRONMENT	🟡	🟢	🟢	🟢	🟡	🟢	🟢	🟢

FUNCTIONALITY



Does the facility prioritize functional design and inherent flexibility to best serve the community, support the operational efficiency, and support programs now and well into the future?

SUSTAINABILITY



Sustainability, both environmental and operational, will be fundamental in the location and design of the community center.

OPERATIONAL EFFICIENCY



Can the City continue to provide excellent programs to the residents of Newark? Does the facility enhance or decrease the number of staff required to operate the facility?

COMMUNITY NEEDS



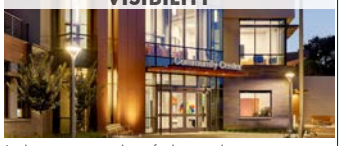
Does the facility meet the needs of the Community? Does it support the programs and events for the community?

COSTS



What are the total development costs? Costs including site infrastructure (sewer, water, power, roads), site entitlement costs (CEQA), site and building construction costs, and potential relocation costs for existing users?

VISIBILITY



Is the entrance and wayfinding to the new community center site clear for visitors? Is the facility visible and easily identifiable as one enters the site? Does it have civic presence?

SYNERGY/ CONNECTIVITY



Is there opportunity for the facility to enhance the community and be a dynamic amenity for residents? Does the facility have good connectivity to other community services, such as other community centers, schools, or parks?

BLDG/ PARK



Does the facility offer the opportunities to expand or improve the existing park amenities? Does is complement existing park use? Is there an opportunity to develop shared parking in order to conserve resources?

ACCESSIBILITY



Is the facility easy to get to, not only by car but by alternative modes of transportation? Are pedestrians and cyclist able to navigate throughout the site? Is the circulation into and out of the site efficient, disruptive or dangerous?

ENVIRONMENT

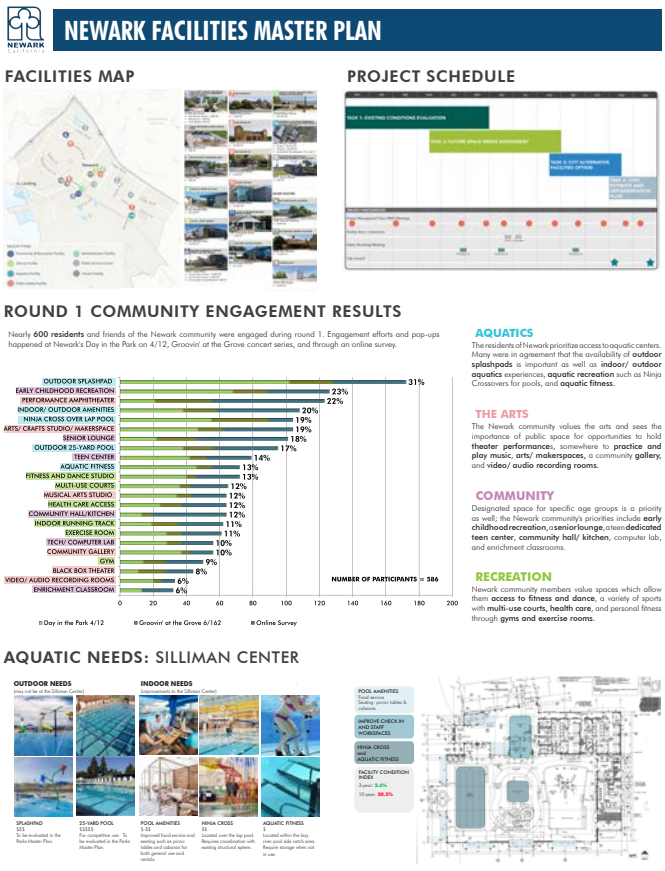


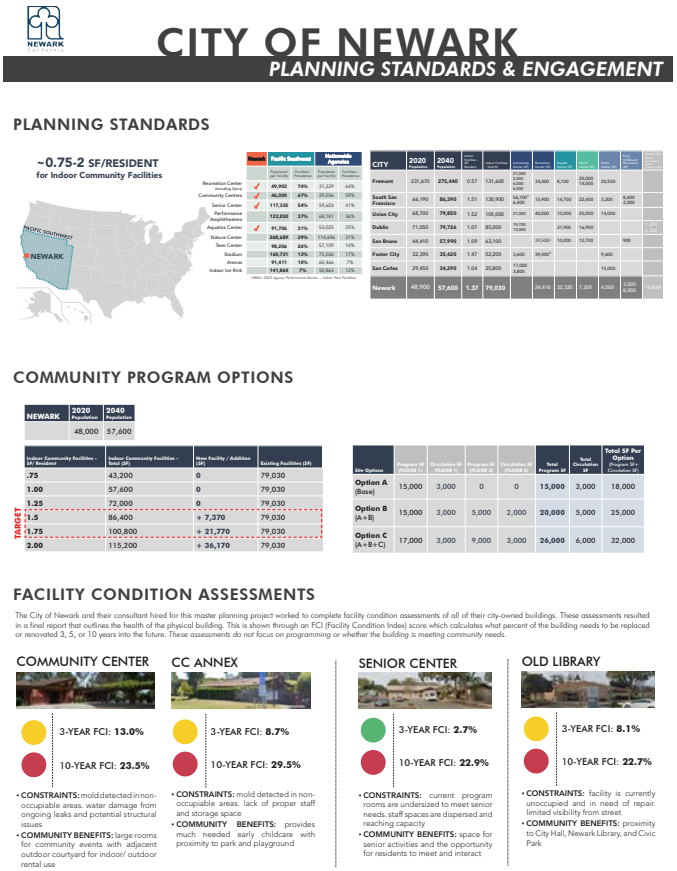
Are there extraordinary environmental risks associated with the site (seismic, sea level rise) that will impact the construction costs, longevity, operations, or maintenance costs for the building or site improvements?

SITE OPTION EVALUATION

Each of the site options and program options were evaluated based on the criteria outlined above. Most importantly, operational efficiency, community needs, and cost were highlighted for all options as well as functionality and sustainability which are prerequisites and assumed to be included and improved for all future Newark projects.

As seen above, program options B and C at Newark Community Park which suggest consolidating the Newark Community Center and the Clark W. Redeker Senior Center into one new building, and expanding the Newark Community Center have most "excellent" ratings.



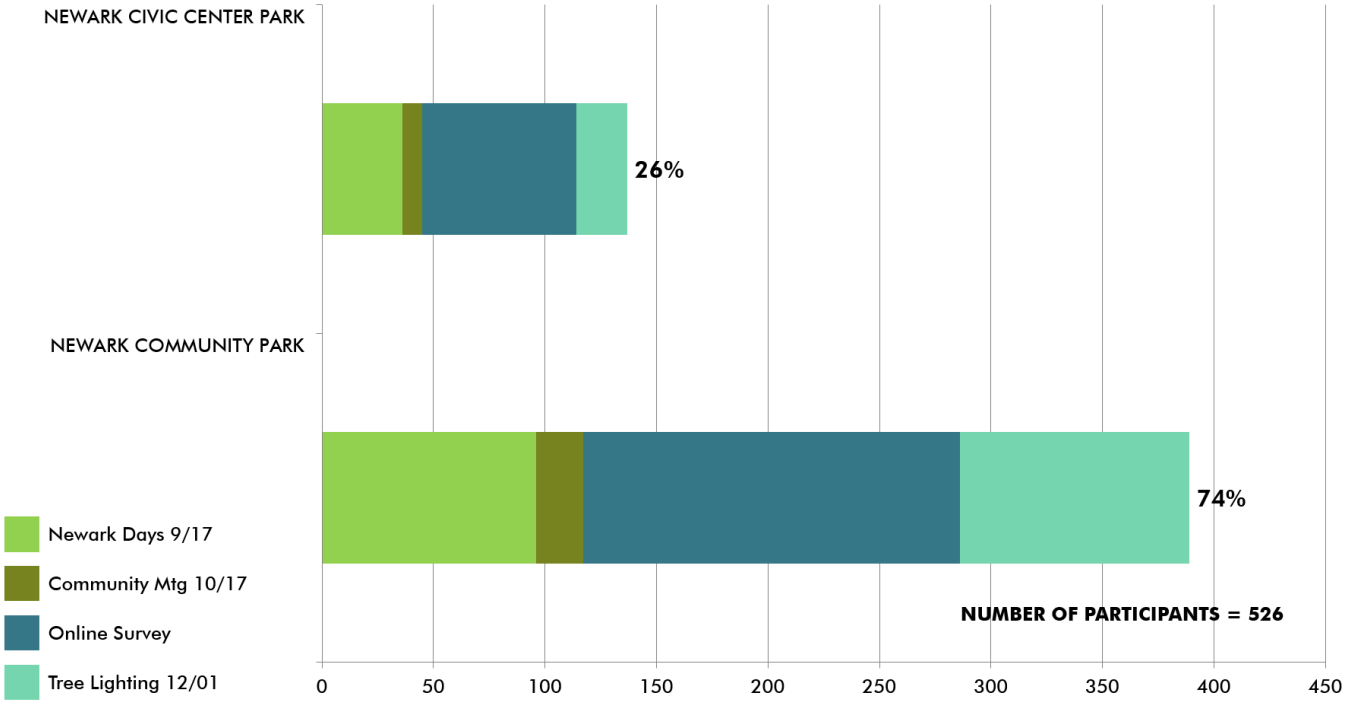


ROUND 2 ENGAGEMENT

The second round of community engagement for this master planning process involved bringing the site options and program options that were identified by the PMT and Group 4 to the public. These options were presented through pop-ups, community meetings, and an online community survey. Participants first chose which site they would prefer a new community center to be built on, and then which program option they would prefer on the chosen site.

Community members had the chance to engage with the pop-up boards at the following events:

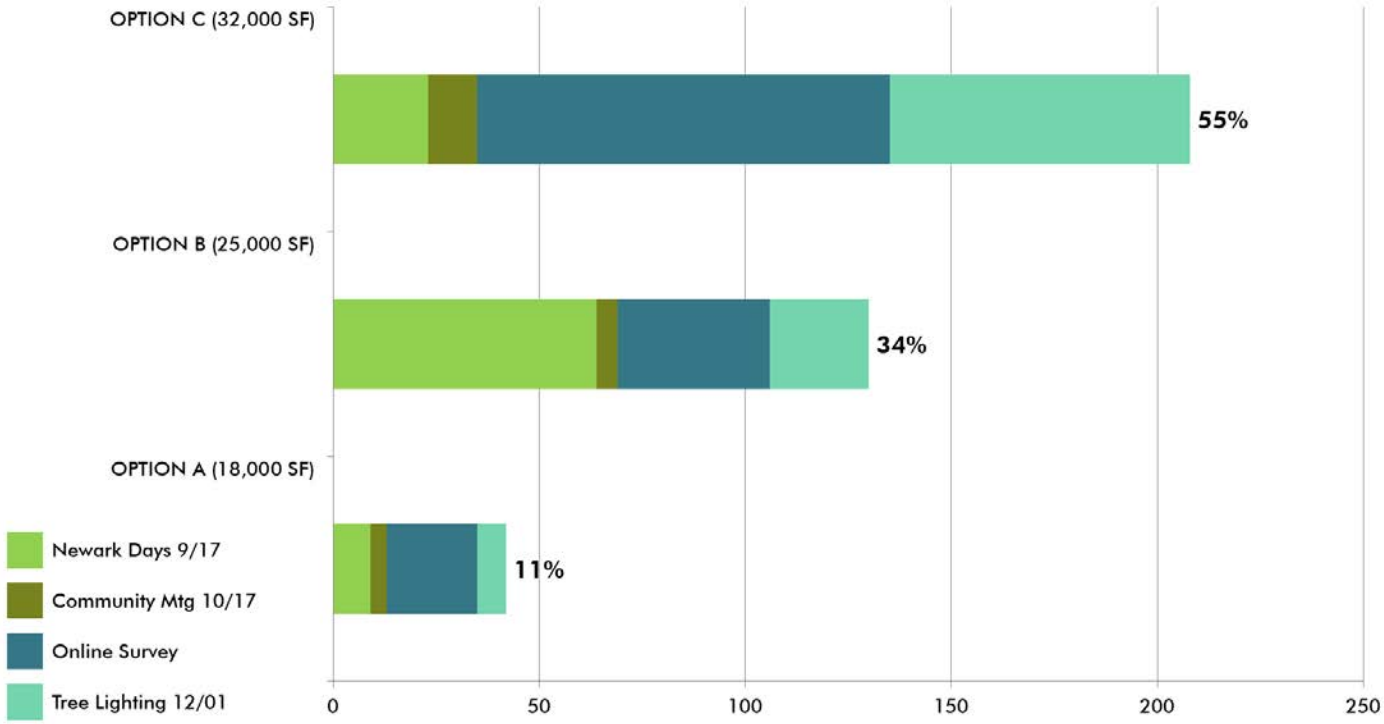
- Newark Days (9/17/2023)
- Community meeting and open house at Alan L. Nagy Library (10/17/2023)
- Newark Tree Lighting (12/01/2023)

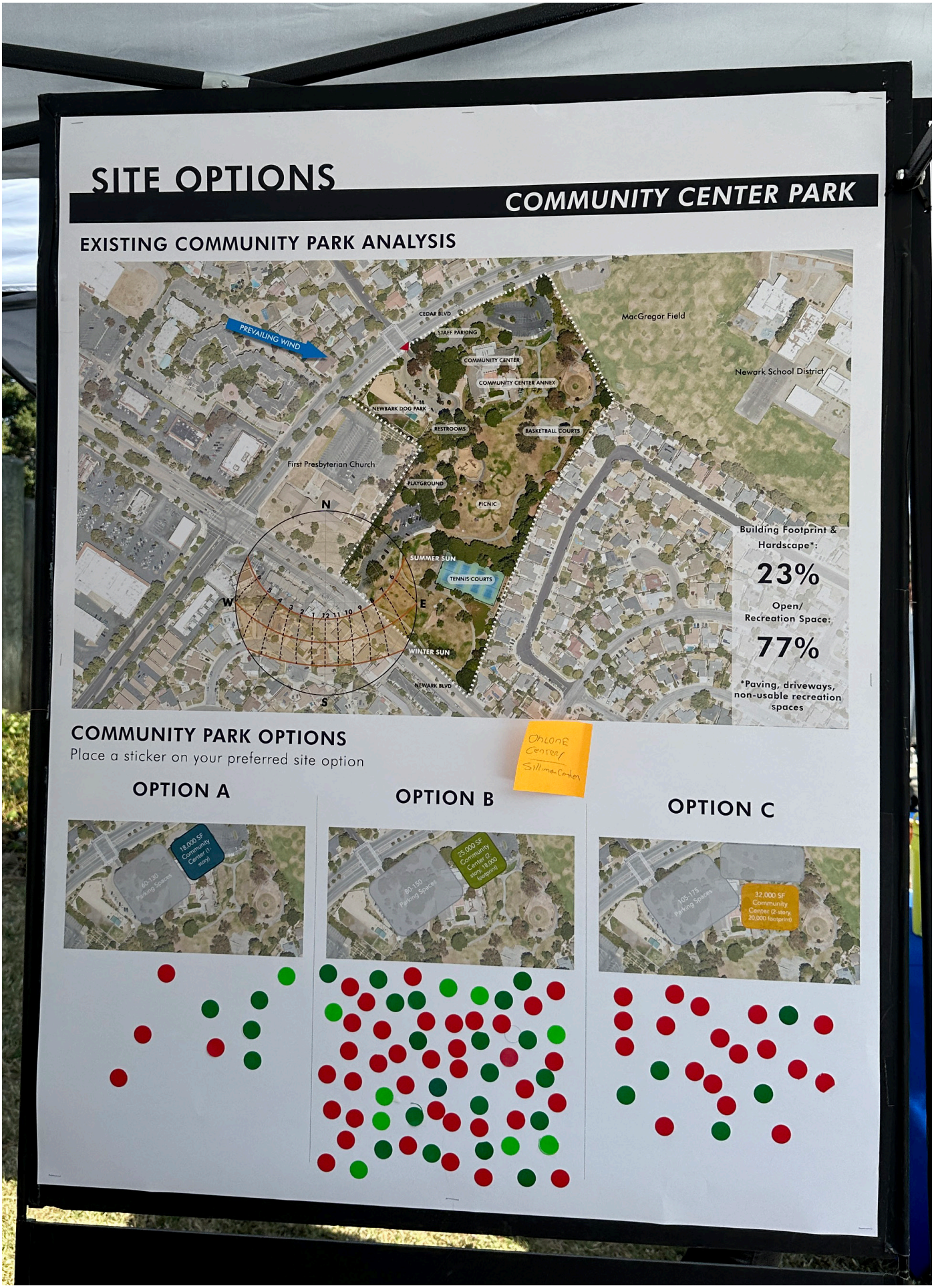


ROUND 2 ENGAGEMENT RESULTS

Between the two site options, the Newark Community Park option was most voted for during all instances of engagement including the online survey.

The program option most popular amongst people who voted for the Newark Community Park site was Option C at 32,000 square feet.




SITE OPTIONS
COMMUNITY CENTER PARK
EXISTING COMMUNITY PARK ANALYSIS
PREVAILING WIND
CEDAR BLVD
STAFF PARKING
COMMUNITY CENTER
COMMUNITY CENTER ANNEX
NEWBARK DOG PARK
RESTROOMS
BASKETBALL COURTS
MacGregor Field
Newark School District
First Presbyterian Church
PLAYGROUND
PICNIC
SUMMER SUN
TENNIS COURTS
WINTER SUN
NEWARK BLVD
N
E
S
W
Building Footprint & Hardscape*:
23%
Open/ Recreation Space:
77%
*Paving, driveways, non-usable recreation spaces
COMMUNITY PARK OPTIONS
Place a sticker on your preferred site option
Online
Century
Sillima Center
OPTION A
18,000 SF Community Center (1-story)
60-130 Parking Spaces
OPTION B
25,000 SF Community Center (2-story, 18,000 footprint)
80-150 Parking Spaces
OPTION C
32,000 SF Community Center (2-story, 20,000 footprint)
105-175 Parking Spaces

CLARK W. REDEKER SENIOR CENTER



RECOMMENDATION: **MAINTAIN**

Address: *7401 Enterprise Drive, Newark, CA 94560*

Built: *1979*

Size: *7,300 square feet*

Site Area: 0.84 acres

YEAR	FCI (Facility Condition Index)
Current	0.3%
3-Year	2.7%
5-Year	4.9%
10-Year	22.9%



REDEKER SENIOR CENTER EXISTING CONDITIONS

Located on Enterprise Drive, the Clark W. Redeker Senior Center has 7,300 square feet of building space on a single story and sits on a 0.84-acre site next to Ash Street Park. Clark W. Redeker Senior Center also faces the Newark Service Center across the street. The site was developed in two phases, the first in 1979 and the second in 1992 and it received some updates in 2007.

Free memberships to the Clark W. Redeker Senior Center are available to anyone age 55 or older. Eligible adults can have opportunities to engage in activities such as dance, educational classes, and budget-friendly special events. Members can also get information and referrals to outside agencies for Medicare, relocation help, Social Security, and downsizing resources.

The building itself is in overall good condition, but is small, outdated, and has maintenance needs. Some of the key findings from the facility condition assessment report include the movable partitions, foodservice equipment, and ADA kitchen and laundry areas as immediate needs and in poor condition. Clark W. Redeker Senior Center, though located next to a park, is not in a prime location to provide community programs, especially to an age group that can have limited access to safe transportation options. The building lacks the space and technology to accommodate modern adult recreation needs.

GEORGE M. SILLIMAN COMMUNITY ACTIVITY CENTER



RECOMMENDATION: **MAINTAIN**

Address: *6800 Mowry Avenue, Newark, CA 94560*

Built: *Phase I: 2000, Phase II: 2004*

Size: *68,740 square feet*

Estimated Project Costs:

Recreation Improvements: $3,275,000

Aquatic Improvements: $6,672,000

YEAR	FCI (Facility Condition Index)
Current	0.8%
3-Year	2.6%
5-Year	7.5%
10-Year	20.5%

EXISTING FLOOR PLAN



GEORGE M. SILLIMAN COMMUNITY ACTIVITY CENTER EXISTING CONDITIONS

The George M. Silliman Community Activity Center, located on Mowry Avenue, was constructed in two phases, Phase I in 2000, and Phase II in 2004. In total, the activity center has nearly 69,000 square feet of recreation space such as a large aquatic facility, teen center, and sport courts. The aquatic facility includes a large lap pool, water slide, and waterspout play structure. Observations of this facility are listed below.

Indoor Aquatics

- Check In and staff workspaces are outdated and limited. Currently, there is one office for the aquatics manager, a small workroom for staff and a small staff lounge.
- The lap pool lacks modern aquatic recreation functionality such as aquatic fitness machines and ninja cross systems.

Outdoor

- Not many outdoor amenities such as general seating, picnic tables and/ or cabanas.
- Food services areas are additionally outdated and small.

AQUATIC NEEDS SILLIMAN CENTER

Outdoor Needs
(may not be at the Silliman Center)

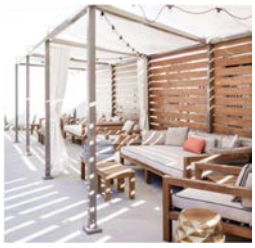
Indoor Needs
(improvements to the Silliman Center)

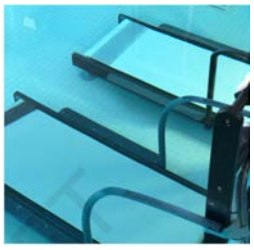












Splashpad
$$$
To be evaluated in the Parks Master Plan

25-Yard Pool
$$$$$
For competitive use. To be evaluated in the Parks Master Plan

POOL AMENITIES
$-$$
Improved food service and seating such as picnic tables and cabanas for both general use and rentals.

NINJA CROSS
$$
Located over the lap pool. Requires coordination with existing structural system.

AQUATIC FITNESS
$
Located within the lazy river pool side catch area. Require storage when not in use.

POTENTIAL FUTURE PROJECTS

Throughout the duration of this planning process, several potential projects for the George M. Silliman Community Activity Center were identified for both the general recreation spaces and aquatics.

Recreation Projects*

Recreation spaces within the George M. Silliman Community Activity Center are in need of bigger and better storage solutions for their program spaces. Additionally, there are several areas of the recreation space that are underutilized and could be activated to provide additional programs. The Newark community expressed a need for additional multi-use gym and court space as well as an indoor walk/ run track during the community engagement process for this master plan.

Aquatic Projects*

As identified through community engagement efforts and existing facility analysis, there are aquatic needs that will be addressed through future projects such as improving and modernizing pool amenities. These amenities include food service and outdoor seating options. Additionally, the staff workspaces need updating as well as the public check in station. Also identified by the Newark community is a desire for updated aquatic recreation systems like Ninja Cross and aquatic fitness machines.

Location of potential future projects shown graphically on page 39.

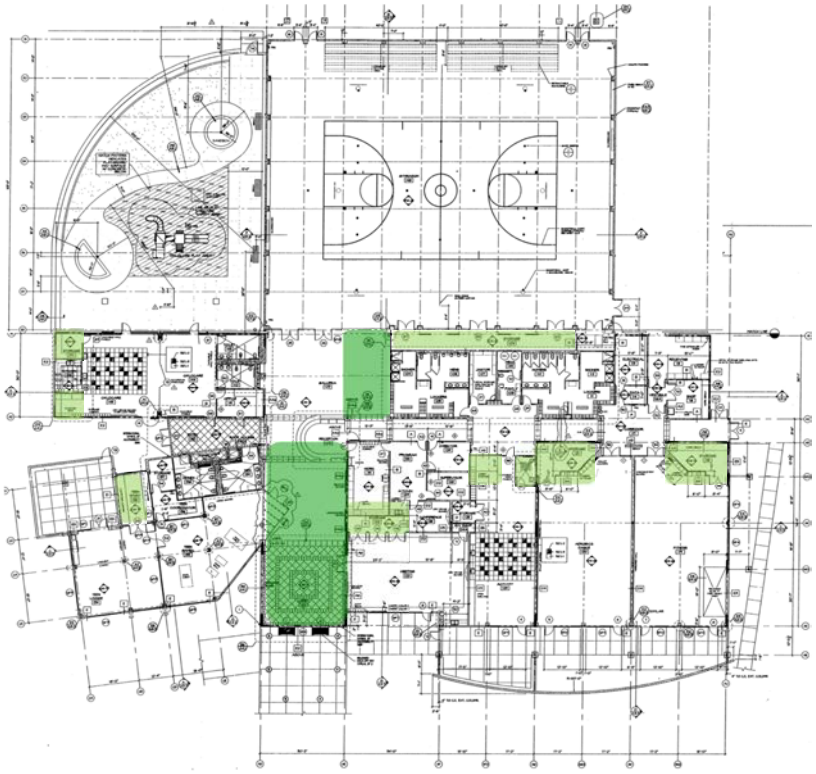
RECREATION NEEDS

SILLIMAN CENTER

GENERAL
Improved storage for all program spaces

GENERAL
Look at underutilized space for additional program opportunities

FUTURE NEEDS
Multi use gym and courts with indoor walk/run track



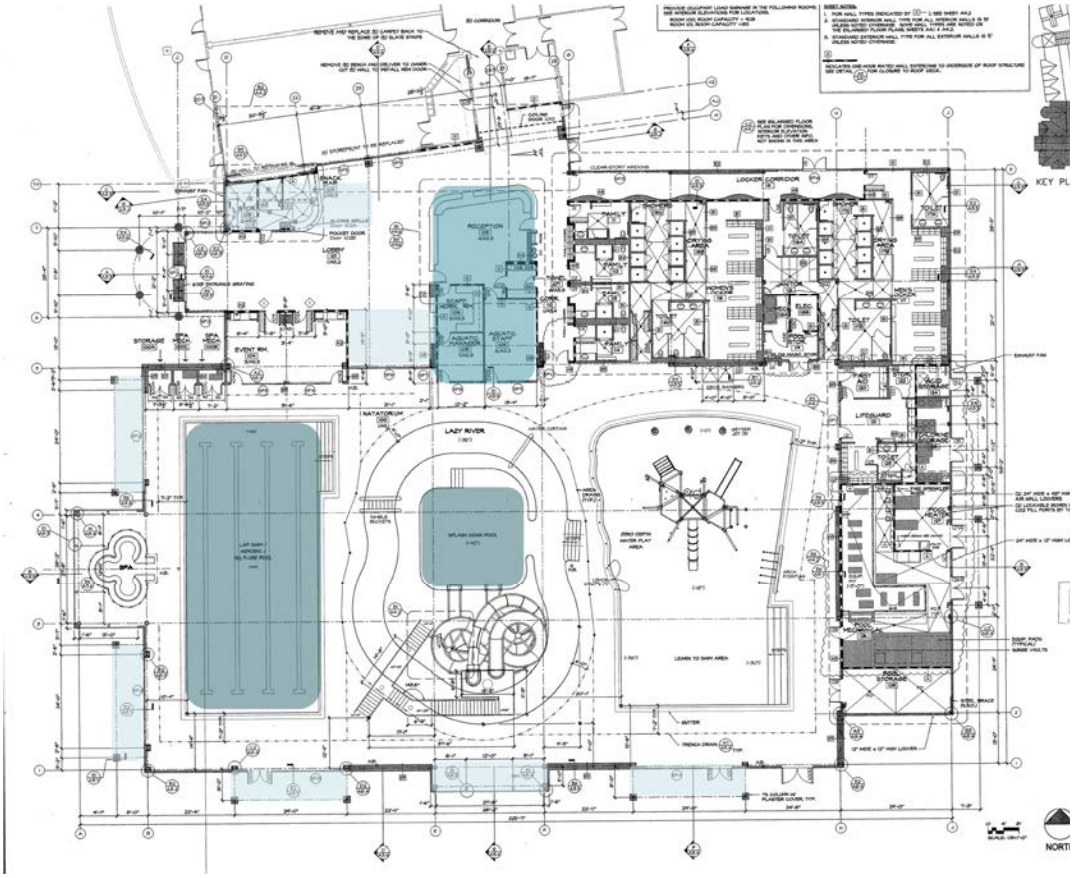
AQUATIC NEEDS

SILLIMAN CENTER

POOL AMENITIES
Food service
Seating: picnic tables & cabanas

IMPROVE CHECK IN AND STAFF WORKSPACES

NINJA CROSS and AQUATIC FITNESS



ASH STREET RECREATION



RECOMMENDATION: **MAINTAIN**

Address: *37365 Ash Street, Newark, CA, 94560*

Built*: *1970, 1979, 2002*

Size: *4,430 square feet total*

Site Area: 0.66 acres

**Renovation planned for FY24/25*

YEAR	FCI (Facility Condition Index)
Current	2.2%
3-Year	7.6%
5-Year	12.0%
10-Year	25.0%

BIRCH GROVE PARK RESTROOMS



RECOMMENDATION: **RENOVATE**

Address: *38080 Birch Street, Newark, CA 94560*

Built: *1975*

Size: *900 square feet*

Site Area: 0.2 acres



Interior of park restrooms

YEAR	FCI (Facility Condition Index)
Current	1.8%
3-Year	3.5%
5-Year	22.6%
10-Year	29.8%

LAKESHORE PARK BOATHOUSE



RECOMMENDATION: **MAINTAIN**

Address: *Chelsea Drive, Newark, CA, 94560*

Built: *2019*

Size: *300 square feet*

Site Area: 0.4 acres

YEAR	FCI (Facility Condition Index)
Current	0.9%
3-Year	0.9%
5-Year	9.7%
10-Year	12.4%

NEWARK COMMUNITY PARK RESTROOMS



RECOMMENDATION: **REPLACE**

Address: *35501 Cedar Boulevard, Newark, CA 94560*

Built: *1991*

Size: *500 square feet*

**See Community Center on page 18*

YEAR	FCI (Facility Condition Index)
Current	2.7%
3-Year	35.4%
5-Year	37.5%
10-Year	93.3%

ALAN L. NAGY NEWARK LIBRARY



RECOMMENDATION: **MAINTAIN**

Address: *37055 Newark Blvd. Newark, CA 94560*

Built: *2022*

Size: *25,600 square feet*

Site Area: 0.66 acres

YEAR	FCI (Facility Condition Index)
Current	0.0%
3-Year	0.0%
5-Year	0.0%
10-Year	4.5%

SPORTSFIELD RESTROOM



RECOMMENDATION: **RENOVATE**

Address: *3911 Cherry Street, Newark, CA 94560*

Built: *1992*

Size: *680 square feet*

YEAR	FCI (Facility Condition Index)
Current	0.6%
3-Year	8.9%
5-Year	14.5%
10-Year	41.0%

OLD NEWARK LIBRARY (VACANT)



RECOMMENDATION: SELL, REPURPOSE, OR DEMOLISH

Address: *6300 Civic Terrace, Newark, CA 94560*

Built: *1983*

Size: *15,560 square feet*

Site Area: 1.00 acre

YEAR	FCI (Facility Condition Index)
Current	8.1%
3-Year	17.1%
5-Year	18.7%
10-Year	22.7%

WATKINS HALL (VACANT)



RECOMMENDATION: SELL, REPURPOSE, OR DEMOLISH

Address: *37013 Ash Street, Newark, CA 94560*

Built: *1896*

Size: *8,640 square feet*

YEAR	FCI (Facility Condition Index)
Current	12.6%
3-Year	21.9%
5-Year	24.2%
10-Year	25.4%



ADMINISTRATION, PUBLIC SAFETY, & SERVICE FACILITIES

DAVID W. SMITH CITY HALL



RECOMMENDATION: **MAINTAIN**

Address: *37101 Newark Blvd. Newark, CA, 94560*

Built: *2022*

Size: *25,600 square feet*

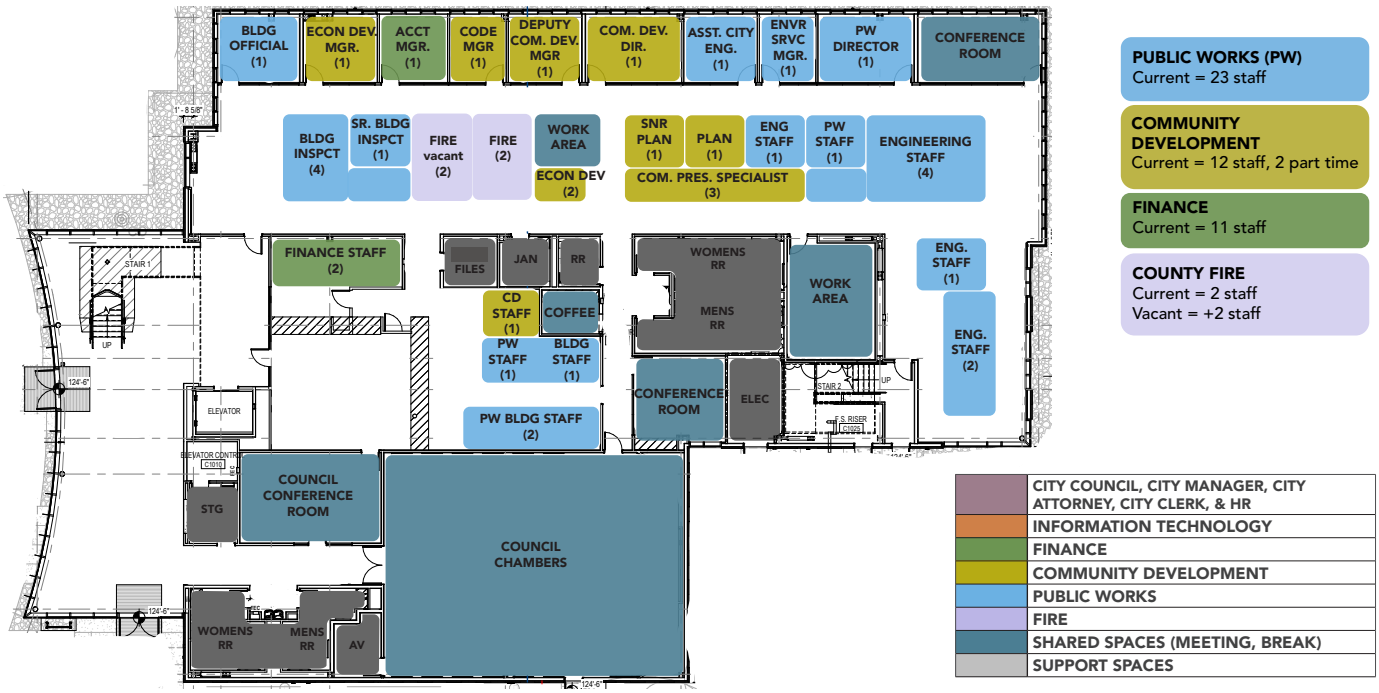
Site Area: 3.84 acres

Estimated Project Costs:

City Hall Improvements: $2,037,000

YEAR	FCI (Facility Condition Index)
Current	0.0%
3-Year	0.0%
5-Year	0.1%
10-Year	3.8%

EXISTING FLOOR PLAN 1ST FLOOR



DAVID W. SMITH CITY HALL EXISTING CONDITIONS

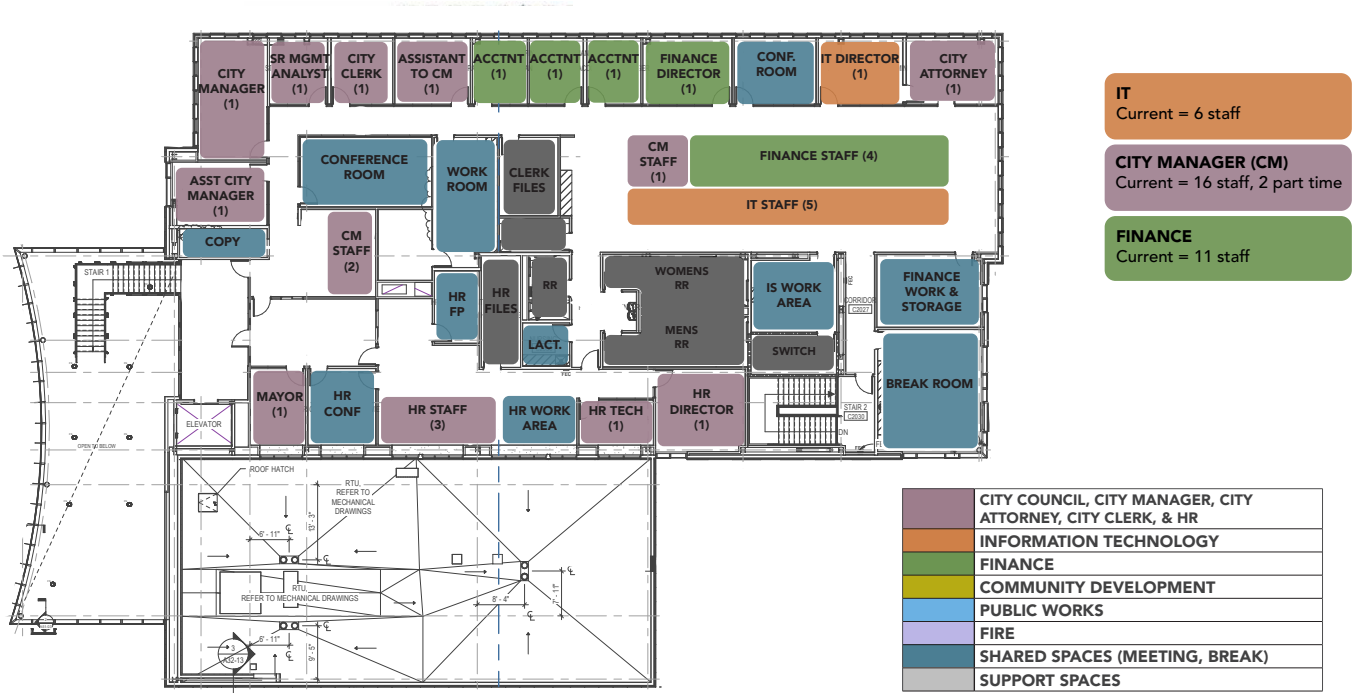
The David W. Smith City Hall was designed and constructed in 2020 by Perkins & Will and Webcor as part of the Civic Center campus along with the new Alan L. Nagy Newark Library and Newark Police Department. It currently has nearly 25,600 square feet across two floors and 68 full time staff with 4 part time. It includes the City Administration (City Manager, City Attorney, City Clerk, HR), Information Technology (IT), Finance, Community Development, Public Works, and Fire prevention departments. Also located within David W. Smith City Hall are Newark's City Council Chambers and conference room, several department workstations and conference rooms, breakrooms, two public service counters, and a large public lobby. The building is modern and full of natural light with a public staircase and elevator linking the two floors.

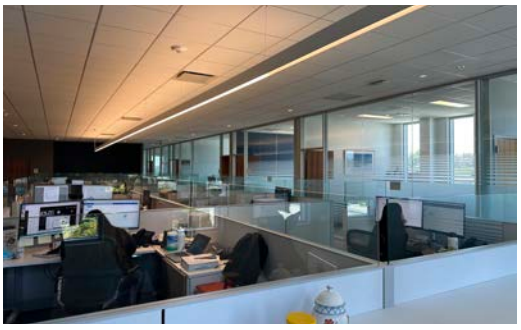
Public Lobbies and Service Counters

The David W. Smith City Hall currently has two service counters, a large first-floor lobby with a seating area, and a smaller lobby and two public service windows on the second floor. The service desk on the first floor mainly serves Community Development and the Public Works department, and the two windows upstairs serve the City Administration.

- Public lobbies and service desks are redundant and oversized. The first-floor lobby combined with the second-floor landing and second public waiting space oftentimes go unused by the public and would be much more useful as city department space.
- The public counter on the first floor is too large and can be reduced to make room for more workstations.
- Security for the first-floor service desk should be improved.

EXISTING FLOOR PLAN 2ND FLOOR





Open office space with cubicles at David W. Smith City Hall



Conference room on David W. Smith City Hall's first floor

Cubicle Work Areas

Both the first and second floor include large, open work areas with cubicles for various department staff. The department staff that work in these stations are from Public Works, Fire Prevention, Community Development, Human Resources, City Administration, Finance, and Information Technology (IT).

- Engineering staff workstation size can be reduced to make room for future Public Works staff additions in the southeast corner of the first floor.
- The main, larger open workspace has a slightly inefficient layout with some empty workstations and department work areas being used for storage.
- Conference room space is limited and does not accommodate all staff needs. Because of the open cubicle layout, there are not many options for staff to take calls or mitigate noise if they do not have a personal office.

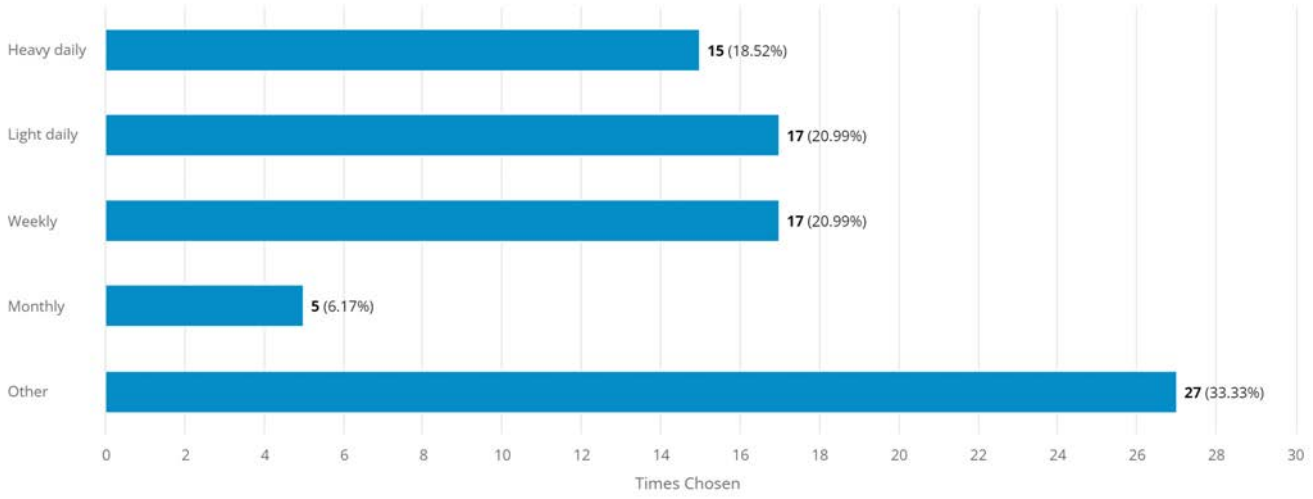
STAFF SURVEY RESULTS

To fully comprehend the existing space and needs of all facilities, staff and department head surveys were distributed. The purpose of these surveys was to collect information about both their department's overall layout as well as their individual workspaces. The questions in the survey went into detail about what they liked about their current workspaces/ departments, what they would change, if their adjacencies were adequate, adequacy of storage, amount of noise, and more.

The general staff survey results summary for all departments can be found below and on the next few pages.

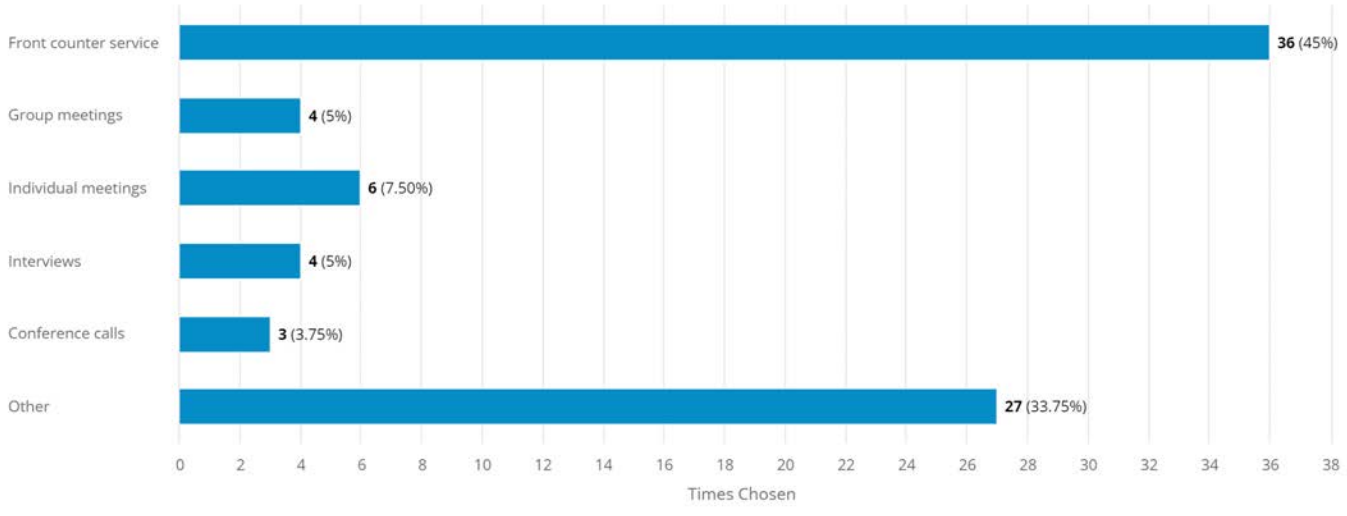
1. Please describe your in-office interaction with the public. For the purpose of this survey, please do not include your public interaction in the field. a. How frequently do you interact with the public in-office?

Number of responses: 81



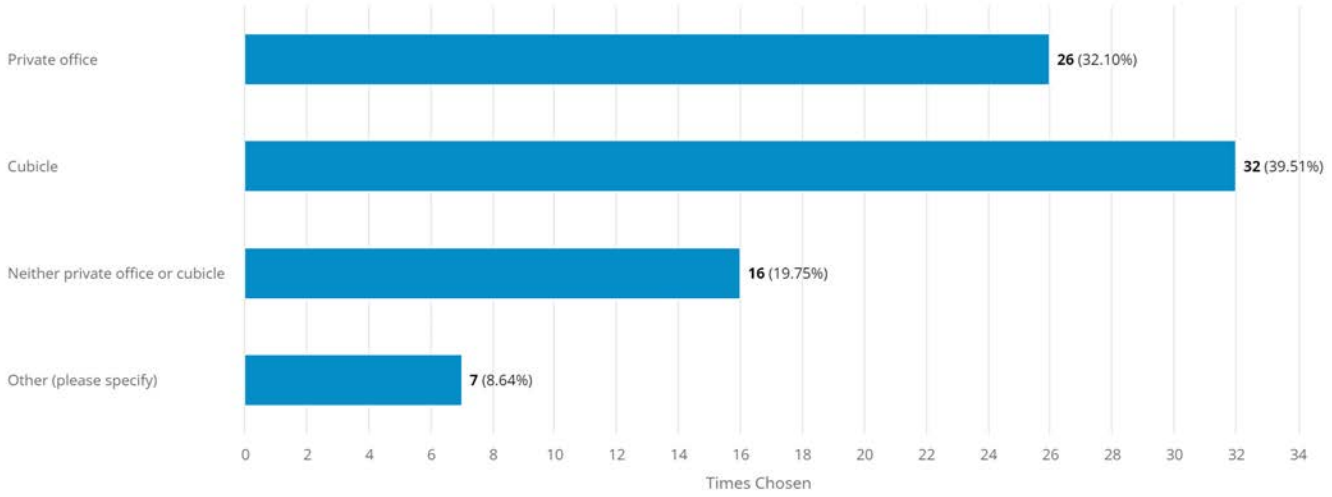
b. What type of interactions do you have with the public in-office?

Number of responses: 80



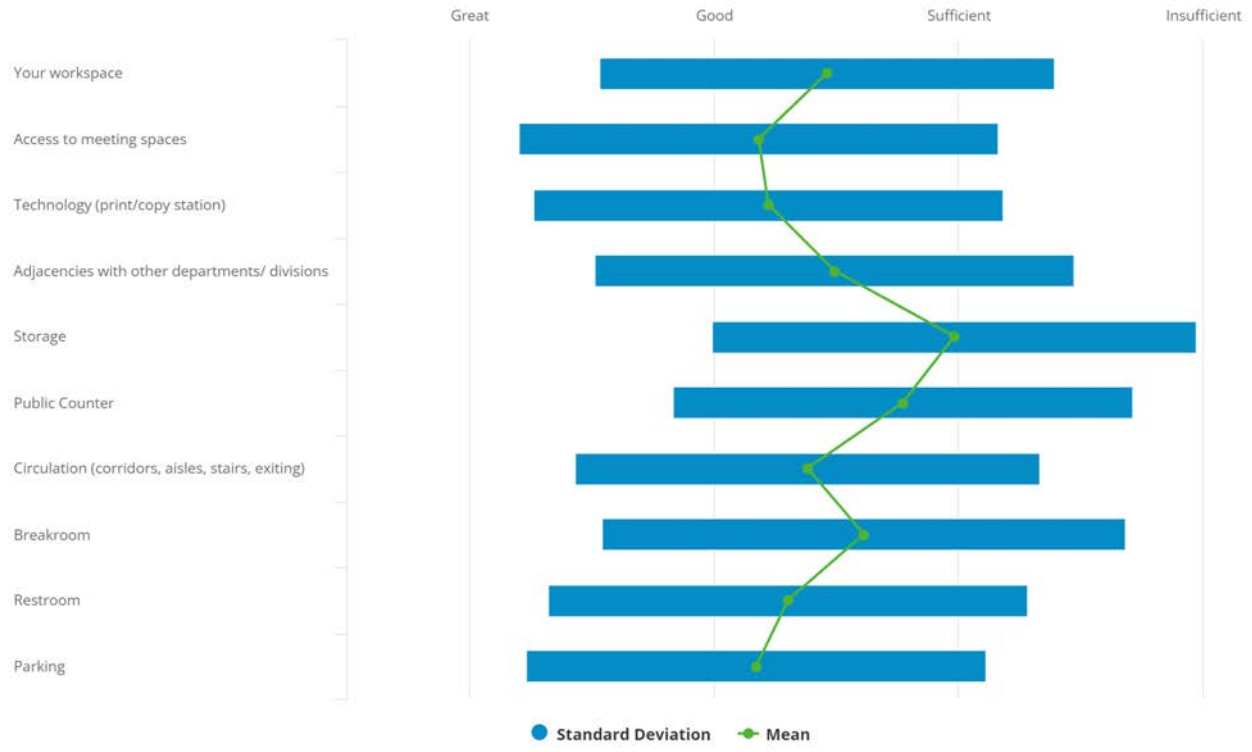
2. Please describe your workspace:

Number of responses: 81



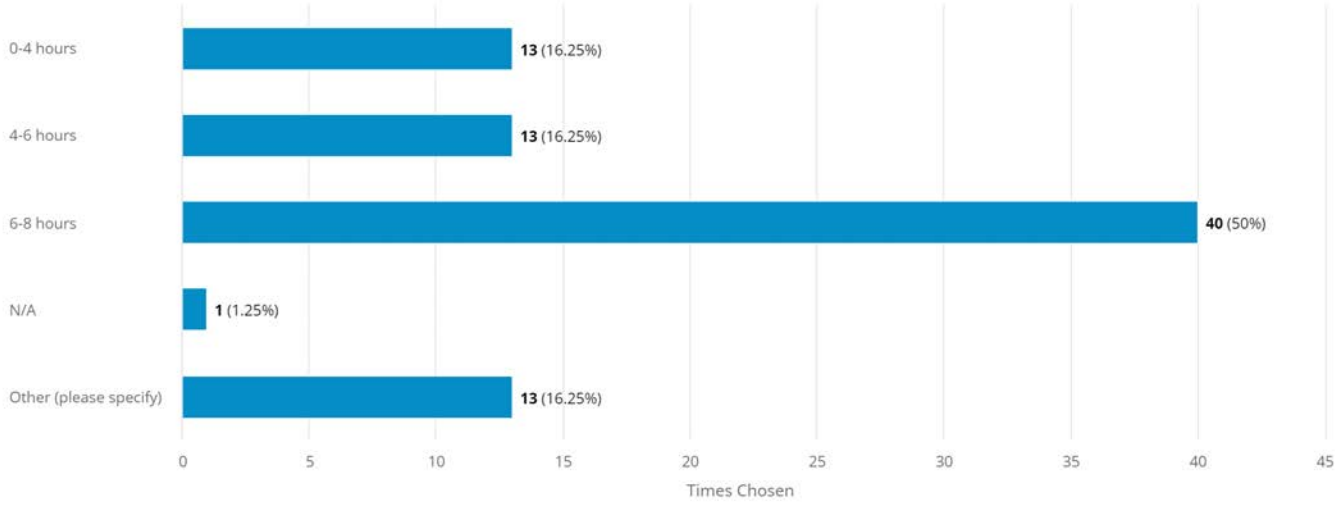
3. Please indicate the condition of each work area as applicable:

Number of responses: 81



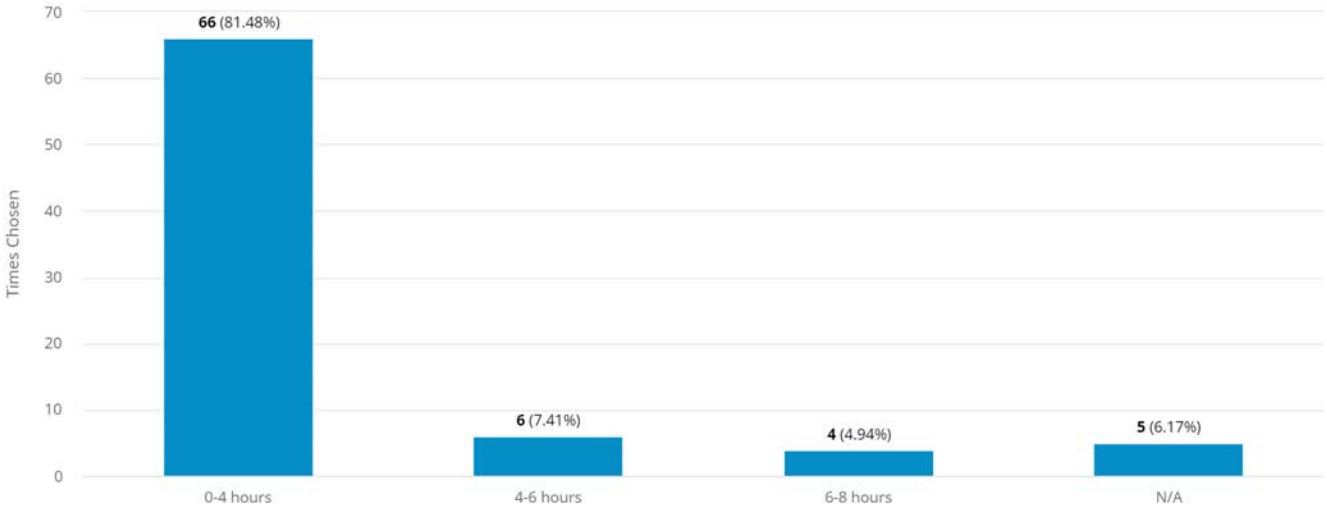
4. On average, how many hours do you work at your workstation per day?

Number of responses: 80



5. How many hours do you spend per day on the phone or on video conference meetings at your workstation?

Number of responses: 81





DAVID W. SMITH CITY HALL ADMINISTRATION NEEDS

As shown above, David W. Smith City Hall has several space needs that have been determined by examining staff survey results, conducting department head interviews, and completing a thorough walk-through of the work spaces.

- **Workspace:** Limited vacant workstations and offices for future staff growth
- **Meeting Rooms:** Meeting rooms have been reduced to accommodate for current office needs. Need for small focus/ zoom rooms
- **Public Spaces:** Public counters and lobbies are underutilized. Security concerns regarding current public counters.

DAVID W. SMITH CITY HALL

BUILDING PROGRAM

		Space	CURRENT STAFF City Hall FTE	CURRENT STAFF City Hall Part Time Seasonal	CURRENT STAFF Other Locations FTE	CURRENT STAFF Other Locations Part Time Seasonal	CURRENT SPACE SF	CURRENT SPACE USF/person	FUTURE STAFF City Hall FTE	FUTURE STAFF City Hall Part Time Seasonal
1. CITY COUNCIL, CITY MANAGER, CITY ATTORNEY, CITY CLERK & HR										
	1.01	Mayor	1				132	132		
	1.02	City Manager	1				251	251		
	1.03	Assistant City Manager	1				182	182		
	1.04	City Manager Staff	4	1			476	119	3	
	1.05	City Attorney	1				196	196		
	1.06	City Attorney Staff								
	1.07	City Clerk	1				129	129		
	1.08	City Clerk Staff								
	1.09	Human Resources Director	1				230	230		
	1.10	HR Staff	4				318	80		
		City Council, City Manager, City Attorney, City Clerk &	**14**	**2**	**0**	**0**	**1913**	**120**	**3**	**0**
2. INFORMATION TECHNOLOGY										
	2.01	Chief Information Officer/IT Director	1				175	175		
	2.02	IT Staff	5				400	80	2	
		Information Technology Total:	**6**	**0**	**0**	**0**	**575**	**96**	**2**	**0**
3. FINANCE										
	3.01	Finance Director	1				183	183		
	3.02	Accounting Manager	1				135	135		
	3.03	Collections Staff	1				65	65		
	3.04	Cashier	1				65	65		
	3.05	Finance Staff	7				696	99	3	
		Finance Total:	**11**	**0**	**0**	**0**	**1144**	**104**	**3**	**0**

PROGRAM OF SPACE NEEDS

With careful analysis of the existing facility layouts, staff surveys, and department head interviews, a space needs program for David W. Smith City Hall was developed.

The table below includes the David W. Smith City Hall's existing space (square footage) and future space needs that projects out to 10 years in the future. This table was created and adjusted as needed through several iterations in interviews and PMT meetings.

DAVID W. SMITH CITY HALL

BUILDING PROGRAM

		Space	CURRENT STAFF City Hall FTE	CURRENT STAFF City Hall Part Time Seasonal	CURRENT STAFF Other Locations FTE	CURRENT STAFF Other Locations Part Time Seasonal	CURRENT SPACE SF	CURRENT SPACE USF/person	FUTURE STAFF City Hall FTE	FUTURE STAFF City Hall Part Time Seasonal
3. FINANCE										
	3.01	Finance Director	1				183	183		
	3.02	Accounting Manager	1				135	135		
	3.03	Collections Staff	1				65	65		
	3.04	Cashier	1				65	65		
	3.05	Finance Staff	7				696	99	3	
	Finance Total:		**11**	**0**	**0**	**0**	**1144**	**104**	**3**	**0**
4. COMMUNITY DEVELOPMENT										
	4.01	Community Development Director	1				196	196		
	4.02	Deputy Community Development Director	1				147	147		
	4.03	Community Development Staff	1				80	80	5	
	4.04	Economic Development Manager	1				147	147		
		Economic Development Staff		2			65	33		
	4.05	Community Preservation Manager	1				60	60		
	4.06	Community Preservation Staff	3				180	60		
	4.06	Senior Planner	1				90	90		
	4.07	Planning Staff	1				90	90		
	Community Development Total :		**10**	**2**	**0**	**0**	**1055**	**88**	**5**	**0**
5. PUBLIC WORKS										
	5.01	Public Works Director	1				196	196		
	5.02	Public Works Staff	2				160	80	5	
	5.03	Assistant City Engineer	1				147	147		
	5.04	Engineering Staff	8				688	86		
	5.05	Chief Building Official	1				170	170		
	5.06	Building Staff	8				455	57		
	5.07	Environmental Services Manager	1				113	113		
	5.08	Envrionmental Services Staff	0							
	5.09	Maintenance Superintendent			1			0		
	5.10	Assistant Maintenance Superintendent			1			0		
	5.11	Maintenance Staff			19			0		
	5.12	Building Manager			1					
	5.13	Fleet/Street Manager			1					
	5.14	Code Enforcement Manager	1				114	114		
	Public Works Total:		**23**	**0**	**23**	**0**	**2133**	**93**	**5**	**0**
6. FIRE										
	6.01	Fire Marshal	1				90	90		
	6.02	Fire Inspector	1				60	60		
	6.03	Fire Staff (Vacant)	1				90	90		
	6.04	Fire Inspector (vacant)	1				60	60		
	Information Technology Total:		**4**	**0**	**0**	**0**	**300**	**75**	**0**	**0**
	SUBTOTAL		**68**	**4**	**23**	**0**	**7120**	**99**	**18**	**0**

Department Office Space

Department office space: Currently, David W. Smith City Hall is operating with 99 square feet of office space per person. This number is calculated using the square footage of each office space and how many staff members occupy each space. Total office square footage is divided by total staff members. There are 68 full-time employees that work at David W. Smith City Hall and 4 part-time. Some departments are more efficient with space than others, but the results of this study show that David W. Smith City Hall's floor plan is slightly inefficient, with each department needing more space to accommodate future staff growth.

DAVID W. SMITH CITY HALL

BUILDING PROGRAM

		Space	CURRENT STAFF				CURRENT SPACE		FUTURE STAFF	
			City Hall		Other Locations		SF	USF/person	City Hall	
			FTE	Part Time Seasonal	FTE	Part Time Seasonal			FTE	Part Time Seasonal
7. MEETING ROOMS & OTHER STAFF AMENITY SPACES										
	7.01	Chambers Conference					351			
	7.02	Meeting Room 2					230			
	7.03	Meeting Room 3					246			
	7.04	Meeting Room 4					291			
	7.05	Meeting Room 5					167			
	7.06	HR Conference Room					165			
	7.07	IS Work Room					190			
	7.08	Floor 1 Work Area					325			
	7.09	Finance Storage/ Work Room					240			
	7.1	HR Work Area					69			
	7.11	Floor 2 Work Room					245			
	7.12	HR Finger Print					100			
	7.13	Break Room					415			
	7.14	Coffee Area					77			
	7.15	Lactation Room					60			
	7.16	Council Chambers					2032			
		Meeting Rooms and Other Staff Amenity Spaces Total :					**5,202.81**			
8. STORAGE & OTHER NON ASSIGNABLE AREAS										
	8.01	Chair Storage					100			
	8.02	Chambers AV Closet					41			
	8.03	Clerk Files					131			
	8.04	HR Files					150			
	8.05	Cashier Files					80			
	8.06	Copy Room 1					77			
	8.07	First Floor Restrooms					806			
	8.08	Second Floor Restrooms					496			
	8.09	First Floor Building Support (Mech, Elec, etc.)					431			
	8.1	Second Floor Building Support (Mech, Elec, etc.)					280			
	8.11	Floor 1 Circulation					6,632			
	8.12	Floor 2 Circulation					3,225			
		Storage and Other NonAssignable Area Total :					**12,449**			
		GRANDTOTAL	**64**	**4**	**23**	**0**	**24,772**	**364**	**18**	**0**

Staff Growth

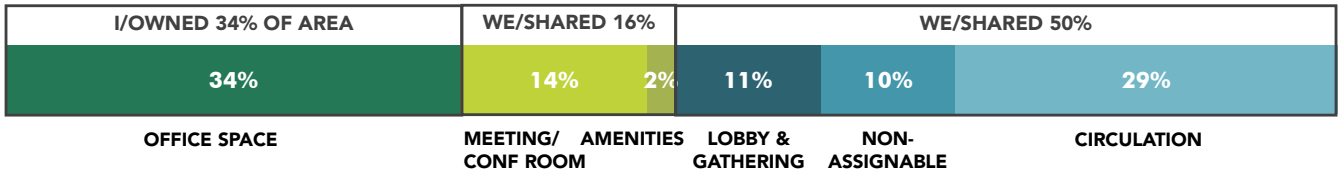
18 future staff are projected to be added to David W. Smith City Hall over the next 10 years. During interviews conducted to determine needs and future growth, each department head identified future staff additions, if any.

72 Current Staff, 25,000 SF David W. Smith City Hall
Total SF/ person: **347**

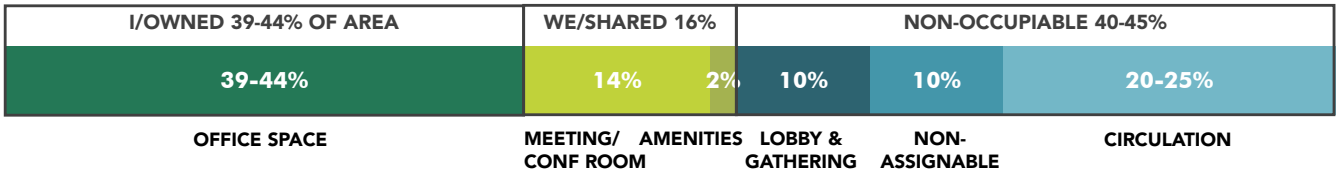
90 Future Staff, 25,000 SF David W. Smith City Hall
Total SF/person: **278**

29% Circulation Factor: indicates a slightly inefficient space plan, planning standards is 20-25%.

Current Space Utilization



Future Space Utilization



SPACE UTILIZATION

Through calculating current space usage, the space allocation for David W. Smith City Hall was determined and is shown below in percentages. This calculation shows that the layout and current space allocation is slightly inefficient, with 29% percent used for circulation while 20-25% is the average. With some carefully rework of public lobbies and service desks, there could be some shift to increase office space to accommodate future staff growth.

City staff noted a lack of storage in the David W. Smith City Hall workspaces throughout the planning process, though in-person assessment and space utilization analyses concluded that existing storage is not efficiently used and could be reorganized to better handle staff storage needs.


ZOLL

FIRE STATION 27



RECOMMENDATION: **REPLACE**

Address: *3909 Cherry Street, Newark, CA 94560*

Built: *1981*

Size: *6,000 square feet*

Site Area: 1.2 acres

Estimated Project Costs:

New 8,000 SF Station: $15,801,000

New 10,000 SF Station: $19,655,000

YEAR	FCI (Facility Condition Index)
Current	8.8%
3-Year	10.2%
5-Year	12.8%
10-Year	25.2%

FIRE STATION 29



RECOMMENDATION: **REPLACE**

Address: *35775 Ruschin Drive, Newark, CA 94560*

Built: *1962*

Size: *5,200 square feet*

Site Area: 0.58 acres

Estimated Project Costs:

New 8,000 SF Station: $15,801,000

New 10,000 SF Station: $19,655,000

YEAR	FCI (Facility Condition Index)
Current	5.5%
3-Year	7.7%
5-Year	11.7%
10-Year	19.8%

FIRE OPERATIONS ISSUES:

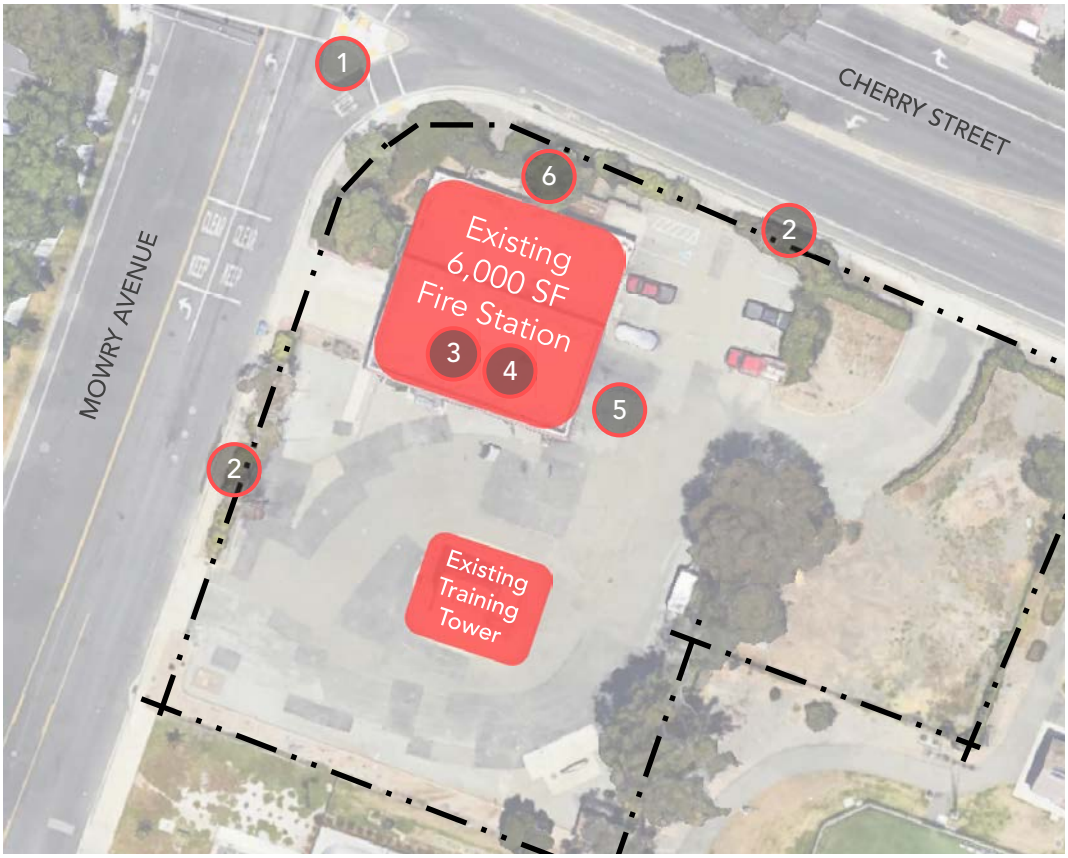
1. Need to repair intersection pre-empt signage
2. Need site security with perimeter fencing and gates

ESSENTIAL SERVICES ACT COMPLIANCE ISSUES:

3. Need emergency back-up power for entire station
4. Need seismic strengthening for entire station

CODE COMPLIANCE ISSUES:

5. Need to divert truck washing to sewer
6. Need to repair leaks at exterior wall and doors



FIRE STATION 27 EXISTING CONDITIONS

The Newark Fire Station 27 was built in 1981 on a corner lot located at Mowry Avenue and Cherry Street. The one-story station is approximately 6,000 SF and sited on a 1.38 acre site. The three-story fire training tower was constructed in 1982.

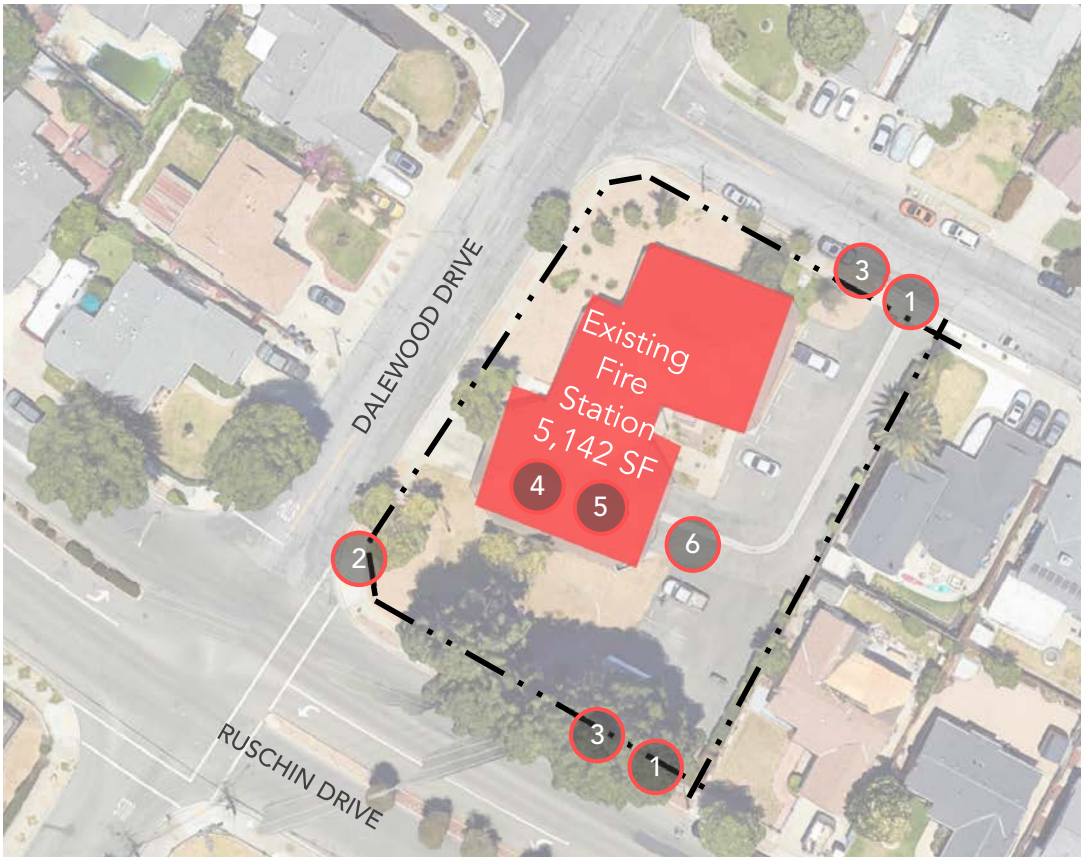
The fire station accommodates a single engine company, which is staffed with three fire personnel. The apparatus bays were expanded to accommodate longer fire apparatus and the one large dormitory room was divided into semiprivate sleeping areas with partial height walls.

The wood framed building is finished on the exterior, cement plaster on the walls, and metal mansard roof framing around the building perimeter. There is low sloped roof framing and foam roofing material behind the mansards to accommodate mechanical equipment.

The existing station comprised of two apparatus bays, which is also used as the decontamination clean up, turnout gear storage space and exercise space. All these functions are required to have separate ventilated spaces to be code compliant with the National Fire Protection Association (NFPA) and OSHA.

The living quarters is a combined kitchen, dayroom and dining room space with separate locker room for personal gear and one restroom. The sleeping quarters are one large space that has been subdivided. The main public entrance to the fire station opens into a small lobby and reception area. There is no dedicated Fire Captain's office or Firefighter work area for report writing.

The existing site is not secured along the entire perimeter of the site. There is adequate parking for fire personnel, but no dedicated parking for the public or accommodation for accessibility. The fire station is immediately adjacent to the Newark Skate Park, Sports Field Park and close to the Silliman Activity and Family Aquatic Center.



FIRE OPERATIONS ISSUES:

1. Need site security with perimeter fencing and gates
2. Need to repair phone line
3. Need to underground existing power lines over emergency path of response

ESSENTIAL SERVICES ACT COMPLIANCE ISSUES:

4. Need emergency back-up power for entire station
5. Need seismic strengthening for entire station

CODE COMPLIANCE ISSUES:

6. Need to divert truck washing to sewer

FIRE STATION 29 EXISTING CONDITIONS

Newark Fire Station 29 was built in 1962 and is located on the corner of Newark Blvd. and Dalewood Drive. The one-story station is approximately 5,142 SF and sited on a 0.58-acre site. The station was renovated and expanded in 1975 to accommodate individual bunk rooms and restrooms with showers and lockers.

The exterior walls are load bearing stack bond concrete masonry block with aluminum framed windows and doors. The roof framing is pitched and is covered with lightweight concrete tiles. There are several areas of dry rot, insect and water damage to the roof eaves and facias.

The fire station accommodates a single engine company, which is staffed with three fire personnel. The apparatus bays were not expanded to accommodate longer fire apparatus as originally planned. The existing station is comprised of two drive through apparatus bays, which are also used as the decontamination clean up and turnout gear storage space. All these functions are required to have separate ventilated spaces to be code compliant with the NFPA and OSHA.

The living quarters is a combined kitchen, dayroom and dining room space. There is a dedicated exercise space. The sleeping quarters is one large space that has been subdivided into semi private sleeping areas with partial height walls. The main public entrance to the fire station opens onto the watch room and reception area. There are dedicated Fire Captain's office and Firefighter work area for report writing.

The existing site is not secured along the entire perimeter. There is adequate parking for fire personnel, but no dedicated parking for the public or accommodation for accessibility. The fire station is immediately adjacent to single family residential neighborhoods. Newark Junior High School, Newark Community Center Park and NewBark Dog Park are in close proximity.

FIRE STATION NEEDS

FIRE STATION 27 & 29

ESSENTIAL SERVICE ACT COMPLIANCE ISSUES
Both facilities need seismic strengthening and emergency back-up power.

CODE COMPLIANCE ISSUES
Current facilities do not meet current ADA as well as other compliance issues with egress and ventilation.

LIFE SAFETY ISSUES
Current facilities need fire alarm systems.

OPERATIONS
Improvements to bring facilities up to current best practices for fire operations and security.





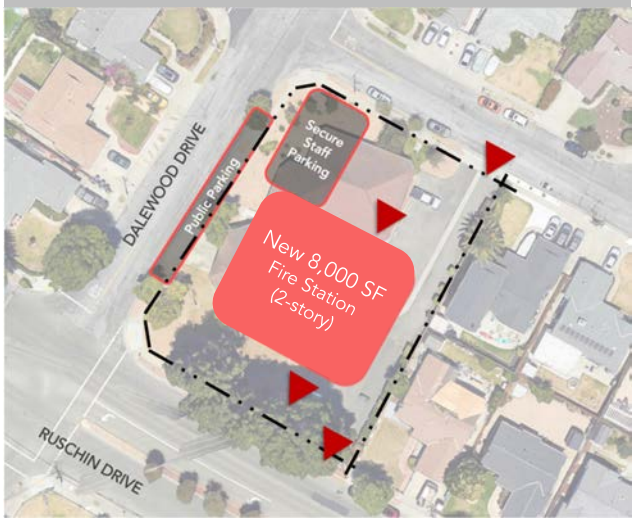
FIRE STATION OPTIONS

FIRE STATION 27 & 29

FIRE STATION #27



FIRE STATION #29





FIRE STATION 27 & 29 NEEDS

As shown by the facility condition index numbers on pages 62 and 63, Fire Stations 27 and 29 are in need of major improvements projects. Both of the stations have a vast amount of deferred maintenance needs that include code compliance, life safety, and operational shortcomings. Both facilities were constructed several decades ago in the 1960s and 80s, and do not reflect modern fire safety standards. Listed below are the overall needs for both facilities. Facility-specific information can be found on pages 64 and 65.

- **Essential Service Act Compliance:** Both facilities need seismic strengthening and emergency back-up power.
- **Code Compliance Issues:** Current facilities to not meet current ADA as well as other compliance issues with egress and ventilation.
- **Life Safety Issues:** Current facilities need fire alarm systems.
- **Operations:** Improvements are needed to bring facilities up to current best practices for fire operations and security.

FIRE STATION 28



RECOMMENDATION: **MAINTAIN**

Address: *7550 Thornton Avenue, Newark, CA 94560*

Built: *2005*

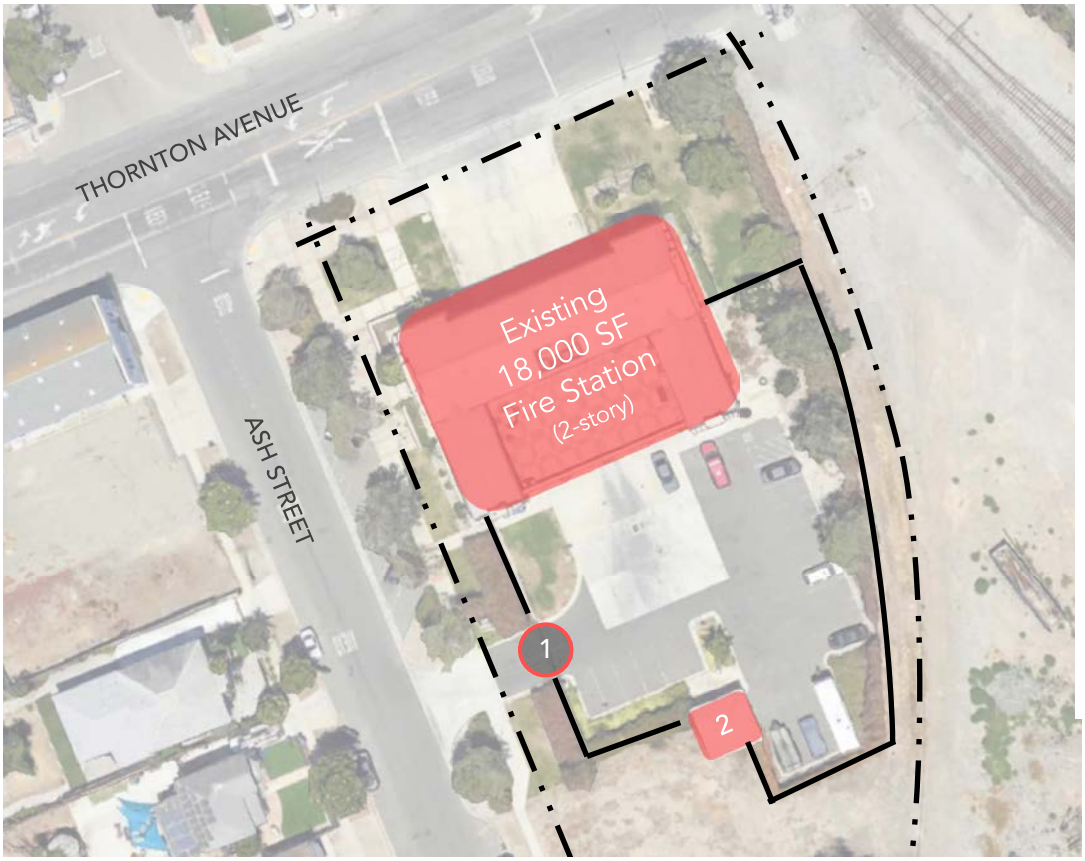
Size: *18,000 square feet*

Site Area: 1.12 acres

Estimated Project Costs:

Station 28 Improvements: $2,060,000

YEAR	FCI (Facility Condition Index)
Current	0.4%
3-Year	1.2%
5-Year	3.2%
10-Year	9.5%



FIRE OPERATIONS ISSUES:

1. Need to improve gate opening speed

ESSENTIAL SERVICES ACT COMPLIANCE ISSUES:

2. Need to increase emergency generator and fuel tank systems capacity to provide emergency power for the entire facility

FIRE STATION 28 EXISTING CONDITIONS

Newark Fire Station 28 was built in 2005 and is located on the corner of Thornton Avenue and Ash Street. The two-story facility is approximately 18,000 square feet which includes a storage loft and walk in attic space. The site is approximately 1.12 acres and has secured parking for fire personnel and an ancillary building, which houses the emergency generator and fuel tank. Renovation to the mechanical system occurred in 2015, but no expansion to the facility was needed.

The existing fire station is constructed with concrete masonry block bearing walls on the first floor and second floors that are clad with traditional detailed face brick and has decorative cast stone features emphasizing the apparatus bays, window heads and sills and along the roof line. The roof assembly is comprised of a pitched metal roofing with traditionally detailed stepped parapet end walls with stone parapet caps.

The fire station accommodates a single engine company, which is staffed with three fire personnel and a Battalion Chief. There are three drive thru apparatus bays with dedicated spaces for medical storage, the self-contained breathing apparatus (SCBA) compressor, work shop, and decontamination clean-up. Though this is a relatively new station, the turnout gear is stored along the apparatus bay walls. Per code the turnout gear should be stored in a separate ventilated space to be code compliant with the NFPA and OSHA.

There is a main public entrance and dedicated lobby, reception area and accessible restroom. The administrative spaces include a conference room, work area for firefighters, and offices for the Fire Captain and Battalion Chief.

The living and sleeping quarters are on the second floor with an open concept kitchen, dayroom and dining room space, individual bunk rooms, gender specific restrooms, exercise room and a large roof patio space.

The existing site is secured along the entire perimeter with metal fencing. There is adequate parking for fire personnel and on street parking for public visitors, which accommodates accessibility. The fire station is immediately adjacent to railroad tracks, single family residences, and commercial businesses.

FIRE STATION NEEDS

FIRE STATION 28

ESSENTIAL SERVICE ACT COMPLIANCE
Increase emergency power capacity for the entire facility and systems.

INTERIOR
Minor interior improvements to improve life safety, code compliance, operations and security issues.

EXTERIOR
Improvements to site security and operations.



FIRE STATION 28 NEEDS

Fire Station 28 is in good condition as shown by the Facility Condition Index numbers on page 68. In order to keep the building maintained, these following needs should be addressed:

- **Essential Service Act Compliance:** Increase emergency power capacity for the entire facility and systems
- **Interior:** Minor interior improvements to improve life safety, code compliance, operations, and security issues
- **Exterior:** Improvements to site security and operations



NEWARK POLICE DEPARTMENT



RECOMMENDATION: **MAINTAIN**

Address: *37077 Newark Boulevard, Newark, CA 94560*

Built: *2020*

Size: *24,000 square feet*

Site Area: 1.76 acres

Estimated Project Costs:

Police Station Improvements: $2,223,000

YEAR	FCI (Facility Condition Index)
Current	0.1%
3-Year	0.1%
5-Year	0.1%
10-Year	3.5%



1. Bad acoustics in lobby/ entrance
2. Reallocate existing sleeping room to court zoom room
3. Repair ballistics glazing and add visual control at high windows
4. Relocate live scan into a room
5. Repurpose existing interview room to soft interview room and sleeping room
6. Add door for second tier security at armory
7. Complete visual surveillance and access control systems
8. Add door at patrol for visual and acoustical control
9. Reallocate office spaces to provide separate offices for the red light analyst and dispatch supervisor

NEWARK POLICE DEPARTMENT EXISTING CONDITIONS

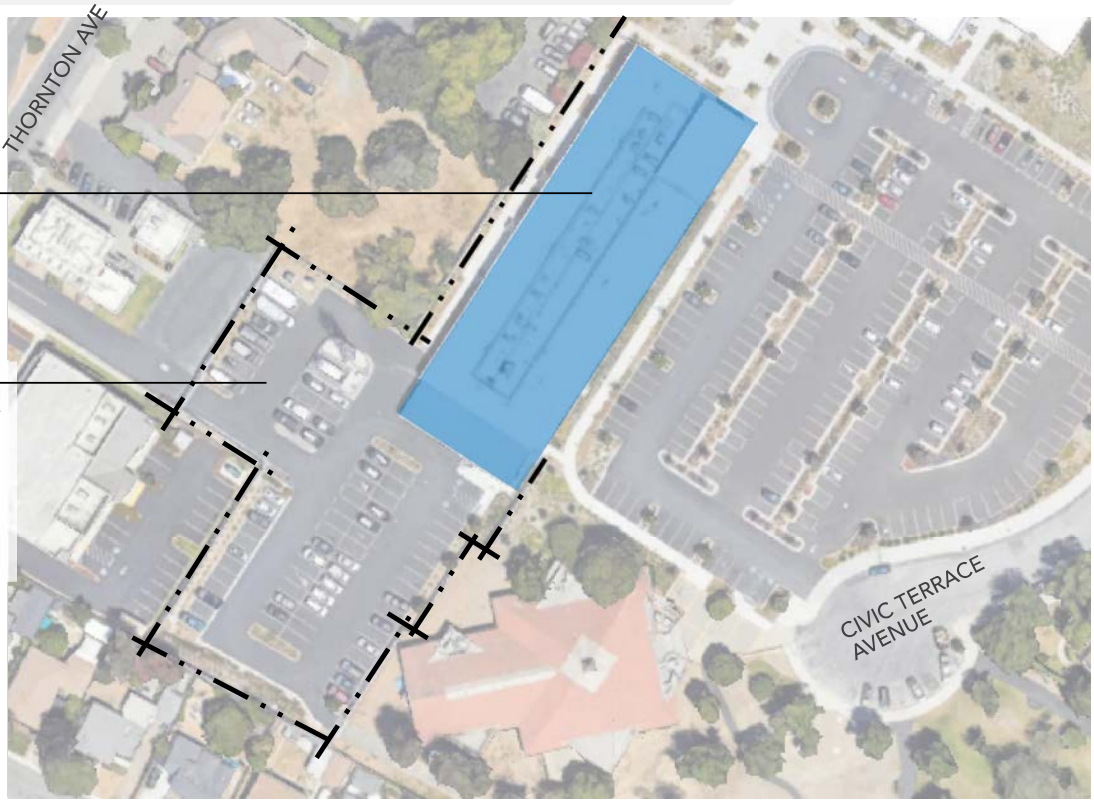
The Newark Police Department was built in 2020 along with the Alan L. Nagy Library and the David W. Smith City Hall as part of the Civic Center campus. The building sits on 1.76 acres and has one story of 24,000 square feet. The central location of the Newark Civic Center gives officers easy access to the Newark community and additionally connects the building to the plaza between the Alan L. Nagy Library and David W. Smith City Hall where community events often take place. The building's public parking is shared with the Newark Civic Center and has secured police car parking as well.

The building is modern and features a large, light-filled public lobby and service desk. Beyond the lobby, there is a large training room, open and individual office spaces, evidence storage, men's and women's locker rooms, and other detective and interview spaces. Observations are listed below:

- New building that serves the Newark community well
- Lobby and entryway acoustics: noise carries
- Ballistics and glazing need to be repaired
- Armory could use second tier security
- Patrol space lacks visual and acoustical control
- Red light analyst and dispatch supervisor share office

PUBLIC SAFETY NEEDS

POLICE STATION



INTERIOR

Minor interior improvements to improve operations and security.

EXTERIOR

- Improvements to site security, vehicle charging capacity and operations.
- Improve roof and storm drainage and waterproofing issues.

NEWARK POLICE DEPARTMENT NEEDS

Because the Newark Police Department was built only four years ago, it is operating well and remains a new, modern, effective building. In order to maintain the building well into the future, some minor improvements could be made within the next few years:

- **Interior:** Minor interior projects to improve operations and security
- **Exterior:** Improvements to site security, vehicle charcing capacity and operations as well as improving roof and storm drainage and waterproofing issues



NEWARK SERVICE CENTER



RECOMMENDATION: **RENOVATE**

Address: *37440 Filbert Street, Newark, CA 94560*

Built: *1965-1988*

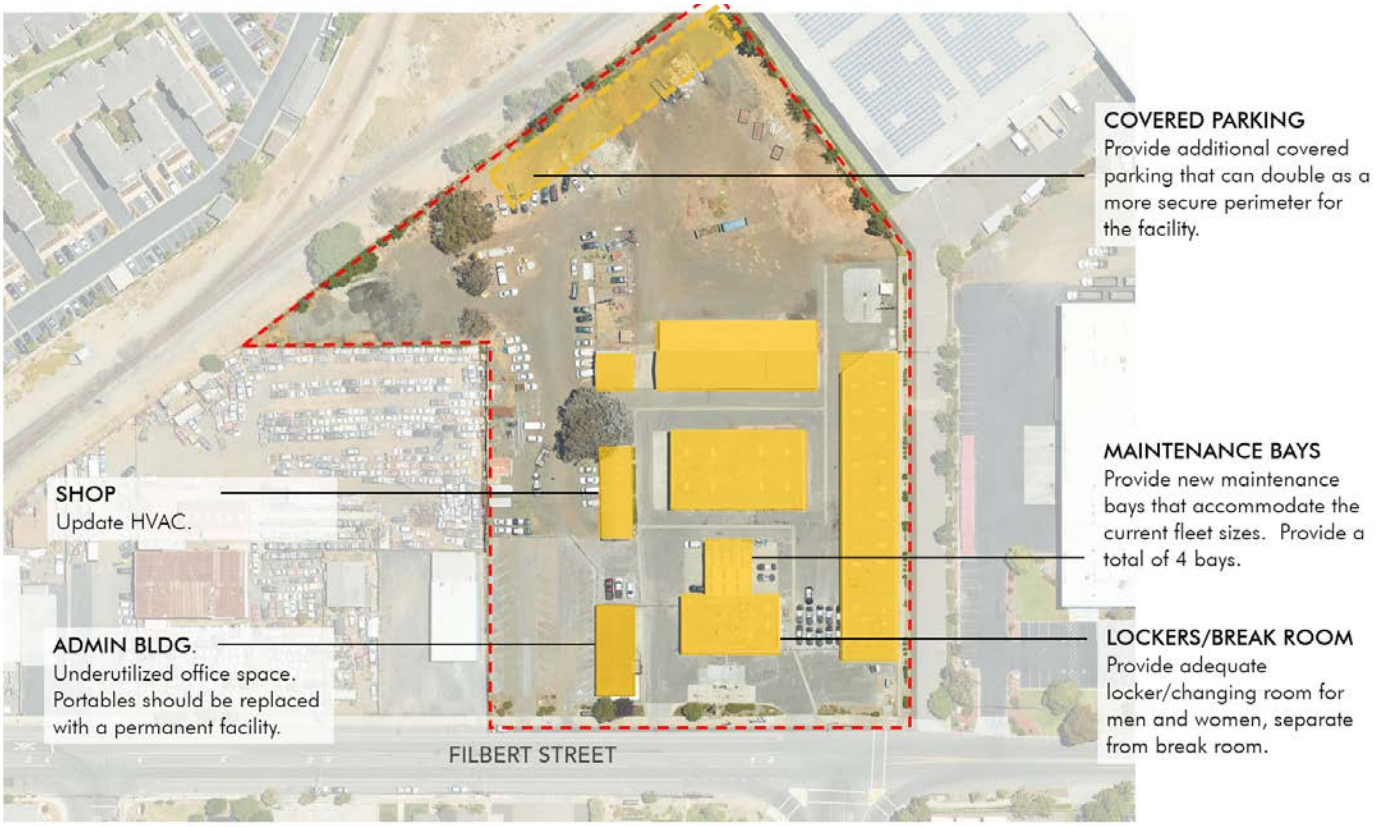
Size: *40,000 square feet total (multiple buildings)*

Site Area: 4.9 acres

Estimated Project Costs:

Service Center Improvements: $13,016,000

YEAR	FCI (Facility Condition Index)
Current	4.0%
3-Year	8.5%
5-Year	14.0%
10-Year	24.7%



Identified needs at Newark Service Center

NEWARK SERVICE CENTER EXISTING CONDITIONS

Located on Filbert Street, the Newark Service Center sits across from the existing Clark W. Redeker Senior Center. There are seven buildings included on the site that were all developed between the years of 1965 and 1988. The seven buildings total just under 40,000 square feet. One of the seven buildings is used for Maintenance administration staff offices and is 2,400 square feet. Newark Service Center observations are listed below.

Administration Building

- Office space is not efficiently laid out.
- Portable facility that is outdated and small.

Lockers and Break Room

- Both genders' lockers are located within the open training/ lunchroom, meaning that staff are changing in the open area. A room divider exists but does not work anymore.

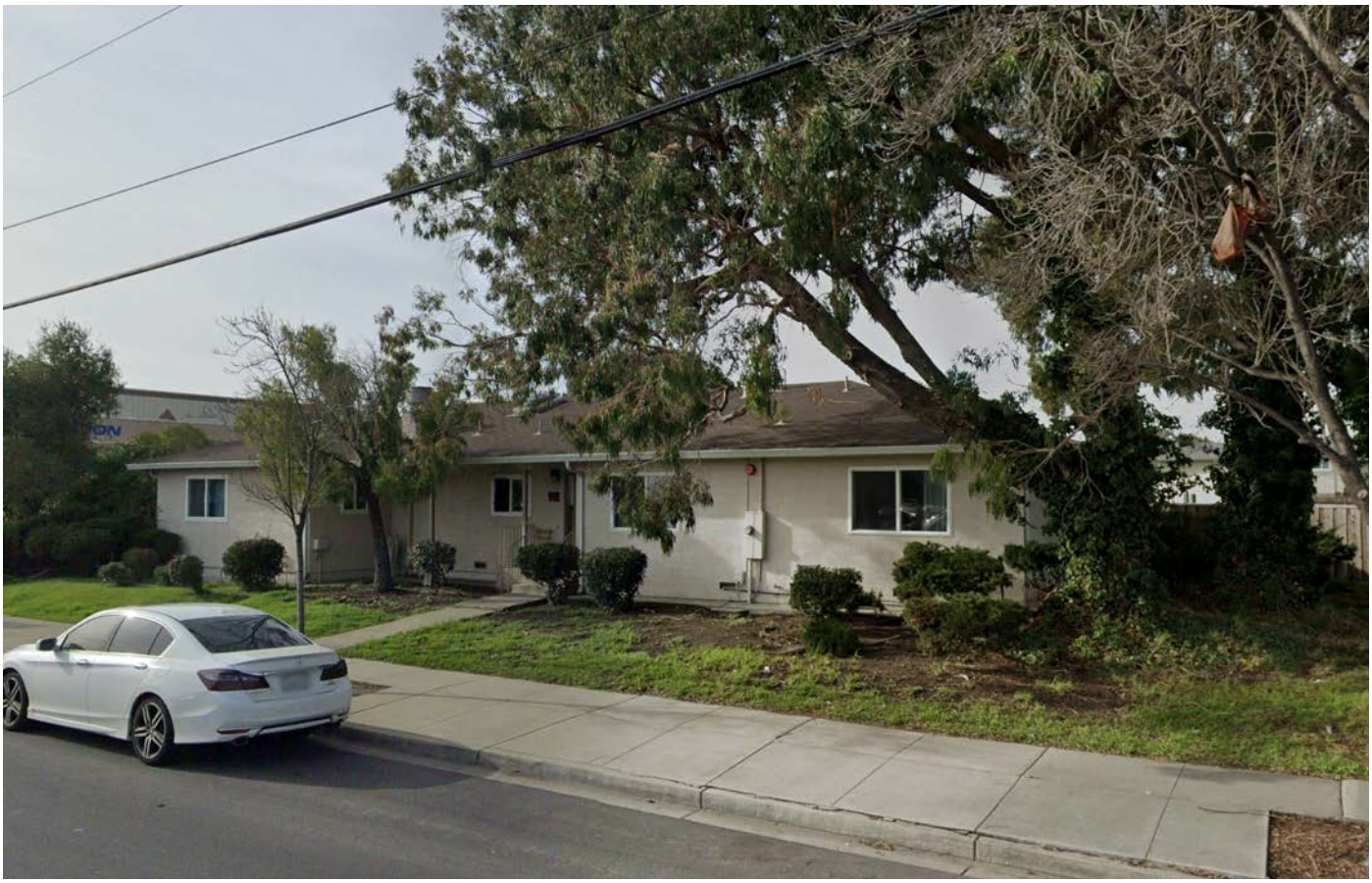
Building Shop and Maintenance Bays

- Shop does not have HVAC/ proper air circulation.
- Maintenance bays cannot fully accommodate fleet size; fire engines do not fit well.

Covered Parking and Security

- The back corners of the Newark Service Center are sometimes used as illegal entry points to the facility; facility security is not adequate.
- Not enough coverage for parking needs.

SECOND CHANCE EMERGENCY SHELTER



RECOMMENDATION: **MAINTAIN**

Built: *1960*

Size: *3,200 square feet*

Site Area: 0.51 acres

YEAR	FCI (Facility Condition Index)
Current	0.7%
3-Year	2.7%
5-Year	6.6%
10-Year	22.6%

OLD FIRE STATION (VACANT)



RECOMMENDATION: SELL, REPURPOSE, OR DEMOLISH

Address: *7700 Thornton Avenue, Newark, CA 94560*

Built: *1980*

Size: *4,900 square feet*

Site Area: 0.37 acre

YEAR	FCI (Facility Condition Index)
Current	13.1%
3-Year	13.5%
5-Year	21.6%
10-Year	27.1%

CITY OF NEWARK
FACILITIES MASTER PLAN

CITY COUNCIL UPDATE

SEPTEMBER 12, 2024

GROUP 4 ARCHITECTURE

NEWARK California

AGENDA

1. Project Goals and Schedule
2. Facility Conditions Assessment
3. Space Needs
   - Community Buildings
   - Fire Station 27 & 29
4. Implementation Plan



PROJECT GOALS

1. ASSESS | Assess facility needs & conditions

2. DETERMINE GROWTH | Determine growth and future needs

3. ENGAGE | Engage the Newark community about community program and space needs

4. DEVELOP | Develop recommendations and options with supporting cost estimates

5. PLAN | Create an action plan to guide and improve future decision making about programs, services, workflow, and facilities

CITY OF NEWARK

CITYWIDE FACILITIES MASTER PLAN

DRAFT WORK PLAN 2024-05-24

GROUP 4 ARCHITECTURE

2024

DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL

TASK 1: EXISTING CONDITIONS EVALUATION

TASK 2: FUTURE SPACE NEEDS ASSESSMENT

TASK 3: CITY ALTERNATIVE FACILITIES OPTION

TASK 4: COST ESTIMATE AND IMPLEMENTATION PLAN

PROJECT PARTICIPATION

Project Management Team (PMT) Meetings

Facility Tours + Interviews

Survey

Interviews

Public Workshop/Meeting

Workshop #1

Workshop #2

Workshop #3

Workshop #4

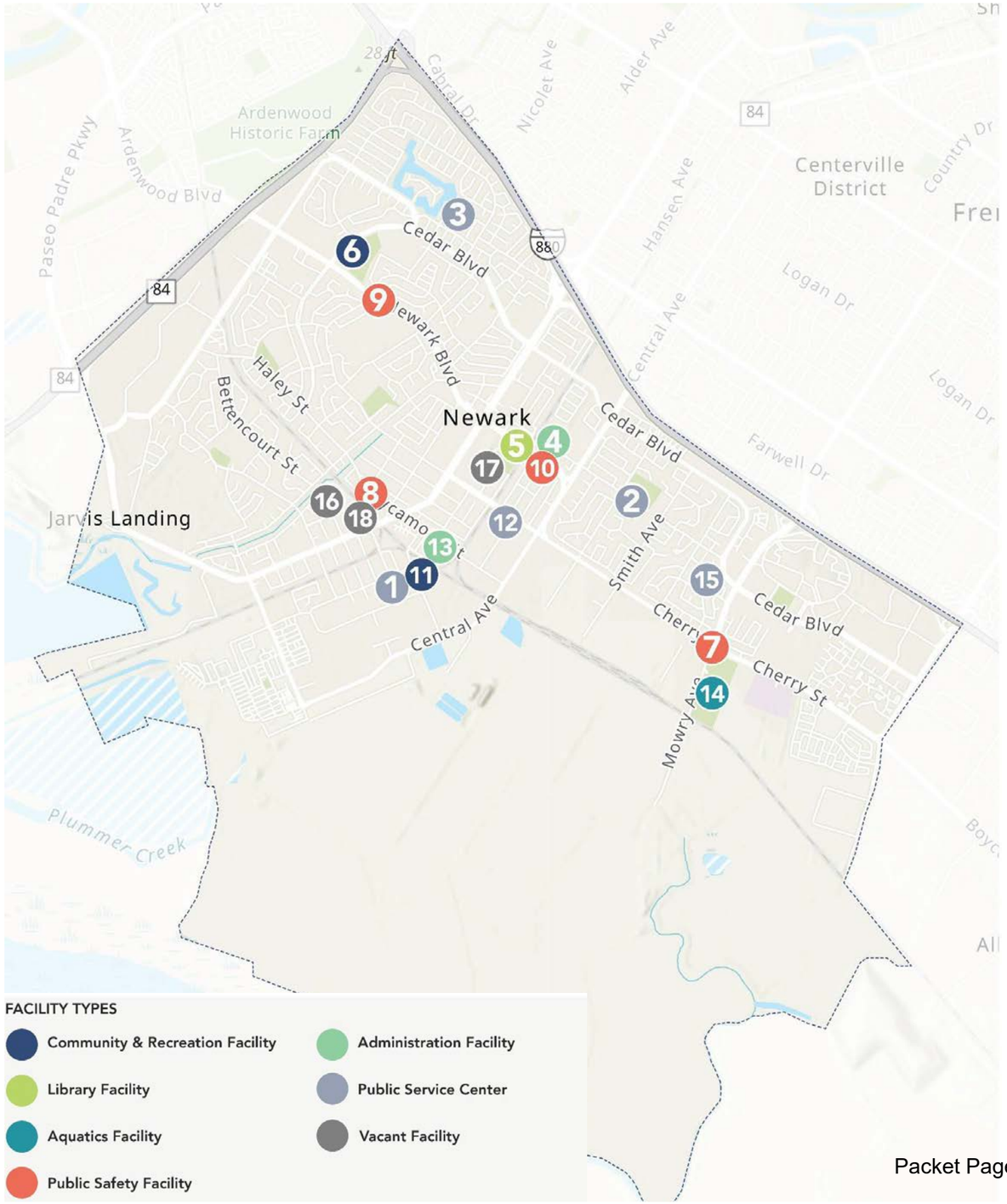
City Council

AGENDA

1. Project Goals and Schedule
2. Facility Conditions Assessment
3. Space Needs
   - Community Buildings
   - Fire Station 27 & 29
4. Implementation Plan



NEWARK FACILITIES MAP



1 ASH STREET CENTER, RESTROOM, AND VIOLA BLYTHE COMMUNITY SERVICE CENTER



37365 Ash Street
- Ash Street Center: 1,968 SF
- Restroom: 1,100 SF
- Viola Blythe: 960 SF

2 BIRCH RESTROOM @ BIRCH GROVE PARK



38080 Birch Street
- 900 SF

3 BOATHOUSE@ LAKESHORE PARK



Chelsea Drive
- 300 SF

4 DAVID W. SMITH CITY HALL



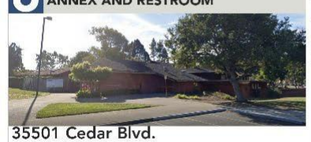
37101 Newark Blvd.
- 25,638 SF

5 ALAN L. NAGY LIBRARY



37055 Newark Blvd.
- 25,580 SF

6 NEWARK COMMUNITY CENTER, ANNEX AND RESTROOM



35501 Cedar Blvd.
- Community Center: 15,000 SF
- Community Annex: 3,000 SF
- Community Center Restroom: 500 SF

7 FIRE STATION 27



39039 Cherry Drive
- 7,005 SF

8 FIRE STATION 28



7550 Thornton Avenue
- 18,000 SF

9 FIRE STATION 29



35775 Ruschin Drive
- 5,450 SF

10 POLICE STATION



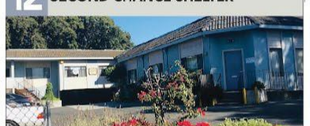
37077 Newark Blvd.
- 23,987 SF

11 CLARK W. REDEKER NEWARK SENIOR CENTER



7401 Enterprise Drive
- 7,300 SF

12 SECOND CHANCE SHELTER



6516 Central Avenue
- 3,116 SF

13 SERVICE CENTER (NEWARK PUBLIC WORKS MAINTENANCE)



37440 Filbert Street
- 24,700 SF

14 GEORGE M. SILLIMAN COMMUNITY ACTIVITY CENTER AND SPORTSFIELD SCOREKEEPER HUT



6800 Mowry Avenue
- Phase I: 36,410 SF
- Phase II: 32,320 SF
- Sportsfield Scorekeeper Hut: 680 SF

15 SPORTSFIELD RESTROOM



3911 Cherry Street
- 680 SF

VACANT FACILITIES

16 OLD FIRE STATION LOCATION



7700 Thornton Avenue
- 4,852 SF

17 OLD NEWARK LIBRARY LOCATION



6300 Civic Terrace
- 15,000 SF

18 WATKINS HALL



37013 Ash Street
- 8,640 SF

FACILITY CONDITION ASSESSMENTS

01

PRE-SURVEY

- Pre-Survey Questionnaire
- Review Existing Data

02

PILOT

- Conduct Site Assessment(s)
- Sample Report
- Draft Approval

03

ASSESSMENT

Building System Inspections

- Site & Infrastructure
- Exterior & Bldg. Envelope
- Roof & Rooftop Systems
- Interiors & Accessibility
- MEP & Life Safety Systems

Identification of Deficiencies

Inventory of Assets

Repair/Replace Recommendation

Cost Estimating/ Maintenance Plan

04

DELIVERABLE

- Facility Assessments
- Capital Planning Reports
- Portfolio Prioritization
- Facility Condition Index (FCI)

FACILITY MAINTENANCE COSTS

	Immediate	Short Term (1-2 yrs.)	Near Term (3-5 yrs.)	Mid Term (6-10 yrs.)	Long Term (11-20 yrs.)	TOTAL
Total expenditures for ALL facilities	$8.15M	$4.08M	$9.93M	$20.41M	$57.53M	$100.1M
Total expenditures for ALL facilities for Safety Plan Type costs	$500K					
Total expenditures for facilities *EXCLUDING Community Center -Annex-Restroom, Fire Station 27 and 29, Watkins Hall, Old Fire Station and Old Library*	$1.72M	$2.74M	$7.38M	$15.63M	$44.99M	$72.46M
Total expenditures for facilities for Safety Plan Type costs *EXCLUDING Community Center -Annex-Restroom, Fire Station 27 and 29, Watkins Hall, Old Fire Station and Old Library*	$52K					

FACILITY RECOMMENDATION

BASED ON 5-YEAR FCI

✓ INDICATE SHORT TERM NEEDS

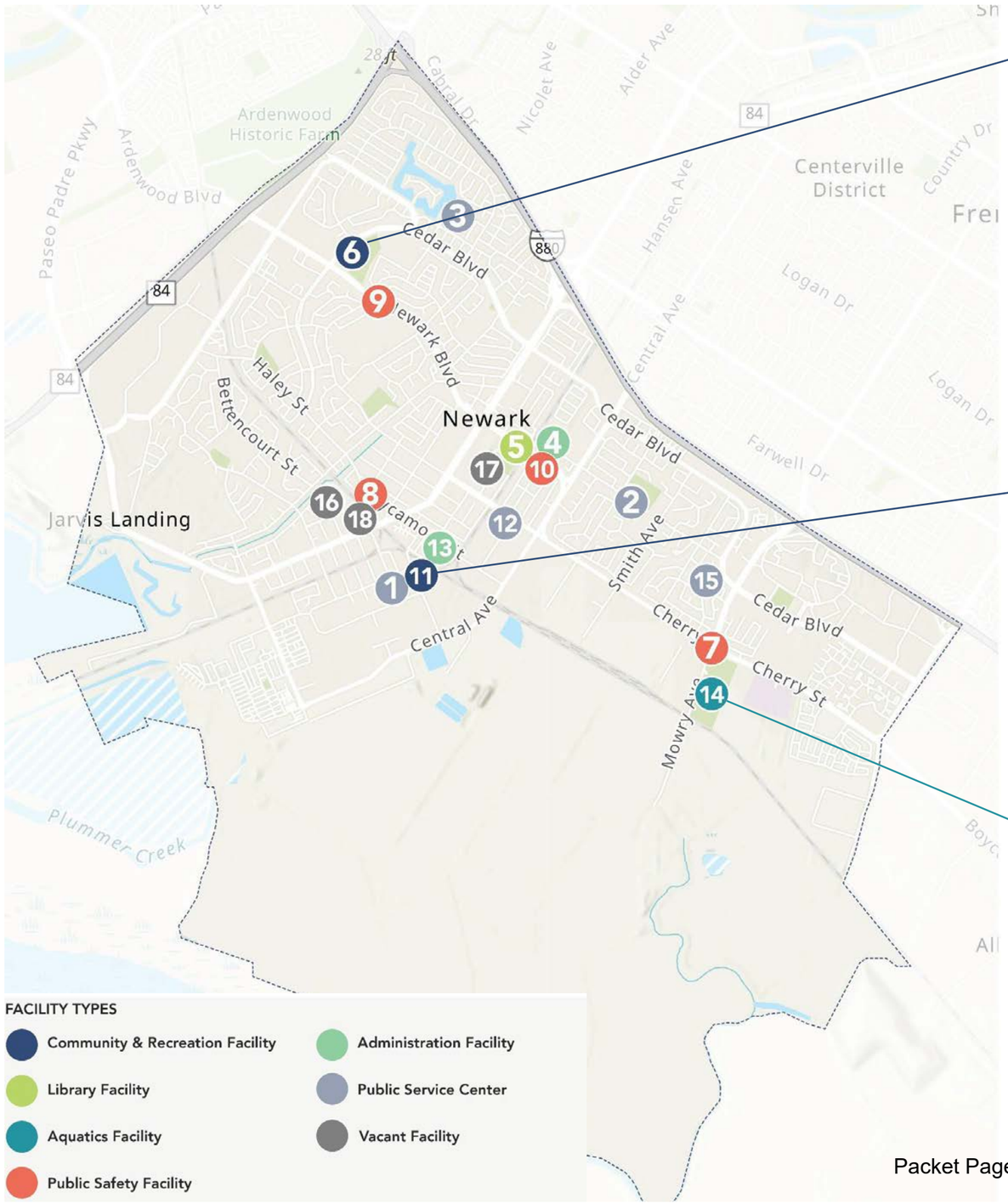
FACILITY	MAINTAIN	RENOVATE	REPLACE	SELL/REPURPOSE/DEMO
Ash Street Park Bldgs	✓			
Birch Grove Restroom		✓		
Boathouse	✓			
Newark Community Center Annex			✓	
Newark Community Center			✓	
Newark Community Center RR			✓	
Fire Station 27			✓	
Fire Station 28	✓	✓		
Fire Station 29			✓	
Old Fire Station				✓
Old Library				✓
Clark W. Redeker Senior Center	✓			
Second Chance Shelter	✓			
Newark Service Center	✓			
George M. Silliman Center	✓	✓		
Sports Field Restroom	✓	✓		
Watkins Hall				✓
David W. Smith City Hall	✓			
Alan L. Nagy Library	✓			
Newark Police Department	✓			

AGENDA

1. Project Goals and Schedule
2. Facility Conditions Assessment
3. Space Needs
   - Community Buildings
   - Fire Stations 27 & 29
4. Implementation Plan



NEWARK COMMUNITY, RECREATION & AQUATIC FACILITIES



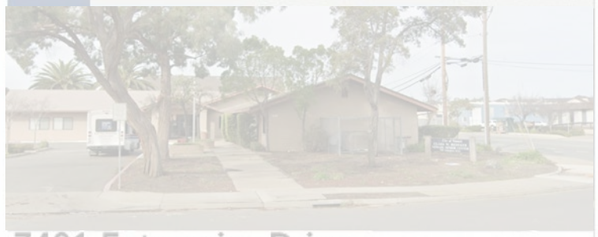
6 NEWARK COMMUNITY CENTER, ANNEX AND RESTROOM



35501 Cedar Blvd.

- Community Center: 15,000 SF
- Community Annex: 3,000 SF
- Community Center Restroom: 500 SF

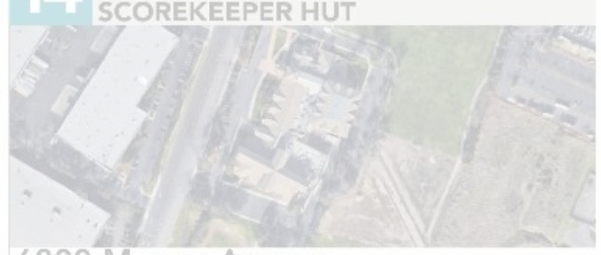
11 CLARK W. REDEKER NEWARK SENIOR CENTER



7401 Enterprise Drive

- 7,300 SF

14 GEORGE M. SILLIMAN COMMUNITY ACTIVITY CENTER AND SPORTSFIELD SCOREKEEPER HUT

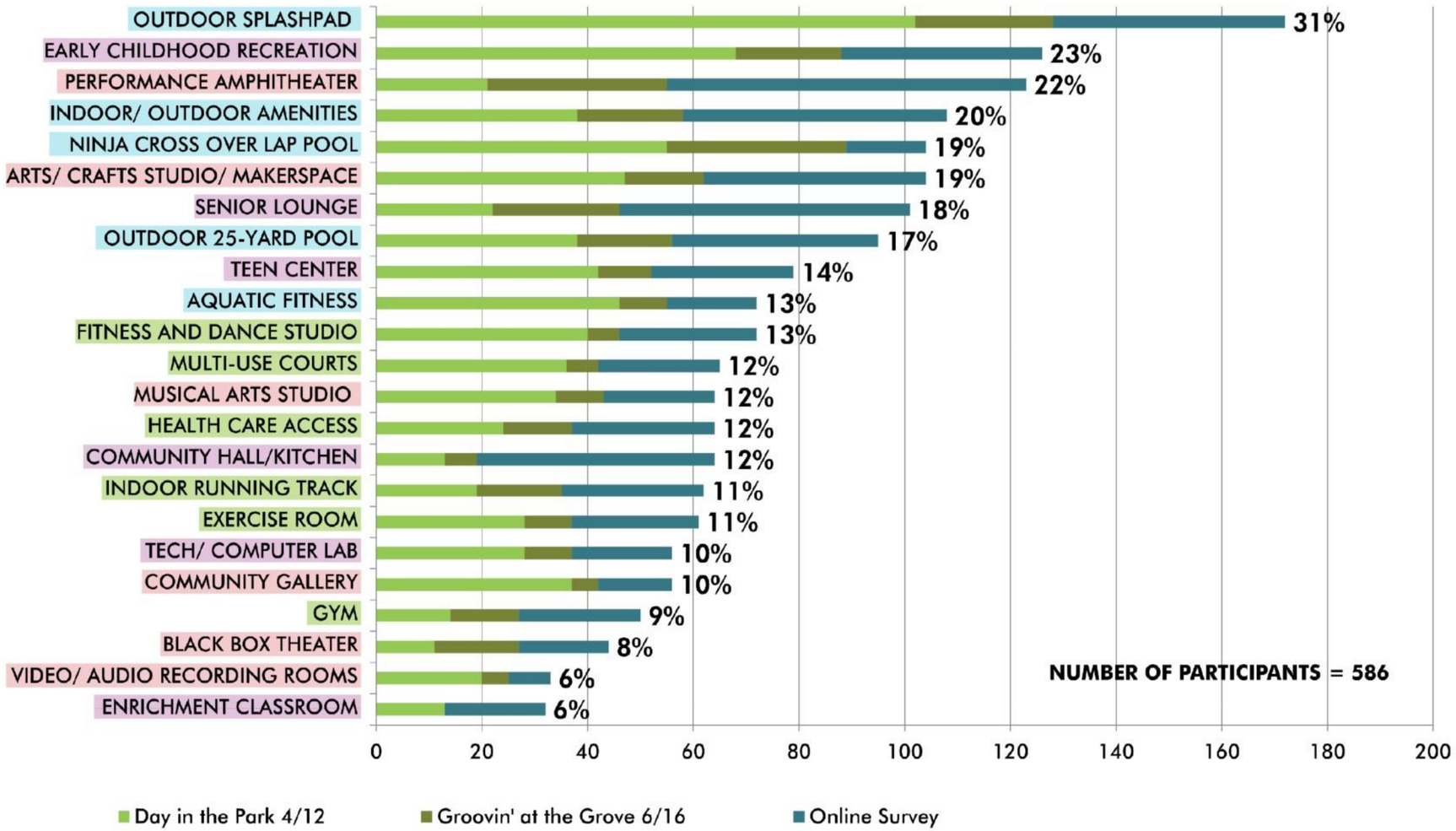


6800 Mowry Avenue

- Phase I: 36,410 SF
- Phase II: 32,320 SF
- Sportsfield Scorekeeper Hut: 680 SF

ROUND 1 COMMUNITY NEEDS ENGAGEMENT RESULTS

Nearly **600 residents** and friends of the Newark community were engaged during round 1. Engagement efforts and pop-ups happened at Newark's Day in the Park on 4/12, Groovin' at the Grove concert series, and through an online survey.



AQUATICS

The residents of Newark prioritize access to aquatic centers. Many were in agreement that the availability of **outdoor splashpads** is important as well as **indoor/ outdoor aquatics** experiences, **aquatic recreation** such as Ninja Crossovers for pools, and **aquatic fitness.**

THE ARTS

The Newark community values the arts and sees the importance of public space for opportunities to hold **theater performance**s, somewhere to **practice and play music**, **arts/ makerspaces,** a community **gallery,** and **video/ audio recording rooms.**

COMMUNITY

Designated space for specific age groups is a priority as well; the Newark community's priorities include **early childhood recreation,** a **senior lounge**, a teen **dedicated teen center**, **community hall/ kitchen**, computer lab, and enrichment classrooms.

RECREATION

Newark community members value spaces which allow them **access to fitness and dance**, a variety of sports with **multi-use courts, health care**, and personal fitness through **gyms and exercise rooms.**

COMMUNITY PROGRAM OPTIONS

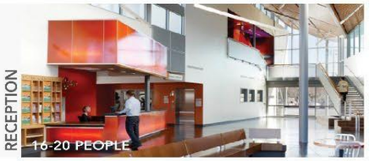
BASE - A

SQUARE FEET
~18,000 SF, 1-Story

1ST FLOOR FOOTPRINT
~18,000 SF

CAPITAL COST
$$$ – $$$$

PARKING
~60 – 130 spaces

LOBBY/ RECEPTION


COMMUNITY GALLERY

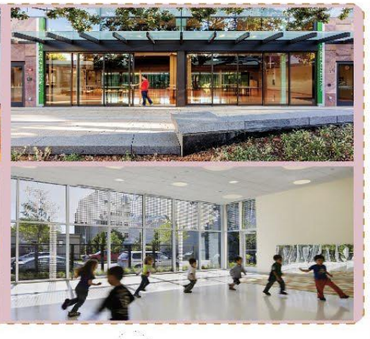

2 PRESCHOOL CLASSROOMS


ART/ MAKER CLASSROOM


\+ STAFF SUPPORT SPACES


CHAMBER OF COMMERCE


COMMUNITY ROOM
Divisible into 2: 500 people assembly, 300 banquet



A

B

SQUARE FEET
~25,000 SF, 2-Story

1ST FLOOR FOOTPRINT
~18,000 SF

CAPITAL COST
$$$$ – $$$$$

PARKING
~80 – 150 spaces

BASE +

2 MEETING ROOMS


CONFERENCE ROOM


SENIOR LOUNGE


CONSULTATION ROOM


CAFE & VENDING


B

C

SQUARE FEET
~32,000 SF, 2-Story

1ST FLOOR FOOTPRINT
~20,000 SF

CAPITAL COST
$$$$$ – $$$$$$

PARKING
~105 – 175 spaces

BASE + B +

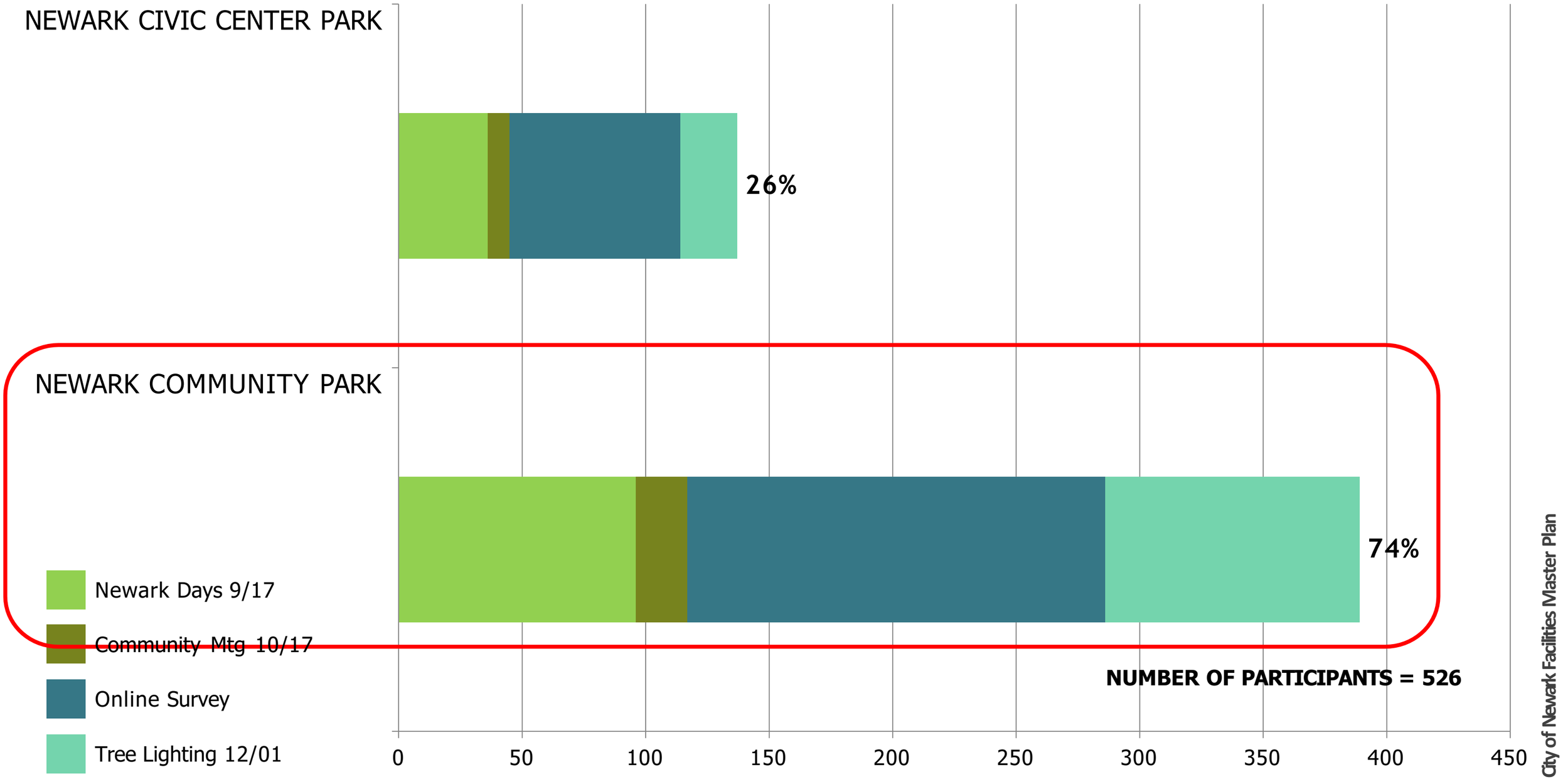
DANCE STUDIO


MUSIC ROOM


ARTS/ CERAMICS STUDIO


C

ROUND 2 COMMUNITY NEEDS ENGAGEMENT RESULTS



COMMUNITY PARK OPTIONS

OPTION A



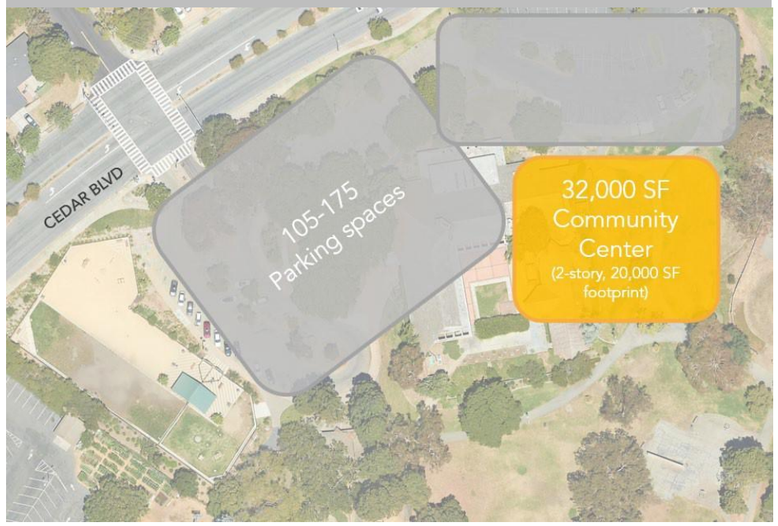
OPTION B1 (one-story)



OPTION B2 (two-story)



OPTION C



NEWARK ADMINISTRATION, PUBLIC SAFETY & SERVICE FACILITIES

7 FIRE STATION 27



39039 Cherry Drive
- 7,005 SF

8 FIRE STATION 28

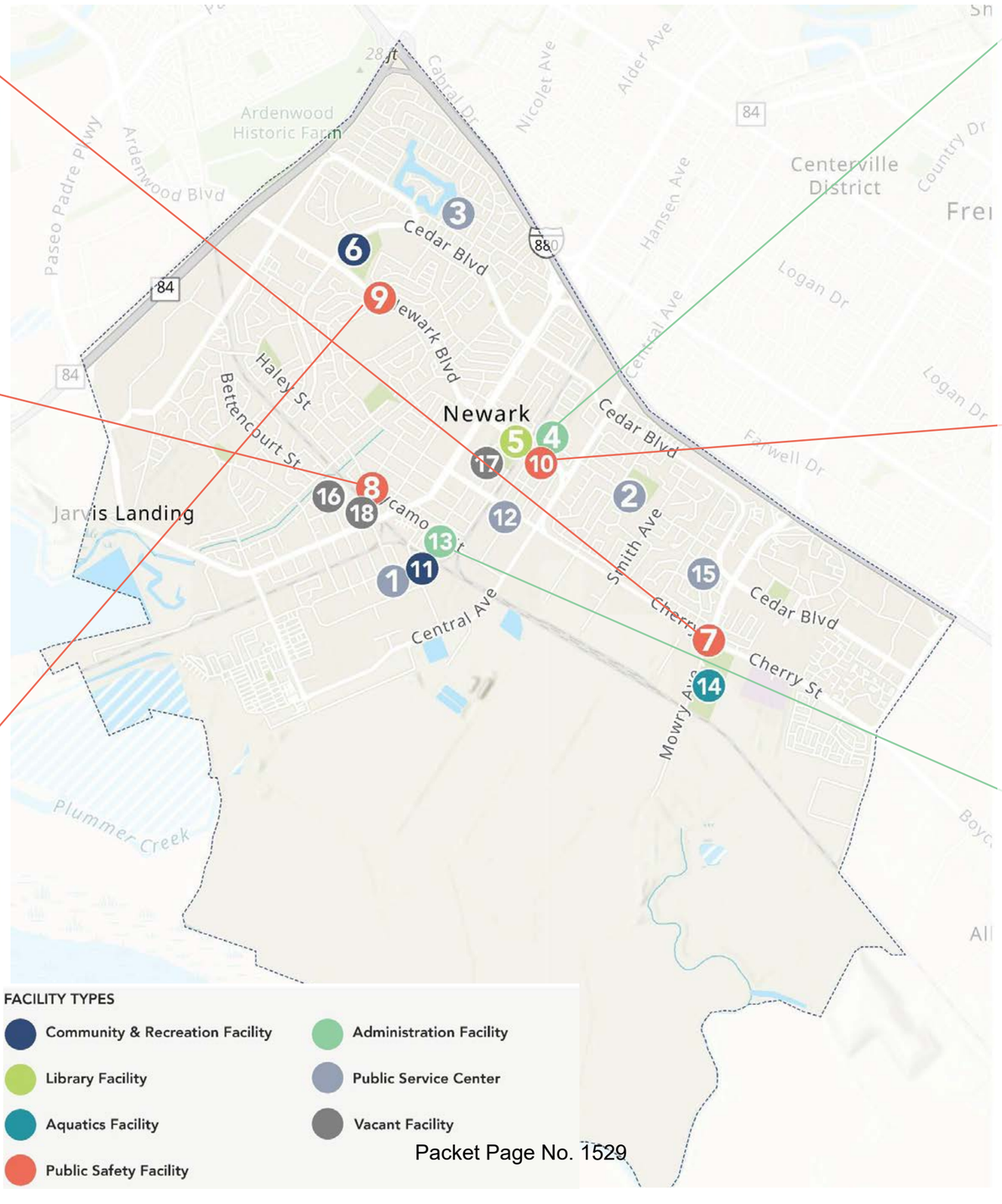


7550 Thornton Avenue
- 18,000 SF

9 FIRE STATION 29



35775 Ruschin Drive
- 5,450 SF



4 DAVID W. SMITH CITY HALL



37101 Newark Blvd.
- 25,638 SF

10 POLICE STATION



37077 Newark Blvd.
- 23,987 SF

13 SERVICE CENTER (NEWARK PUBLIC WORKS MAINTENANCE)



37440 Filbert Street
- 24,700 SF

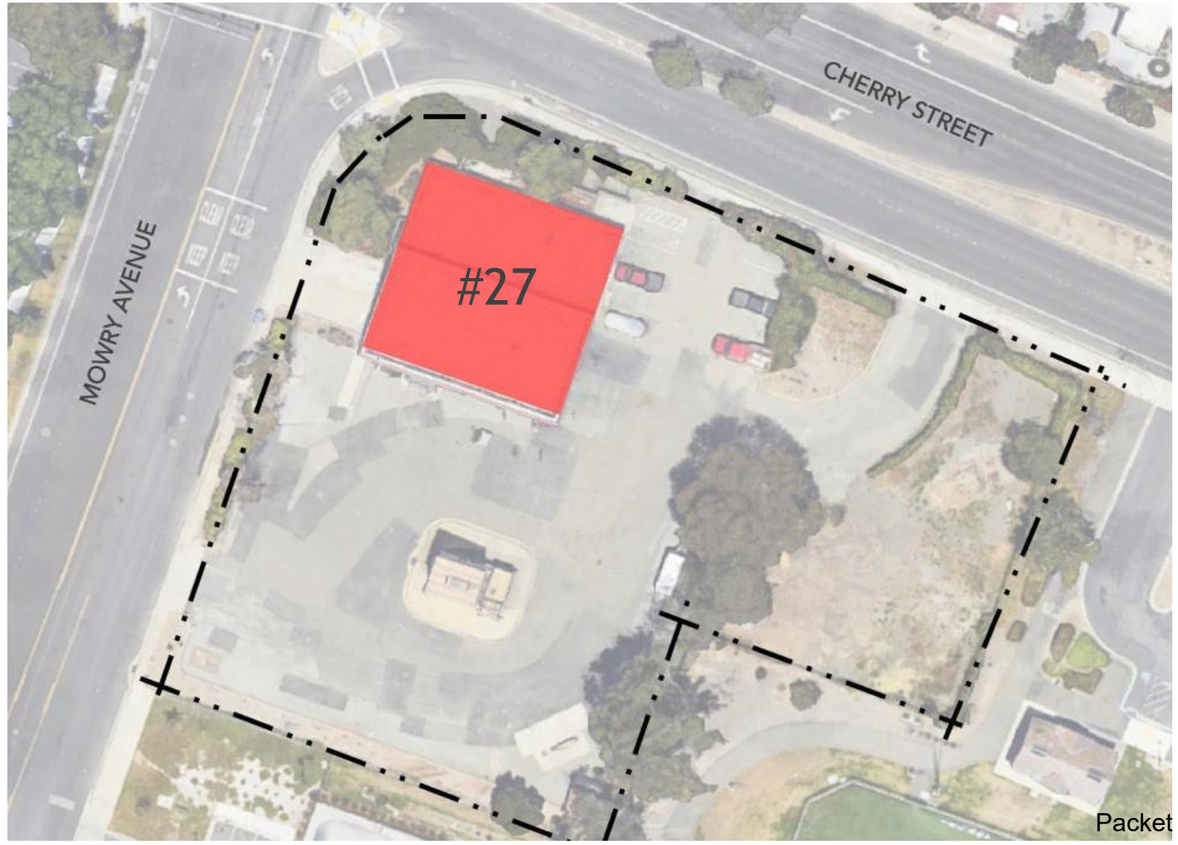
FIRE STATION NEEDS

ESSENTIAL SERVICE ACT COMPLIANCE ISSUES
Both facilities need seismic strengthening and emergency back-up power.

CODE COMPLIANCE ISSUES
Current facilities do not meet current ADA as well as other compliance issues with egress and ventilation.

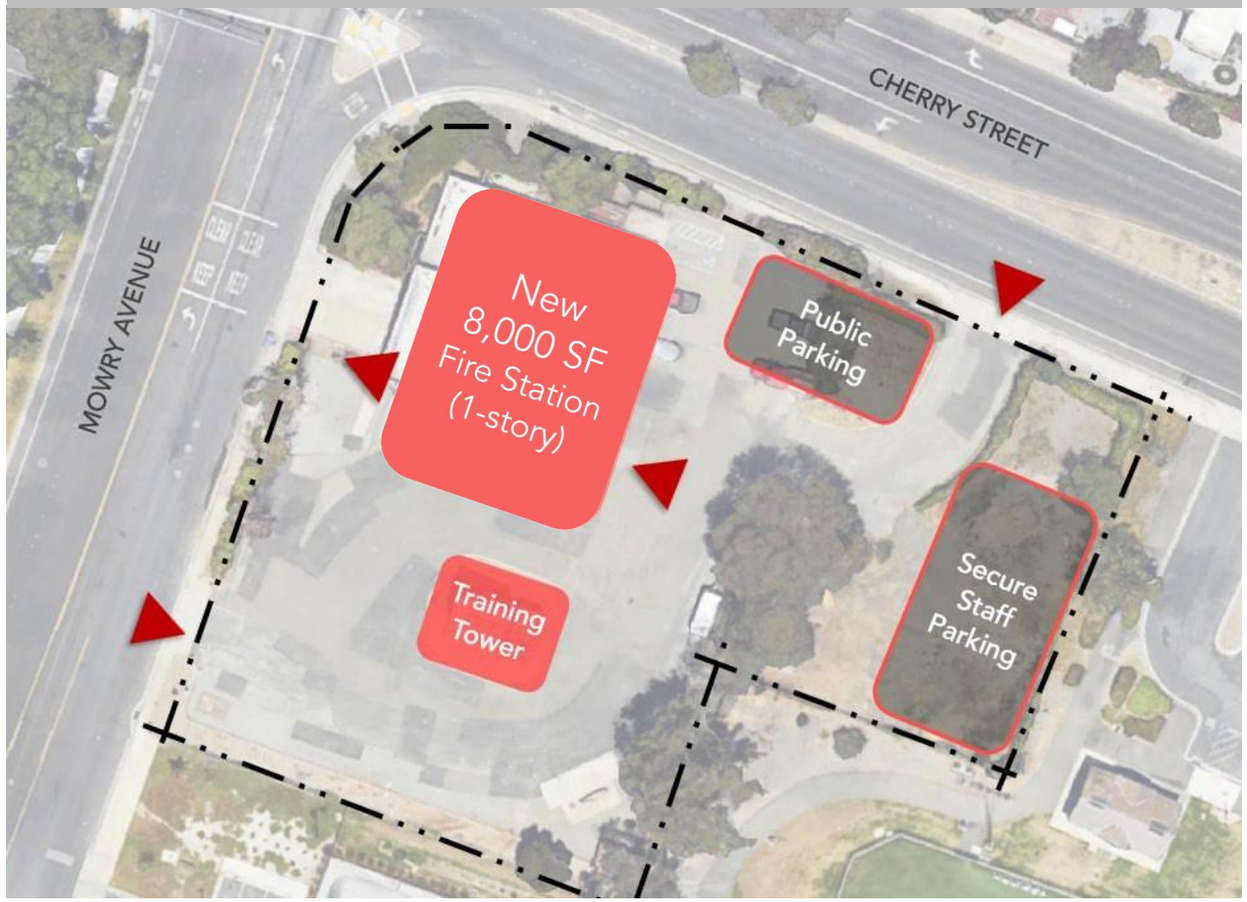
LIFE SAFETY ISSUES
Current facilities need fire alarm systems.

OPERATIONS
Improvements to bring facilities up to current best practices for fire operations and security.

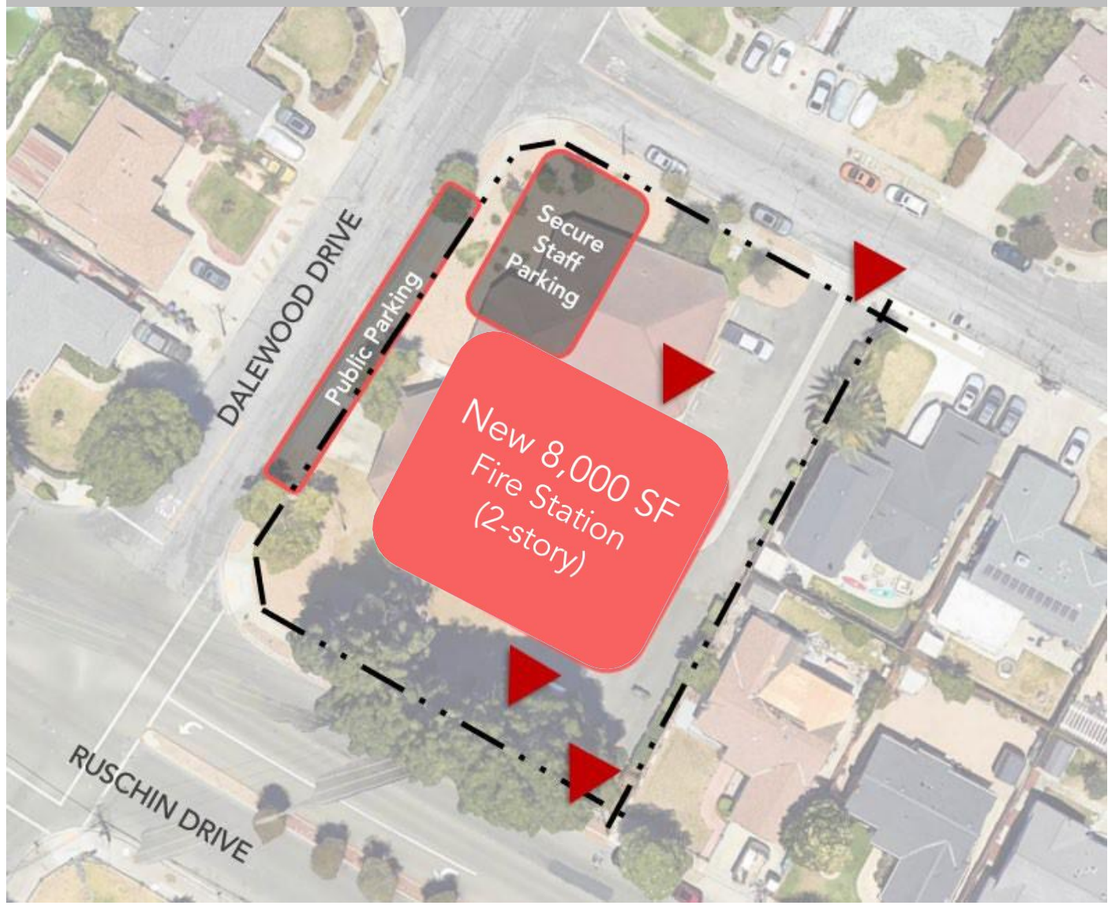




FIRE STATION #27



FIRE STATION #29



AGENDA

1. Project Goals and Schedule
2. Facility Conditions Assessment
3. Space Needs
   - Community Buildings
   - Fire Stations 27 & 29
4. Implementation Plan



FACILITY IMPROVEMENT PROJECTS

		Project Costs	Immediate & Short Term	Near Term (3-5 yrs.)	Mid Term (6-10 yrs.)	Long Term (11-20 yrs.)
AQUATICS	Improvement to Silliman Center • Updated pool amenities • Improve Check-in and Staff Workspaces • Ninja Cross and Aquatic Fitness	*$7-9M* *($5-6M)* *($1-1.5M)* *($1-1.5M)*			✓	
COMMUNITY & ARTS	New 18-32k SF Community & Arts Center @ Community Park	*$31-56M*	✓			
RECREATION	Improvement to Silliman Center • Improved Storage • Evaluate underutilized space for additional program opportunities • Evaluate additional gym and courts w/indoor walk/run track	*$3-4M* *$23-28M*				✓ ✓
CITY HALL	Minor improvements to City Hall	*$1.5-2M*				✓
SERVICE CENTER	Improvements to Service Center • New Admin Building • New maintenance bays (4) • Update locker/changing rooms and break room • Update HVAC in Shop Bldg. • Additional covered parking	*$18.5-23M* *($3-4M)* *($7-8M)* *($2-3M)* *($.5-1M)* *($6-7M)*		✓		
FIRE	New ~ 8k SF Fire Station 27 New ~ 8k SF Fire Station 29 Upgrades to Fire Station 28	*$15-19M* *$15-19M* *$1.5-2M*	✓ ✓	✓		
POLICE	Minor improvement to Police	*$2-2.5M*			✓	
SAFETY ISSUES			$52-500K			
MAINTENANCE			$4.5-12.3M	$7.4-10M	$15.7-20.5M	$45-57.6M

THANK YOU!

GROUP 4
ARCHITECTURE

STAFF REPORT

Item F. 3.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Art Interiano, Deputy Community Development Director
SUBJECT	Resolution Approving an Alternate Means of Compliance for the Lepashki Homes Project

SUMMARY AND RECOMMENDATION

Lepakshi Homes submitted an application to develop 88 dwelling units and 1,620 square feet of commercial space in two buildings located on Thornton Avenue adjacent to Olive Street and Mulberry Street. The project site is located at the intersection of Thornton Avenue and Olive Street in the central part of the City of Newark. The project is in the Old Town Newark Specific Plan (OTNSP) Area. As part of the project, the developer requested to provide 13 units to low-income households as an alternative means of compliance to payment of the affordable housing impact fee.

Newark's Affordable Housing Program requires that developers pay an impact fee to preserve or increase the supply of affordable housing in the city. As an alternative to paying the impact fee, a developer may provide on-site affordable housing units per Newark Municipal Code (NMC) Section 17.18.050, subject to City Council approval.

Providing affordable units is subject to an Affordable Housing Regulatory Agreement established between the City and the residential developer. To comply with the requirements of NMC Section 17.80.050, the developer has agreed to an Affordable Housing Regulatory Agreement. The Regulatory agreement is between the City and Lepakshi Homes and describes the obligations and securities required by the City.

At their meeting on August 13, 2024, the Planning Commission voted 5-0-0 to approve the Design Review Architectural Permit, Density Bonus Incentives/Waivers, and Vesting Tentative Map for the project (the Entitlements). The Planning Commission also recommended that the City Council adopt a resolution approving the Alternative Means of Compliance to Payment of the Housing Impact Fee for the Lepakshi Homes project based on an Affordable Housing Regulatory Agreement. The Entitlements are conditioned upon City Council approval of the Alternative Means of Compliance.

Staff recommends that the City Council adopt a Resolution approving an Alternative Means of Compliance for the Lepakshi Homes project, which will provide 13 units for low-income households in lieu of payment of an affordable housing fee for a project consisting of 88 residential condo units and 1,620 square feet of commercial

space (APNS: 692-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, and 92-31-16-2).

BACKGROUND

Project Context and Proposal

The project is located within the City of Newark's Old Town Newark Specific Plan (OTNSP) Area, which was established in 2021 via adoption of the OTNSP. The goal of the OTNSP is to create a vibrant, more walkable, and pedestrian-friendly commercial district. The Specific Plan allows for greater residential development in a commercial/mixed-use district format that will allow future residents better walking access to basic goods and services as well as dining and some employment options. It also modifies standards in the residential zoning districts adjacent to the Commercial Core sub-area of the OTNSP to provide a better transition between the higher density core and lower density neighborhoods and increase the residential population that can walk to the services and goods provided in the core.

The site is designated Commercial Mixed Use (CMU) on the City's General Plan Land Use Map and Zoning Map and is located within the Commercial Core sub-area of the OTNSP. The project is identified as an "opportunity site" for potential future development by the OTNSP.

The project site consists of seven parcels, with Assessor's Parcel Numbers (APNs): 692-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, and 92-31-16-2, which are proposed for consolidated development as two adjacent lots. The two roughly rectangular lots are separated by a small green space and cul-de-sac area located at the terminus of Olive Street, which is part of the public right-of-way. Lot 1, the larger and more easterly of the two lots, is approximately 43,976 square feet (1.01 acres) and Lot 2, the smaller lot located to the west, is approximately 10,770 square feet (0.25 acres), for a total site area of 54,746 square feet (1.25 acres). The project site is bordered by single-family homes to the west and by commercial development to the north, east, and south.

Project Design

The applicant is proposing to construct a total of 88 units in two buildings (Buildings A and B) on two lots. The lots are separated by a green space that is in the public right-of-way. The building design is contemporary Spanish architectural design. The façades include wrought iron balconies and colorful ceramic tiles. The ground floor of the buildings has identifiable entrances along Thornton Avenue that include towers with tile roofs, metal canopies, awnings, tile veneers, horizontal and vertical trim, and accents. Building A is located on Lot 1, which is approximately one acre. This building is five stories and includes a total of 60 multi-family units and 125 parking spaces. Building B, which is to be located on Lot 2, would have essentially the same architectural style as Building A. This building would also be five stories, with a maximum height of 62 feet. It would provide 28 residential units and 1,620 square feet of ground floor commercial. This building would also provide 13 parking spaces. An additional 22 parking spaces and bike parking for this building would be in the garage for Building A. Given the significance of this project, staff worked with Larry Cannon of

the Cannon Design Group to review the proposed architecture and make recommendations regarding the project's consistency with the OTNSP and the overall design of the project. Mr. Cannon reviewed several iterations of the project and made several recommendations for changes that are summarized below:

- Simplify and unify the facades using a common bay and window design whenever possible
- Unify the corners of the overall design
- Add variety to the top floor heights
- Enhance the pedestrian experience
- Add projecting eaves and gable ends
- Add balconies

The applicant revised the design to implement Mr. Cannon's recommendations by simplifying the design by using common bay and window designs, varied the heights of the gables, and adding balconies, projecting eaves and gable ends.

Density Bonus Concessions/Waivers

Overall, the project would substantially comply with the Zoning Code, such as the height and parking requirements. While the applicant is not requesting an increase in density, this project qualifies for an incentive/concession due to the amount of affordable units provided. An incentive/concession is defined as a reduction in site development standards or a modification of zoning code or architectural design requirements, such as a reduction in setback or minimum square footage requirements, approval of mixed-use zoning, or other regulatory incentives or concessions that result in identifiable and actual cost reductions. In addition, the Density Bonus Law grants the waiver or reduction of an unlimited number of development standards that would have the effect of physically precluding the construction of the development with the density bonus and incentives/concessions requested.

The following sections list the incentive/concession and waivers requested for the project and provide a brief explanation for each.

Development Standard	Incentive/Concession	Waiver
Residential on Gound Floor of Thornton Ave	✓	
Visibility Triangle requirement		✓
Increase in fence height		✓
Width requirement for Commercial Space		✓

Incentive/Concession -- Residential on the ground floor - The OTNSP does not permit residential units on the ground floor of a development fronting Thornton Avenue. Residential may be located elsewhere on the ground-floor if set back a minimum of 10 feet from the property line. In Building A, there are four units located on the ground floor along Thornton Avenue and one unit along the ground floor on Mulberry Street. All five units would have to be eliminated to meet this requirement, which would impact the viability of the project. Not allowing the units on the ground floor also

impacts the design. The project has been designed to continue a similar appearance to Building A and to provide the transparency required by the OTNSP.

Waiver #1 – Visibility Triangle - Chapter 10.36 Visibility Requirements requires the sight visibility triangle to be measured from the right-of-way for the new driveways on Thornton Avenue and the corner of Mulberry Street and Thornton Avenue. The applicant requested a waiver to allow the sight visibility triangle to be measured from the face of the curb instead. The site triangle is not needed due to the intersection being right turn only and there is a median on Thornton Avenue that prevents left turns onto Mulberry Street. The Public Works Engineering Division has reviewed this request and does not object based on the OTNSP policies and standards.

Waiver #2 – Fence Height - Section 17.17.040 Fences and Freestanding Walls allows the maximum height of fences to be 6 feet on non-residential properties along the rear property line. The applicant requested a waiver to allow the fence to be eight feet tall to provide additional privacy between the project site and the adjoining properties. The code allows fences to be eight feet tall with approval of a minor use permit. This request was proposed as a waiver to streamline the approval process and provide additional privacy for the adjacent neighbors.

Waiver #3 – Width Requirement for Commercial Space - Section 17.080.040(A) Requires commercial space to be a minimum of thirty-feet wide. The width of the commercial space in Building B ranges from 23 feet to 26 feet. This building is on Lot 2 and is a narrow lot that is just over 10,000 square feet. Redesigning the commercial space to provide a minimum dimension of 30 feet would require relocating the stairs and mechanical space and would either result in not having sufficient parking or potentially having to reduce the unit count to accommodate the reduction in parking. Some of the parking for Building B (22 spaces), is located in Building A and there is not sufficient space to accommodate any loss of parking in Building B.

Vesting Tentative Tract Map

The applicant requested for a Vesting Tentative Tract Map 8632 to construct the 88 multi-family units and 1,620 square feet of commercial space on two lots that would replace the existing seven lots. The two roughly rectangular parcels are separated by a small green space and cul-de-sac area located at the terminus of Olive Street, which is part of the public right-of-way. This area will continue to be owned and maintained by the City and will be landscaped as part of the Thornton Avenue Streetscape project.

California Environmental Quality Act (CEQA)

In 2021 the City of Newark certified the OTNSP Addendum to the General Plan EIR which analyzed the environmental impacts of implementation of the OTNSP, including development of the project site. This analysis determined that implementation of the OTNSP would not result in any new or substantially more severe environmental effects than what was already disclosed and analyzed in the General Plan EIR that was certified in 2013. As discussed in the Environmental Checklist), the project would not result in substantially more significant (or severe) environmental effects than those identified in the Addendum to the General Plan EIR. Based on this analysis, the project qualifies Section 15183.3 of CEQA Guidelines which limits project level review for infill

developments for which effects have been addressed by planning decisions or uniformly applicable development policies. Additionally, this analysis demonstrates that the project also qualifies for an Eligible Community Plan or Zoning Exemption and Infill Exemption, and no additional environmental review is required under CEQA Guidelines Sections 15183 and 15183.3.

Community Meeting
The applicant held two community meetings for the project. The first meeting was held on July 6, 2023, at the Silliman Activity and Family Aquatic Center and the other on June 20, 2024, at the Community Meeting Room in the Newark Library.

At the July 6, 2023, there were approximately eight people in attendance at the meeting. Residents raised questions and concerns regarding parking, traffic along Olive Street and Thornton Avenue, the height of Building B being too tall and that it would cast a shadow and overlook onto a single-family residential property. The residents also requested that the open space area at the Olive Street cul-de-sac look aesthetically pleasing. Since the meeting, the applicant has made changes to the design of the project and scheduled a second community meeting on June 20, 2024.

At the June 20, 2024, community meeting, the applicant presented an updated overview of the project. The project architect attended virtually. Approximately six people attended the meeting. Comments included questions about parking along the street and vehicular traffic from the project's residential units.

DISCUSSION/ANALYSIS

Affordable Housing Program
Affordable housing in Newark is guided by existing policies and actions contained in the 2015-2023 Housing Element and the requirements within the NMC Chapter 17.18, Affordable Housing Program. State housing law provides additional requirements and regulations for the development and maintenance of affordable housing. Together, these policies and regulations provide the affordable housing framework upon which affordable housing decisions are made within Newark. The City’s Community Development Department (CDD) is responsible for implementing affordable housing policies and laws.

Newark’s Affordable Housing Program requires that developers pay an impact fee to preserve or increase the supply of affordable housing in the city. As an alternative to paying the impact fee, a developer may provide on-site affordable housing units per NMC 17.18.050, subject to City Council approval.

Affordable Housing Request
The project is providing 13 units that will be sold to low-income households. Affordable housing in Newark is guided by existing policies and actions contained in the 2023-2031 Housing Element such as increasing access to affordable housing by requiring on-site production of units rather than allowing the payment of an in-lieu or impact fee to support increased access to affordable housing opportunities across the

city and in high opportunity areas and the requirements within the NMC Chapter 17.18, Affordable Housing Program. State housing law provides additional requirements and regulations for the development and maintenance of affordable housing. Together, these policies and regulations provide the affordable housing framework upon which affordable housing decisions are made within Newark. The City's Community Development Department (CDD) is responsible for implementing affordable housing policy and laws.

Alternative Means of Compliance
Newark's Affordable Housing Program requires that developers pay an impact fee to preserve or increase the supply of affordable housing in the city. As an alternative to paying the impact fee, a developer may provide on-site affordable housing units per NMC 17.18.050, subject to City Council approval. The developer is requesting to provide 13 affordable units in-lieu of paying the impact fee.

The current Housing Impact Fee rate for multi-family residential projects is $24.68 per square foot of floor area for the first 1,000 square feet and $9.89 per square foot above 1,000 square feet, per unit. Based on the proposed size and number of residential units from both projects, the Housing Impact Fee for the 88 units would be $1,971,253. As allowed by NMC 17.18.050, residential developers may provide affordable units on site as an alternative to payment of the Housing Impact Fee, subject to City Council approval. As part of the Housing Impact fee resolution, the City Council established minimum percentages and affordability levels for affordable units which, if satisfied, would automatically qualify as an approved alternative means of compliance without the need for further approval. Applicants may still propose alternative means of compliance, but City Council approval is required.

For the proposed development, 17% (15 units) of the units would need to be provided as affordable housing (divided between very low-income, low income, and moderate income) to mitigate housing impacts per Resolution 10,184. However, the city has requested, and the developer is providing 15% (13 units) at the low-income affordability level.

The affordable units would be provided as affordable housing to households with an income of no greater than 80% of the Area Median Income for Alameda County. The units would consist of a mix of eleven 1-bedroom and two 2-bedroom units. Staff believes the proposed affordable units will be more beneficial and appeal to a larger pool of future residents in the area. While this would result in a fewer number of overall affordable units, all the units will be low-income units, with no moderate-income units. This will help support homeownership opportunities for low-income households, which are rare.

Regarding the location of the affordable units, a total of 11 units will be in Building B, including 9 one-bedroom units and 2 two-bedroom units. Two one-bedroom units will be in Building A. The affordable units will be indistinguishable from the market-rate units. Providing below-market rate units in-lieu of paying housing impact fees has been strongly supported by the City in the past.

Affordable Housing Regulatory Agreement
Providing affordable units are subject to an Affordable Housing Regulatory Agreement established between the City and the residential developer. To comply with the requirements of NMC Section 17.80.050, the developer has agreed to an Affordable Housing Regulatory Agreement (Attachment 1, Exhibit A). The Regulatory Agreement is between the City and Lepakshi Homes and describes the obligations and securities required by the City. The Regulatory Agreement establishes standards to enforce implementation and management requirements for the affordable units. This agreement would establish the total affordable unit count and income category distribution described, set the deed-restricted affordable duration (45 years), Newark local preference and various other terms for Lepakshi's homes initial sale of the units. Individual buyers of the affordable units will be required to enter into similar agreements at the time of purchase to ensure the units are used as affordable housing. This agreement would also establish administrative and ongoing management requirements. When the affordable units are resold, the Homebuyer will retain the value of any improvements, be reimbursed for the down payment, and the appreciation, per State law, will be equally shared between the City and the Homebuyer. The City's share of the appreciation would be deposited into the City's Housing Fund, which funds the City's affordable housing programs.

In terms of implementation, the Community Development Department's Planning Division will oversee compliance with the agreement as part of their duties. Additionally, a consulting firm is expected to be hired to assist with the sale and resale of units citywide.

FISCAL IMPACT

Approval of the Alternate Means of Compliance for the Lepashki Homes will result in the creation of 13 affordable units for low-income residents in-lieu of paying housing impact fees to the city in the amount of $1,971,253. The housing impact fee amount is an approximate amount based on the housing impact fee that would be applicable today, based on the City's Impact Fee Schedule for Fiscal Year 2024/2025.

ENVIRONMENTAL/PLANNING COMMISSION REVIEW

The Planning Commission reviewed the project at their meeting of August 13, 2024. One member of the public spoke at the meeting and expressed concern about traffic. As part of the environmental review of the project, it was determined that all potential environmental impacts had no significant impact and that the project qualified for the Eligible Community Plan or Zoning Exemption and Infill Exemption and no additional environmental review is required. At the conclusion of the meeting, the Commission voted 5-0 to approve the Design Review, Density Bonus Concessions/Waivers and Vesting Tentative Map applications. The Commission also voted 5-0 to recommend that the City Council approve the Alternative Means of Compliance for Paying the Affordable Housing Fee.

REVIEW AND APPROVAL

Prepared by - Art Interiano, Deputy Community Development Director
Reviewed by - Steven Turner, Community Development Director
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

Resolution Alternative Means of Compliance

Exhibit A-Affordable Housing Regulatory Agreement

Project Plans

Presentation

RESOLUTION NO. _____

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF NEWARK APPROVING AN ALTERNATE MEANS OF COMPLIANCE TO PAYMENT OF HOUSING IMPACT FEES FOR THE LEPAKSHI HOMES PROJECT CONSISTING OF 88 RESIDENTIAL UNITS AND 1,620 SQUARE FEET OF COMMERCIAL (APNS: 692-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, AND 92-31-16-2)

WHEREAS, Lepakshi Homes (the "Applicant") submitted an application to develop 88 dwelling units (including 13 units that will be sold to low-income households) and 1,620 square feet of commercial in two buildings located on Thornton Avenue APNS: (692-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, and 92-31-16-2) (the "Property") (the "Project"); and

WHEREAS, the Applicant proposes to demolish the existing buildings and site improvements; and

WHEREAS, the Property consists of seven parcels, which are proposed for consolidated development as two adjacent lots. Lot 1 is approximately 43,976 square feet (1.01 acres) and Lot 2, is approximately 10,770 square feet (0.25 acres), for a total site area of 54,746 square feet (1.25 acres and are designated Commercial Mixed Use ("CMU") on the City's General Plan Land Use Map and Zoning Map; and

WHEREAS, the Project will consist of condominium units, and the Applicant has obtained a condominium map or similar approval so that each of the units may be independently conveyed; and

WHEREAS, Newark Municipal Code ("NMC") Chapter 17.18 requires that developers of residential housing units pay a housing impact fee to contribute to the supply of housing for households with very low, low, and moderate incomes. The amount of the housing impact fee was established by the Newark City Council pursuant to Resolution No. 10,184; and

WHEREAS, NMC Section 17.18.050 allows a developer to provide on-site affordable units as an alternative to paying the housing impact fee, provided that the proposed alternative means of compliance is approved by the City Council in accordance with the procedures set forth in Section 17.18.050; and

WHEREAS, the Applicant has proposed restricting the sale, and occupancy, of thirteen (13) units in the Project at an affordable price (the "Restricted Units"). The Restricted Units shall be offered for sale to households with an income of no greater than eighty percent (80%) of the Area Median Income; and

WHEREAS, the Parties have agreed to enter into and record an Affordable Housing Regulatory Agreement in order to satisfy the conditions described in the foregoing Recitals and in NMC Chapter 17.18. The purpose of this Agreement is to regulate and restrict the occupancy and sale of the Project's Restricted Units for the benefit of the Project occupants and the City. The Parties intend that the covenants outlined in this Agreement to run with the land and to be binding upon all parties having or acquiring any right, title or interest in the Property or any part thereof, their heirs, successors and assigns; and

WHEREAS, the Planning Commission held a public hearing on August 13, 2024, and fully considered the Project, entitlements, staff report, findings of fact, conditions of approval, public comments, and all other testimony and evidence presented at the public hearing and approved the Project entitlements conditioned upon approval of the alternative means of compliance to payment of the housing impact fee. The Planning Commission also made the necessary findings pursuant to NMC Section 17.18.50(D) to recommend City Council approval of the alternative means of compliance to payment of the housing impact fee.

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Newark as follows:

Section 1. That the forgoing recitals are true and correct and made part of this Resolution.

Section 2. The City Council finds that alternative means of compliance for the Applicant to provide 13 Restricted Units for sale to households with an income of no greater than eighty percent (80%) of the Area Median Income as an alternative means of compliance to payment of the housing impact fee fulfills the requirements of NMC Section 17.18 for the Project and fully mitigates the impacts of the Project on the need for affordable housing, based on the community needs and the characteristics of the Project and makes the following findings pursuant NMC 17.18.050(D): 1) the proposed alternative means of compliance fulfills the purposes of NMC Chapter 17.18 as set forth in NMC Section 17.18.010, to provide of safe and stable housing for households at all income levels is essential for the public welfare of the city; 2) the proposed alternative means of compliance will further affordable housing opportunities in the city to an equal or greater extent than compliance with the requirements of NMC Section 17.18.020, and will fully mitigate the impact of the Project on the need for affordable housing; 3) the proposed alternative means of compliance would better address the city's needs than compliance with the requirements of NMC Section 17.18.020; and 4) the proposed alternative means of compliance will not unduly concentrate affordable housing in one geographic area so as to result in housing segregation.

Section 3. Based on the findings and determinations, the City Council hereby approves an Alternate Means of Compliance to Payment of Housing Impact Fees for a residential development to provide 13 units that will be sold to households with an income of no greater than eighty percent (80%) of the Area Median Income as part of a development consisting of 88 dwelling units and 1,620 square feet of commercial in two buildings located on Thornton Avenue APNS: 692-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, and 92-31-16-2, subject to the Affordable Housing Regulatory and Satisfaction Agreements as further set forth in **Exhibit A** attached hereto and incorporated herein by this reference, as approved to form by the City

Attorney.

Section 4. The City Manager is authorized to take all actions necessary to implement the intent of this Resolution including execution of all necessary documents, in a form approved by the City Attorney.

Recording requested by and when
recorded mail to:

City of Newark
37101 Newark Blvd.
Newark, CA 94560
Attn: Community Development Director

EXEMPT FROM RECORDING FEES PER
GOVERNMENT CODE §§6103, 27383

APNs

Space above this line for Recorder's use.

AFFORDABLE HOUSING REGULATORY AGREEMENT

AND

DECLARATION OF RESTRICTIVE COVENANTS

by and between

THE CITY OF NEWARK,
a California Municipal Corporation

and

KISHORE POLAKALA,
an individual

(Lepashki Homes)

DRAFT

THIS AFFORDABLE HOUSING REGULATORY AGREEMENT AND DECLARATION OF RESTRICTIVE COVENANTS (this "**Agreement**") is entered into effective as of _____, 2024 (the "**Effective Date**") by and between the City of Newark, a California municipal corporation (the "**City**") and Kishore Polakala, an individual ("**Developer**"). Developer and City are hereinafter collectively referred to as the "**Parties**."

RECITALS

A. The Developer is the owner of that certain real property located at 6781 Thornton Avenue in Newark California, also known as Alameda County APNs 92-30-14-3, 92-30-15-2, 92-30-16-2, 92-30-17-2, 92-30-18-4, 92-31-15, and 92-31-16-2, as further described in Exhibit A, attached hereto and incorporated herein (the "**Property**").

B. On _____ the Planning Commission for the City of Newark adopted Resolution No. _____ (the "**Resolution**") approving Design Review for a residential development consisting of two 4-story buildings, with a total of 88 units (each a "Unit") located on the Property (the "**Project**").

C. The Project will consist of condominium units, and the Developer has obtained a condominium map or similar approval so that each of the Units may be independently conveyed.

D. Newark Municipal Code ("**NMC**") chapter 17.18 requires that developers of residential housing units pay a housing impact fee to contribute to the supply of housing for households with very low, low, and moderate incomes. The amount of the housing impact fee was established by the Newark City Council pursuant to Resolution No. 10,184.

E. NMC Section 17.18.050 allows a developer to provide on-site affordable units as an alternative to paying the housing impact fee, provided that the proposed alternative means of compliance is approved by the City Council in accordance with the procedures set forth in Section 17.18.050.

F. The Developer has proposed restricting the sale, and occupancy, of thirteen (13) units in the Project at an affordable price (the "**Restricted Units**"). The restricted units shall be offered for sale to households with an income of no greater than eighty percent (80%) of the Area Median Income (the "**Low Income Units**").

G. The City Council has determined that the proposed alternative means of compliance would better address the City's need for affordable housing rather than the payment of the housing impact fee, and approved this alternative pursuant Newark City Council Resolution No. _____.

H. The affordability restrictions imposed on the Restricted Units will last for a period of forty-five (45) years.

I. The City is not providing any financial support for the construction of the Project, and the Owner has requested the City enter into this agreement.

J. The Parties have agreed to enter into and record this Agreement in order to satisfy the conditions described in the foregoing Recitals and in Newark Municipal Code chapter 17.18. The purpose of this Agreement is to regulate and restrict the occupancy and sale of the Project's Restricted Units for the benefit of the Project occupants and the City. The Parties intend the covenants set forth in this Agreement to run with the land and to be binding upon all parties having or acquiring any right, title or interest in the Property or any part thereof, their heirs, successors and assigns.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties declare, covenant and agree by and for themselves, administrators and assigns, and all persons claiming under or through them, that the Property shall be held, transferred, encumbered, hypothecated, used, sold conveyed, improved, leased, and occupied subject to the covenants, conditions and restrictions hereinafter set forth, and further agree as follows.

1. Definitions. The following terms shall have the meanings set forth below whenever such terms are used in this Agreement and the Exhibits attached hereto. Additional terms are defined in the Recitals and text of this Agreement.

1.1 "**Area Median Income"** or "**AMI**" means the area median income for Alameda County California, adjusted for household size, published periodically by the California Department of Housing and Community Development (**"HCD"**) in Section 6932 of Title 25 of the California Code of Regulations or successor provision published pursuant to California Health and Safety Code Section 50093(c). If HCD ceases to make such determination, Area Median Income shall be the median income applicable to Alameda County, with adjustments for household size, as determined from time to time by the U.S. Department of Housing and Urban Development ("**HUD**") pursuant to the United States Housing Act of 1937 as amended, or such other method of median income calculation applicable to the City of Newark that HUD may hereafter adopt in connection with such Act.

1.2 "**Eligible Buyer"** means a prospective purchaser of a Restricted Unit who has been pre-qualified by the City or its designee and who satisfies all of the following requirements:

(a) gross income for the prospective purchaser's household does not exceed Low-Income and has not exceeded such amount for the full calendar year immediately preceding the date of purchase.

(b) The prospective purchaser certifies that he or she intends to occupy the Restricted Unit as his or her principal residence.

(c) The prospective purchaser does not own any other residential real property at the time of the purchase.

(d) The prospective purchaser meets all other applicable eligibility requirements of the City in effect at the time of the purchase.

1.3 "**Low-Income"** means an annual household gross income of not greater than eighty percent (80%) of the Area Median Income, adjusted for household size.

1.4 "**Maximum Initial Sale Price**" means the maximum initial price for a Restricted Unit as described in Sections 3 and 3.1.

1.5 "**Restricted Unit**" means of the residential unit located on the Property which is reserved for sale to an Eligible Buyer at a price that will result in an Affordable Housing Cost in accordance with and as set forth in Sections 3 and 3.1.

2. Marketing; Qualification of Eligible Buyers.

(i) Developer shall market the Restricted Unit to Eligible Buyers in compliance with all applicable fair housing laws. In City's discretion, the City shall pre-qualify Eligible Buyers or shall delegate such responsibility to another entity or to Developer. Developer shall provide to the City proof that prospective purchasers of the Restricted Unit qualify as Eligible Buyers at such time and in such form as City may reasonably require.

(ii) In selling the Restricted Units, Developer shall give first preference to Eligible Buyers in which at least one member lives or works in the City of Newark, and second preference to Eligible Buyers in which at least one member lives or works in Alameda County, unless compliance with the foregoing criteria is prohibited by law or by state or federal sources of financing for the Project, in which case Owner shall notify City of this fact in writing.

3. Sale of Restricted Unit. Developer shall sell the Restricted Unit in accordance with all of the following terms and conditions:

(i) The Restricted Units shall be sold only to an Eligible Buyer who has been pre-qualified by City or its designee at a price not in excess of the Maximum Initial Sale Price. The size and mix of the Restricted Units shall be as follows:

	1-Bedrooms	**2-Bedroom**	**Total**
Low-Income	11	2	13

(ii) The Restricted Units shall be sold at a price not in excess of the Maximum Initial Sale Price to an Eligible Buyer whose household gross income does not exceed Low-Income.

(iii) The Restricted Unit shall be of the same general design as the other units in the Project and shall be comparable to such units in size, amenities and quality of construction. The

Restricted Units shall be intermingled with the other Units on the Property. Residents in all dwelling units, including the Restricted Units, shall have equal access to and enjoyment of all common facilities of the Project.

(iv) All of the Restricted Units shall be constructed concurrently with, or earlier than, other dwelling units in the Project. For purposes of this Agreement, "concurrent construction," shall mean that at least one (1) Restricted Unit must be available for occupancy for every six (6) dwelling units available for rent and occupancy.

(iv) In connection with the sale of each Restricted Unit, Developer shall require the purchaser to execute a Homebuyer Resale Restriction Agreement("**Homebuyer Resale Agreement**") in a form provided by City and shall cause such Homebuyer Resale Agreement to be recorded in the Official Records of Alameda County concurrently with the recordation of the grant deed conveying title to the Property. The Homebuyer Resale Agreement shall provide that when Homebuyer sells the Property, the Homebuyer shall retain the value of any improvements, the downpayment, and the Homebuyer's proportionate share of appreciation, and the City shall recapture the initial subsidy and receive its proportionate share of the appreciation, as further specified in Government Code section 65915(c)(2)(C). City may, in City's discretion, require the execution, delivery and recordation of additional documents in connection with the sale of the Restricted Unit, including without limitation disclosure documents and a performance deed of trust securing the homebuyer's obligations under the Homebuyer Resale Agreement.

3.1 Maximum Initial Sale Price. Developer shall sell the Property, and the Restricted Unit located thereon, to an Eligible Buyer at a price that is not in excess of the Maximum Initial Sale Price as determined by the City. The Parties acknowledge that the Maximum Initial Sale Price is intended to enable Eligible Buyers to purchase the Restricted Unit at a price that will result in affordable housing costs for such Eligible Buyers.

(i) Area Median Income for Eligible Buyers shall be determined at the time the Eligible Buyer is pre-qualified for purchase in accordance with Section 2 hereof;

(ii) The Maximum Initial Sale Price means a home purchase price resulting in an average monthly housing cost (including mortgage loan principal and interest, mortgage insurance fees, property taxes and assessments, an allowance for property maintenance and repairs established by the City based on the initial cost and size of the home, homeowner's insurance premiums, a reasonable utility allowance, and homeowner's association dues) which is equal to or less than:

(a) For Low-Income Households: one-twelfth (1/12th) of thirty-percent (30%) of seventy percent (70%) of Area Median Income, adjusted for household size.

(b) Amounts for utility allowances and other monthly housing cost factors including assumed mortgage interest rates, mortgage insurance fees, maintenance and repair allowances, homeowners' insurance, and homeowner's association dues, shall be

reasonably established by the City in consultation with guidance and regulations published by the Alameda County Housing Authority, or if not available, guidance and regulations published by the California Department of Housing and Community Development and/or the United Stated Department of Housing and Urban Development.

3.2 Compliance Monitoring. Prior to the close of escrow for the initial sale of the Property, Developer shall forward to the City evidence of the purchaser's status as an Eligible Buyer, copies of the buyer's and seller's settlement statements, and executed copies of all closing documents, including the Homebuyer Resale Agreement and such other documents as City may require.

4. Enforcement. The City is deemed to be the beneficiary of this Agreement and the covenants herein, both for and in its own right and for the purpose of protecting the interests of the community and other parties, public or private, for whose benefit this Agreement and the covenants set forth herein have been provided. If any such covenants are breached, the City shall have the right to exercise all rights and remedies at law or in equity, expressly including the remedy of specific performance, and to maintain any actions or suits at law or in equity or other proper proceedings to enforce the curing of such breaches. Except as otherwise expressly stated in this Agreement, the rights and remedies of the parties hereunder are cumulative.

5. Default and Remedies.

5.1 Events of Default. The occurrence of any one or more of the following events shall constitute an event of default hereunder ("**Event of Default**"):

(a) Developer's failure to maintain insurance on the Property and the Project as required hereunder, and the failure of Developer to cure such default within ten (10) business days.

(b) Subject to Developer's right to contest the following charges, Developer's failure to pay taxes or assessments due on the Property or the Project or failure to pay any other charge that may result in a lien on the Property or the Project, and Developer's failure to cure such default within ten (10) business days.

(c) Developer's default in the performance of any term, provision or covenant under this Agreement, and unless such provision specifies a shorter cure period for such default, the continuation of such default for ten (10) business days in the event of a monetary default or thirty (30) days in the event of a non-monetary default following the date upon which City shall have given written notice of the default to Developer, or if the nature of any such non-monetary default is such that it cannot be cured within thirty (30) days, Developer's failure to commence to cure the default within thirty (30) days and thereafter prosecute the curing of such default with due diligence and in good faith, but in no event longer than sixty (60) days from receipt of the notice of default.

5.2 Remedies. If within the applicable cure period, Developer fails to cure a default or fails to commence to cure and diligently pursue completion of a cure, as applicable, or if a cure is not possible, City may bring an action for equitable relief seeking the specific performance of the terms and conditions of this Agreement, and/or enjoining, abating, or preventing any violation of such terms and conditions, and/or seeking declaratory relief; or exercise any rights and remedies available to City under applicable law or in equity.

5.3 **Liquidated Damages. In the event that the Developer sells a Restricted Unit in violation of this Agreement, the City shall retain or recover from Developer the surplus, if any, as its property without any deduction, offset or recoupment whatsoever. For the purposes of this section, the surplus shall be the difference between the actual sales price or fair market value (whichever is greater) net of reasonable and customary real estate commissions paid, and the Maximum Initial Sales Price as applicable under the terms of this Agreement at the time of sale of the Property. If the Developer should sell the Property at market rate to an individual who shall receive title free and clear of the provisions of this Agreement, then the damages suffered by the City by reason thereof would be uncertain. Such damages would involve the replacement costs for another affordable unit, and the expenses of continuing the ownership and control of the Property by the City; postponement of tax revenues therefrom to the community; and the failure of the City to effect its purposes and objectives within a reasonable time, resulting in additional immeasurable damage and loss to the City and the community. It is impractical and extremely difficult to fix the amount of such damages to the City, but the Parties are of the opinion, upon the basis of all information available to them, that such damages would exceed the amount of any projected surplus as the total of all liquidated damages and not as a penalty. In the event that this section should be held to be void for any reason by a court of law, the City shall be entitled to seek the full extent of damages otherwise provided by law.**

5.4 No Waiver. No failure or delay by the City in the assertion of any of its rights and remedies as to any default shall operate as a waiver of any default or of any such rights or remedies.

5.5 Limitation on Damages. In no event shall damages be awarded against City upon an event of default or upon termination of this Agreement

5.6 Mortgagee Right to Cure Default. This Agreement shall be recorded in the Official Records of Alameda County and shall be superior and senior to any lien thereafter placed upon the Property, or any portion thereof, including the lien for any loan, deed of trust, or mortgage ("**Mortgage**"). Notwithstanding the foregoing, no breach hereof shall defeat, render invalid, diminish or impair the lien of any Mortgage made in good faith and for value, but all the terms and conditions contained in this Agreement shall be binding upon and effective against any person or entity, including any lender, deed of trust beneficiary, or mortgagee ("**Mortgagee**")

DRAFT

who acquires title to the Property, or any portion thereof, by foreclosure, trustee's sale, deed in lieu of foreclosure, or otherwise.

5.7 Rental of Units. The Developer shall not Rent the Restricted Units, without the prior written consent of the City, which may be withheld or conditioned by the City as it deems necessary, in its sole discretion, to ensure that the Restricted Unis are made available to and occupied by income eligible households.

6. Covenants to Run with the Land. Developer hereby subjects the Property to the covenants, conditions and restrictions set forth in this Agreement. The Parties hereby declare their express intent that all such covenants, conditions and restrictions shall be deemed covenants running with the land and shall pass to and be binding upon the Developer's successors in title to the Property. All covenants without regard to technical classification or designation shall be binding for the benefit of the City, and such covenants shall run in favor of the City for the entire term of this Agreement. Each and every contract, deed or other instrument hereafter executed applicable to or conveying the Property or any portion thereof shall conclusively be held to have been executed, delivered and accepted subject to such covenants, conditions and restrictions, regardless of whether such covenants, conditions and restrictions are set forth in such contract, deed or other instrument.

7. Nondiscrimination.

7.1 Nondiscrimination. There shall be no discrimination against or segregation of any person, or group of persons, on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code, in the sale, lease, sublease, transfer, use, occupancy, tenure or enjoyment of the Property or the Project, or any part thereof, nor shall Developer, or any party or person claiming under or through Developer, establish or permit any such practice or practices of discrimination or segregation with reference to the selection, location, number, use or occupancy of tenants, lessees, subtenants, sublessees or vendees of the Property, or any part thereof.

7.2 Anti-Discrimination Clauses in Agreements. Developer and its successors and assigns shall refrain from restricting the rental, sale, or lease of any portion of the Property or the Project to any person on account of any basis listed in subdivision (a) or (d) of Section 12955 of the Government Code, as those bases are defined in Sections 12926, 12926.1, subdivision (m) and paragraph (1) of subdivision (p) of Section 12955, and Section 12955.2 of the Government Code. All such deeds, leases or contracts shall contain or be subject to substantially the following nondiscrimination or non-segregation clauses:

8. Term; Release of Property from Agreement.

(a) Subject to paragraph (b) below, the term of this Agreement shall commence upon the Effective Date, and shall, without regard to technical classification or

designation, shall run with the land and be binding on Developer and its successors and assigns for the benefit of the City and the City. The covenants contained in this Agreement shall remain in effect for the longest feasible time, but not less than forty-five (45) years.

(b) Notwithstanding the foregoing paragraph, this Agreement shall be terminated and the lien hereof shall be extinguished and released from title to the Property upon the occurrence of all the following: (i) the issuance of final certificates of occupancy for each Restricted Unit, (ii) the sale of each Restricted Unit to an Eligible Buyer, and (iii) the recordation of the Homebuyer Resale Agreement and City Deed of Trust for all Restricted Units. Provided that conditions (i) through (iii) above have been satisfied with regards to an entire building with the Project, then that specific building will be released from this Agreement.

9. Insurance and Indemnity.

9.1 Indemnity. Developer shall indemnify, defend (with counsel approved by City) and hold City, its elected and appointed officers, officials, employees, agents, and representatives (collectively, the **"Indemnitees"**) harmless from and against all liability, loss, cost, expense (including without limitation attorneys' fees and costs of litigation), claim, demand, action, suit, judicial or administrative proceeding, judgment, penalty, deficiency, fine, order, and damage (all of the foregoing collectively "**Claims**") arising directly or indirectly, in whole or in part, as a result of or in connection with Developer's development, sale or ownership of the Restricted Unit and/or the Project, or Developer's performance or nonperformance under this Agreement. Developer's indemnification obligations under this Section 10.1 shall not extend to Claims resulting solely from the gross negligence or willful misconduct of Indemnitees. The provisions of this Section 9.1 shall survive the expiration or earlier termination of this Agreement and the release of the Property or any part thereof from the burdens of this Agreement. It is further agreed that City and City do not and shall not waive any rights against Developer that they may have by reason of this indemnity and hold harmless agreement because of the acceptance by City, or the deposit with City by Developer, of any of the insurance policies described in this Agreement.

9.2 Insurance. For so long as Developer maintains an interest in the Restricted Unit, Developer shall maintain at Developer's expense, comprehensive general liability insurance and property damage insurance with such coverage and limits as may be reasonably requested by City from time to time, but in no event less than the sum of Two Million Dollars ($2,000,000) per occurrence combined single limit. Such policies shall be issued by insurers licensed to issue such policies in California and having a rating of A-VII or better in Best's Insurance Guide, shall be primary coverage not contributing with and not in excess of any coverage that City may carry, and shall name the Indemnitees (defined in Section 10.1) as additional insureds. Upon City request, Developer shall provide City with such proof of insurance as City shall reasonably request.

10. Miscellaneous.

10.1 Notices. Except as otherwise specified in this Agreement, all notices required to be sent pursuant to this Agreement shall be made by personal delivery or by deposit in the United States mail, first-class, postage prepaid, and shall be deemed to have been delivered and received on the date of personal delivery or five (5) days after deposit in the mail, if sent to the following address:

City: City of Newark
37101 Newark Blvd.
Newark, CA 94560
Attn: Community Development Director

Developer: KISHORE POLAKALA, Developer
[Address]
[Address]
[Address]

10.2 Attorneys' Fees. If a party to this Agreement brings any action, including an action for declaratory relief, to enforce or interpret the provision of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees in addition to any other relief to which that party may be entitled. The court may set such fees in the same action or in a separate action brought for that purpose.

10.3 Waivers; Modification. No waiver of any breach of any covenant or provision of this Agreement shall be deemed a waiver of any other covenant or provision hereof, and no waiver shall be valid unless in writing and executed by the waiving party. An extension of time for performance of any obligation or act shall not be deemed an extension of the time for performance of any other obligation or act, and no extension shall be valid unless in writing and executed by the waiving party. This Agreement may be amended or modified only by a written instrument executed by the Parties and duly recorded in the Official Records of Alameda County.

10.4 Severability. If any provision of this Agreement is held by a court of competent jurisdiction to be invalid or unenforceable, the remainder of this Agreement shall continue in full force and effect.

10.5 Captions; Construction. Each party hereto has had an equivalent opportunity to participate in the drafting of the agreement and/or to consult with legal counsel. Therefore, the usual construction of an agreement against the drafting party shall not apply hereto.

10.6 Action or Approval. Whenever action and/or approval by City is required under this Agreement, the City Manager or his or her designee may act on and/or approve such matter

DRAFT

unless specifically provided otherwise, or unless the City Manager determines in his or her discretion that such action or approval requires referral to City Council consideration.

10.7 Entire Agreement. This Agreement, including Exhibits A, B and C attached hereto and incorporated herein by this reference contains the entire agreement of the Parties with respect to the subject matter hereof, and supersedes all prior written or oral agreements, understandings, representations or statements with respect to the subject matter hereof.

10.8 Binding on Successors. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors and assigns. Each reference in this Agreement to a specifically named Party shall be deemed to apply to any successor or assign of such Party who has acquired an interest in the Property.

10.9 Due Authorization. Developer hereby represents and warrants that all actions necessary on the part of Developer to authorize the execution of this Agreement and to undertake the actions contemplated hereby have been undertaken and the persons executing this Agreement on behalf of Developer have been duly authorized to do so.

10.10 Parties Not Co-Venturers. Nothing in this Agreement is intended to or shall establish the Parties as partners, co-venturers, or principal and agent with one another.

10.11 Counterparts. This Agreement may be executed in multiple counterparts, each of which shall be an original and all of which together shall constitute one instrument.

10.12 Further Assurances. The Parties agree to execute such instruments and to undertake such actions, as may be necessary to effectuate the intent of this Agreement.

10.13 Governing Law; Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of California without regard to principles of conflicts of laws. Any action to enforce or interpret this Agreement shall be filed in the Superior Court of Alameda County, California or in the Federal District Court for the Northern District of California.

10.14 Time is of the Essence. In all matters under this Agreement, the Parties agree that time is of the essence.

DRAFT

IN WITNESS WHEREOF, the City and Developer have executed this Regulatory Agreement and Declaration of Restrictive Covenants as of the date first written above.

CITY

CITY OF NEWARK
a municipal corporation

By:_____
David Benoun, City Manager

DEVELOPER:

KISHORE POLAKALA
an individual

By:_____

By:_____

_____

ATTESTATION:

By: _____
Sheila Harrington, City Clerk

APPROVED AS TO FORM:

By: _____
Kristopher J. Kokotaylo, City Attorney

SIGNATURES MUST BE NOTARIZED.

20005116.1

DRAFT

A Notary Public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of _____

On _____before me, _____, a Notary Public, personally appeared _____, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument, and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signatures(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

_____
Signature of Notary

DRAFT

Exhibit A

PROPERTY

(Attach legal description)

Exhibit B

SITE PLAN

(Attach Planning Commission approved Site Plan)

DRAFT

DRAFT

PROJECT SITE INFORMATION

PROJECT SUMMARY

ADDRESS:	THORNTON AVENUE & OLIVE STREET, NEWARK, CALIFORNIA
EXISTING ZONING:	COMMERCIAL MIXED USE (CMU)
GROSS LOT AREA:	1.257 ACRES, 54,746 S.F.

BUILDING SETBACK

FRONT	0 FEET
SIDE ADJACENT TO RS	20 FEET
SIDE	0 FEET
REAR	0 FEET

DEVELOPMENT CRITERIA	OLD TOWN NEWARK SPECIFIC PLAN	PROPOSED PLAN
DENSITY	100 DWELLING UNITS PER ACRE	70 UNITS PER ACRE
TOTAL UNITS	125 DWELLING UNITS MAX.	88 UNITS
BUILDING HEIGHT	75 FEET MAX.	BUILDING: 61 FEET, CLOCKTOWER: 68'-6" FEET
NUMBER OF STORIES	N/A	BUILING A - 3 STORY TYPE V-A O/ 2 STORY TYPE I-A BUILDING B - 4 STORY TYPE V-A O/ 1 STORY TYPE I-A

BUILDING A

SITE SUMMARY

GROSS LOT AREA: 1.009 ACRES, 43,976 S.F.

BUILDING A SHALL BE FULLY SPRINKLED VIA NFPA 13

2 - 1BR UNIT ARE ALLOCATED AS A BMR UNITS AND SHALL BE SAME UNIT TYPE AS A TYPICAL 1BR UNITS PROVIDED IN THE PROJECT

NUMBER OF UNITS		NEWARK PARKING REQ'D	TOTAL REQ'D	OT MIN PARKING REQ'D	OT MAX PARKING ALLOWED	MIN-MAX PARKING REQ'D
1 BEDROOM UNIT:	15 UNITS	1.25 STALSS PER UNIT	19 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	19-30 STALLS
2 BEDROOM UNIT:	34 UNITS	2 STALLS PER UNIT	68 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	43-68 STALLS
3 BEDROOM UNIT:	3 UNIT	2 STALLS PER UNIT	6 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	4- 6 STALLS
4 BEDROOM UNIT:	3 UNIT	2 STALLS PER UNIT	6 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	4- 6 STALLS
TOWNHOUSE UNIT:	5 UNITS	2 STALLS PER UNIT	10 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	7-10 STALLS
GUEST PARKING		1 PLUS 1 STALL PER 4 UNITS	15 STALLS	NONE REQ'D	1 PLUS 1 STALL PER 4 UNITS	0-15 STALLS
TOTAL	60 UNITS					77-135 STALLS

PARKING PROVIDED: 125 STALLS;
PARKING GARAGE SHALL BE MECHANICALLY VENTILATED

LONG TERM BICYCLE RACK PROVIDED: 60 RACKS (@ 1 RACK PER UNIT)

88 LONG TERM WALL MOUNT BICYCLE RACK LOCATED WITHIN BUILDING 'A' GARAGE

7 SHORT TERM BICYCLE RACK LOCATED ALONG BUILDING FRONTAGE

PODIUM COMMON OPEN SPACE	8,000 SF
INDOOR COMMON OPEN SPACE	3,570 SF
PRIVATE DECKS	4,290 SF
TOTAL OPEN SPACE	15,860 SF

BUILDING B

SITE SUMMARY

GROSS LOT AREA: .247 ACRES, 10,770 S.F.

BUILDING B SHALL BE FULLY SPRINKLED VIA NFPA 13

TOTAL 11 UNITS - 9-1BR AND 2-2BR UNITS ARE ALLOCATED AS A BMR UNITS AND SHALL BE SAME UNIT TYPE AS A TYPICAL 1BR AND 2 BR UNITS PROVIDED IN THE PROJECT

NUMBER OF UNITS		NEWARK PARKING REQ'D	TOTAL REQ'D	OT MIN PARKING REQ'D	OT MAX PARKING ALLOWED	MIN-MAX PARKING REQ'D
1 BEDROOM UNIT:	12 UNITS	1.25 STALLS PER UNIT	15 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	15-24 STALLS
2 BEDROOM UNIT:	12 UNITS	2 STALLS PER UNIT	24 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	15-24 STALLS
3 BEDROOM UNIT:	4 UNITS	2 STALLS PER UNIT	8 STALLS	1.25 STALLS PER UNIT	2 STALLS PER UNIT	5- 8 STALLS
GUEST PARKING		1 PLUS 1 STALL PER 4 UNITS	7 STALLS	NONE REQURIED	1 PLUS 1 STALL PER 4 UNITS	0- 7 STALLS
TOTAL	28 UNITS					35-63 STALLS

PARKING PROVIDED: 13 STALLS - (22 REMAINING STALLS WILL PARK IN BUILIDNG A)
PARKING GARAGE SHALL BE MECHANICALLY VENTILATED

LONG TERM BICYCLE RACK PROVIDED: 28 RACKS (@ 1 RACK PER UNIT)
LOCATED IN BUILDING 'A'

PODIUM COMMON OPEN SPACE	- SF
INDOOR COMMON OPEN SPACE	- SF
PRIVATE DECKS	1,960 SF
TOTAL OPEN SPACE	1,960 SF

DRAWING INDEX

Sheet Number	Sheet Name
PA100	COVER & PROJECT INFORMATION
PA101	SHADE AND SHADOW STUDY
PA110	FLOOR PLAN 1
PA120	FLOOR PLAN 2
PA130	FLOOR PLAN 3
PA140	FLOOR PLAN 4
PA150	FLOOR PLAN 5
PA200	EXTERIOR ELEVATIONS - BUILDING A
PA201	EXTERIOR ELEVATIONS - BUILDING A
PA202	EXTERIOR ELEVATIONS - BUILDING A
PA203	EXTERIOR ELEVATIONS - BUILDING B
PA204	EXTERIOR ELEVATIONS - BUILDING B
PA300	EXTERIOR MATERIALS & IMAGES
C-1	COVER SHEET
C-2	EXISTING CONDITIONS
C-3	DEMOLITION PLAN
C-4	TYPICAL STREET SECTIONS
C-5	PRELIMINARY SITE PLAN
C-6	PRELIMINARY GRADING PLAN
C-7	PRELIMINARY UTILITY PLAN
C-8	PRELIMINARY STORM WATER CONTROL PLAN
C-9	FIRE DEPARTMENT ACCESS PLAN
L1.0	SCHEMATIC LANDSCAPE PLAN



LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

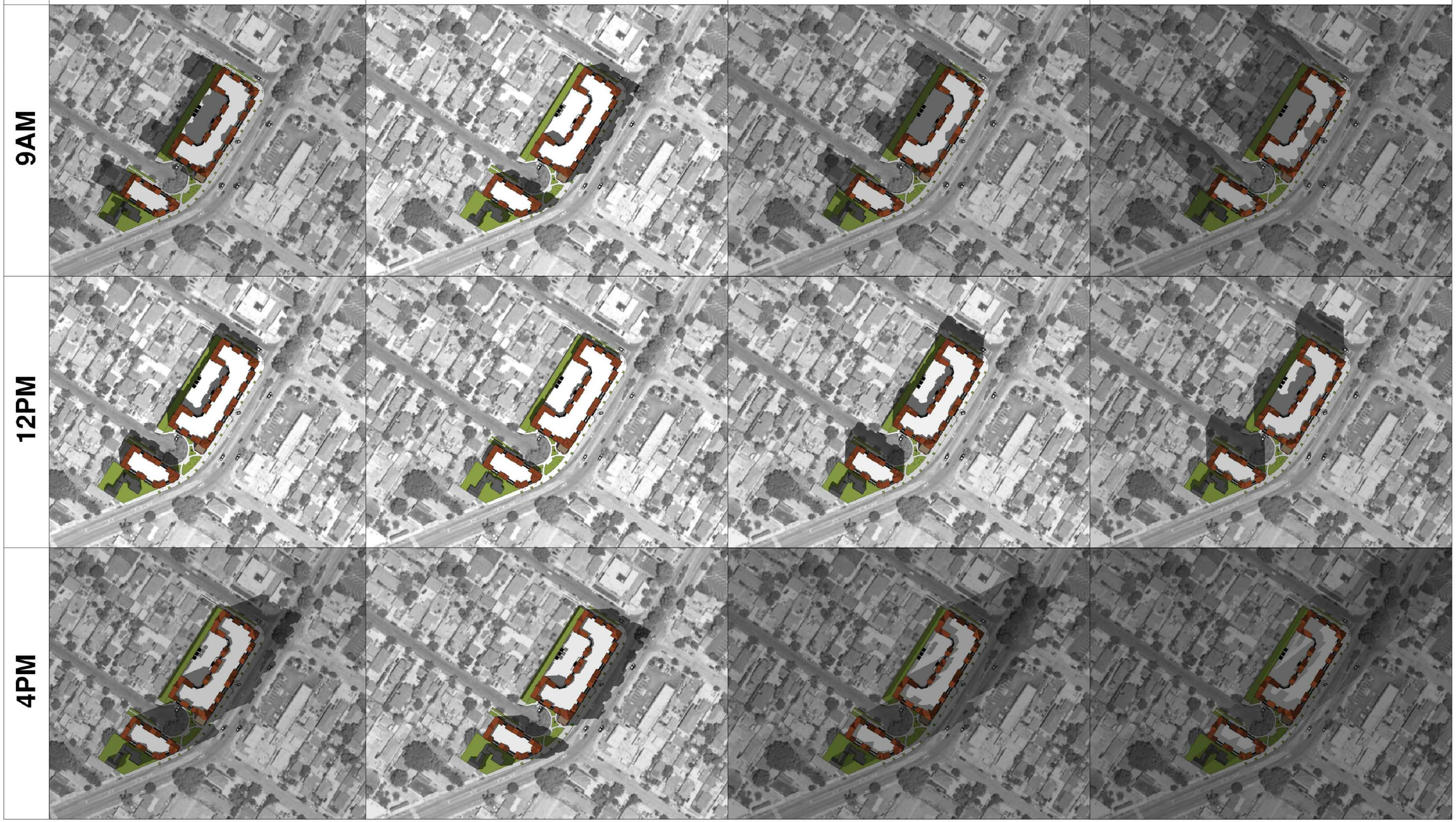
COVER & PROJECT INFORMATION

No. MS-230151.00 2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA100

BSB DESIGN



LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

SHADE AND SHADOW STUDY

No. MS-230151.00 2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

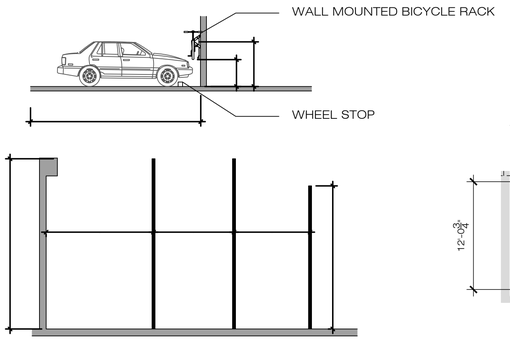
PA101

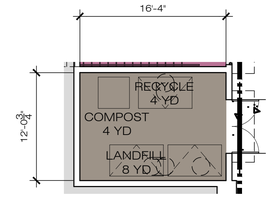
BSB DESIGN

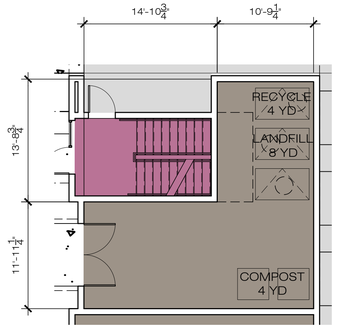
1	FIRE DEPARTMENT ACCESS	7	MECHANICALLY EXHAUSTED PARKING GARAGE
2	ELECTRICAL TRANSFORMER	8	MAILBOX & PARCEL LOCKER CONCIERGE
3	WASTE, RECYCLE & COMPOST BINS IN TRASH ENCLOSURE	9	PLANTER BOX RE: LANDSCAPING
4	EXIT STAIR CASE	10	8 FOOT TALL PRIVACY FENCE
5	ELEVATOR	11	SHORT TERM BIKE RACK (7 TOTAL)
6	STREET PARKING	12	PROPERTY LINE RE: CIVIL

GENERAL NOTES

1. BUILDINGS WILL BE EQUIPPED WITH AN NFPA 13 FIRE SPRINKLER SYSTEM AND FIRE ALARM SYSTEM. THIS IS TO INCLUDE THE TRASH ENCLOSURE. STANDPIPES SHALL BE PROVIDED IN THE STAIRS AND PARKING STRUCTURE.
2. DEFERRED SUBMITTALS SHALL INCLUDE BUT NOT LIMITED TO AUTOMATIC FIRE SPRINKLER SYSTEM, FIRE ALARM SYSTEM, PRIVATE FIRE MAIN SYSTEMS, EMERGENCY RESPONDER RADIO COMMUNICATION SYSTEMS, AND COMMUNITY SAFETY CAMERA SYSTEMS.
3. THE PROPOSED DEVELOPMENT SHOULD COMPLY WITH THE CITY OF NEWARK STREET NUMBERING SYSTEM AND TIE IN WITH THE EXISTING AREA STREET NUMBERING.
ADDITIONALLY, THE PROPOSED BUILDINGS SHOULD DISPLAY THE STREET ADDRESS IN A MANNER CLEARLY VISIBLE FROM THE ADJACENT ROADWAY AND PARKING AREAS IN ORDER TO FACILITATE PUBLIC SAFETY PERSONNEL'S ABILITY TO QUICKLY IDENTIFY ITS LOCATION DURING EMERGENCY RESPONSES.





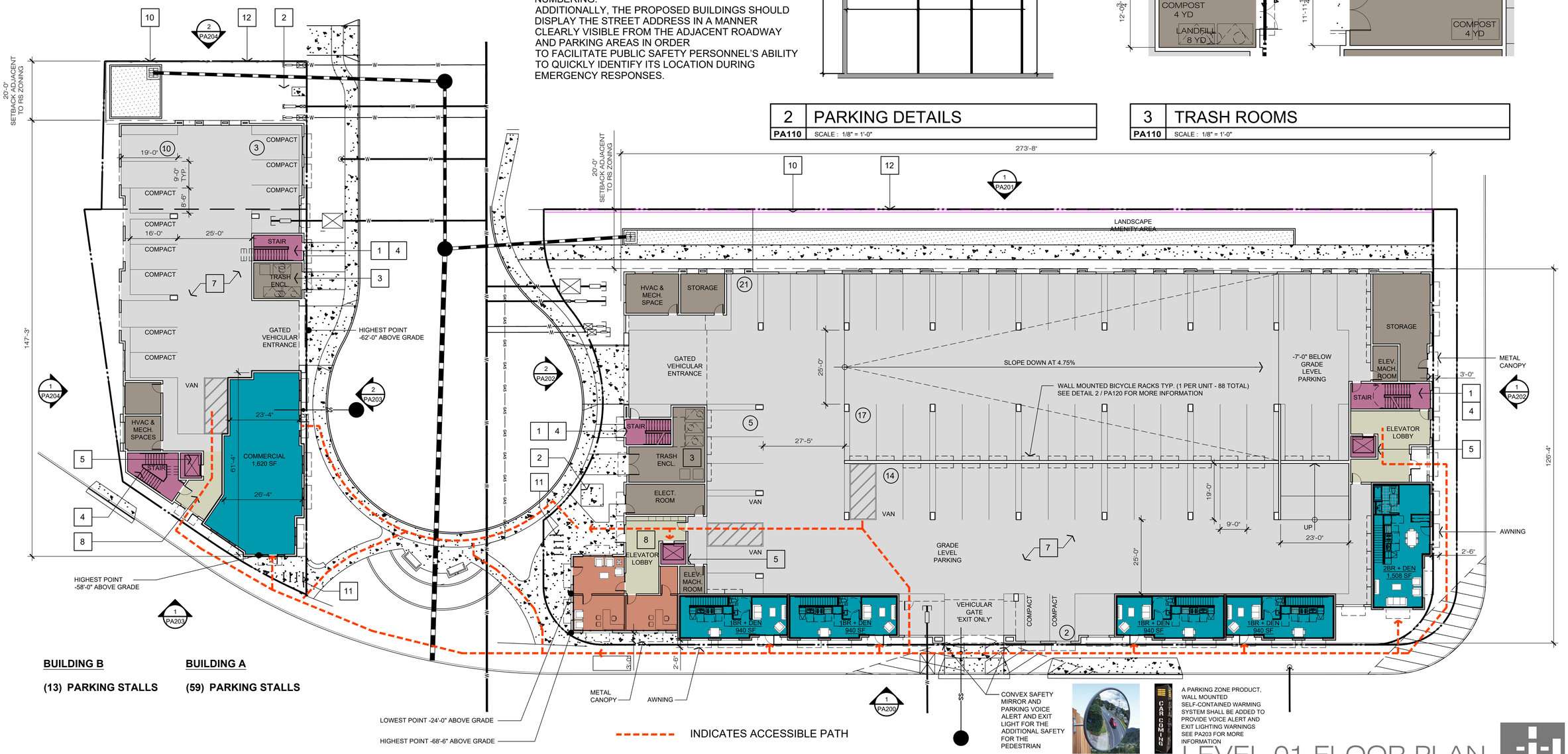


2 PARKING DETAILS

PA110 SCALE : 1/8" = 1'-0"

3 TRASH ROOMS

PA110 SCALE : 1/8" = 1'-0"



BUILDING B — **(13) PARKING STALLS**

BUILDING A — **(59) PARKING STALLS**

INDICATES ACCESSIBLE PATH

CONVEX SAFETY MIRROR AND PARKING VOICE ALERT AND EXIT LIGHT FOR THE ADDITIONAL SAFETY FOR THE PEDESTRIAN

CONVEX SAFETY MIRROR

A PARKING ZONE PRODUCT, WALL MOUNTED SELF-CONTAINED WARMING SYSTEM SHALL BE ADDED TO PROVIDE VOICE ALERT AND EXIT LIGHTING WARNINGS SEE PA203 FOR MORE INFORMATION

LEVEL 01 FLOOR PLAN

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 1/16" = 1'-0"

0 4 8 16 32

N

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00

2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA110

BSB DESIGN

1	FIRE DEPARTMENT ACCESS
2	ELECTRICAL TRANSFORMER
3	TRASH CHUTE
4	EXIT STAIR CASE
5	ELEVATOR
6	STREET PARKING
7	MECHANICALLY EXHAUSTED PARKING GARAGE
8	MAILBOX & PARCEL LOCKER CONCIERGE
9	PLANTER BOX RE: LANDSCAPING
10	8 FOOT TALL PRIVACY FENCE
11	BIKE RACK
12	PROPERTY LINE RE: CIVIL

POLICE NOTE

THE DEVELOPMENT SHALL COMPLY WITH CHAPTER 15.06, SECURITY CODE, OF THE NEWARK MUNICIPAL CODE AND SECTION 510, EMERGENCY RESPONDER RADIO COVERAGE, OF THE CALIFORNIA FIRE CODE

INDIVIDUAL UNIT NUMBERING SHOULD BE IN A SYSTEMATIC METHOD, SPECIFIC TO EACH FLOOR AND EACH UNIT IN A NON REPEATING MANNER (I.E. NO TWO UNITS IN THE DEVELOPMENT WITH THE SAME UNIT NUMBER). MAPS WITH UNIT NUMBERING OF THE ENTIRE DEVELOPMENT SHOULD BE PLACED IN EASY TO FIND LOCATIONS (PREFERABLY AT ENTRANCES TO THE DEVELOPMENT AND THE BUILDINGS) IN ORDER TO AID PUBLIC SAFETY PERSONNEL'S ABILITY TO IDENTIFY SPECIFIC UNITS DURING EMERGENCY RESPONSES.

THE PROPOSED DEVELOPMENT SHOULD COMPLY WITH THE CITY OF NEWARK STREET NUMBERING SYSTEM AND TIE IN WITH THE EXISTING AREA STREET NUMBERING.
ADDITIONALLY, THE PROPOSED BUILDINGS SHOULD DISPLAY THE STREET ADDRESS IN A MANNER CLEARLY VISIBLE FROM THE ADJACENT ROADWAY AND PARKING AREAS IN ORDER TO FACILITATE PUBLIC SAFETY PERSONNEL'S ABILITY TO QUICKLY IDENTIFY ITS LOCATION DURING EMERGENCY RESPONSES.

ADDITIONAL NOTE

FIRE EXTINGUISHERS WILL BE REQUIRED IN COMMON AREAS

MORE THAN ONE KNOX BOX MAY BE REQUIRED.

UNDERGROUND PARKING SHALL BE PROVIDED WITH NATURAL VENTILATION OR MECHANICAL EXHAUST WITH CO DETECTION.

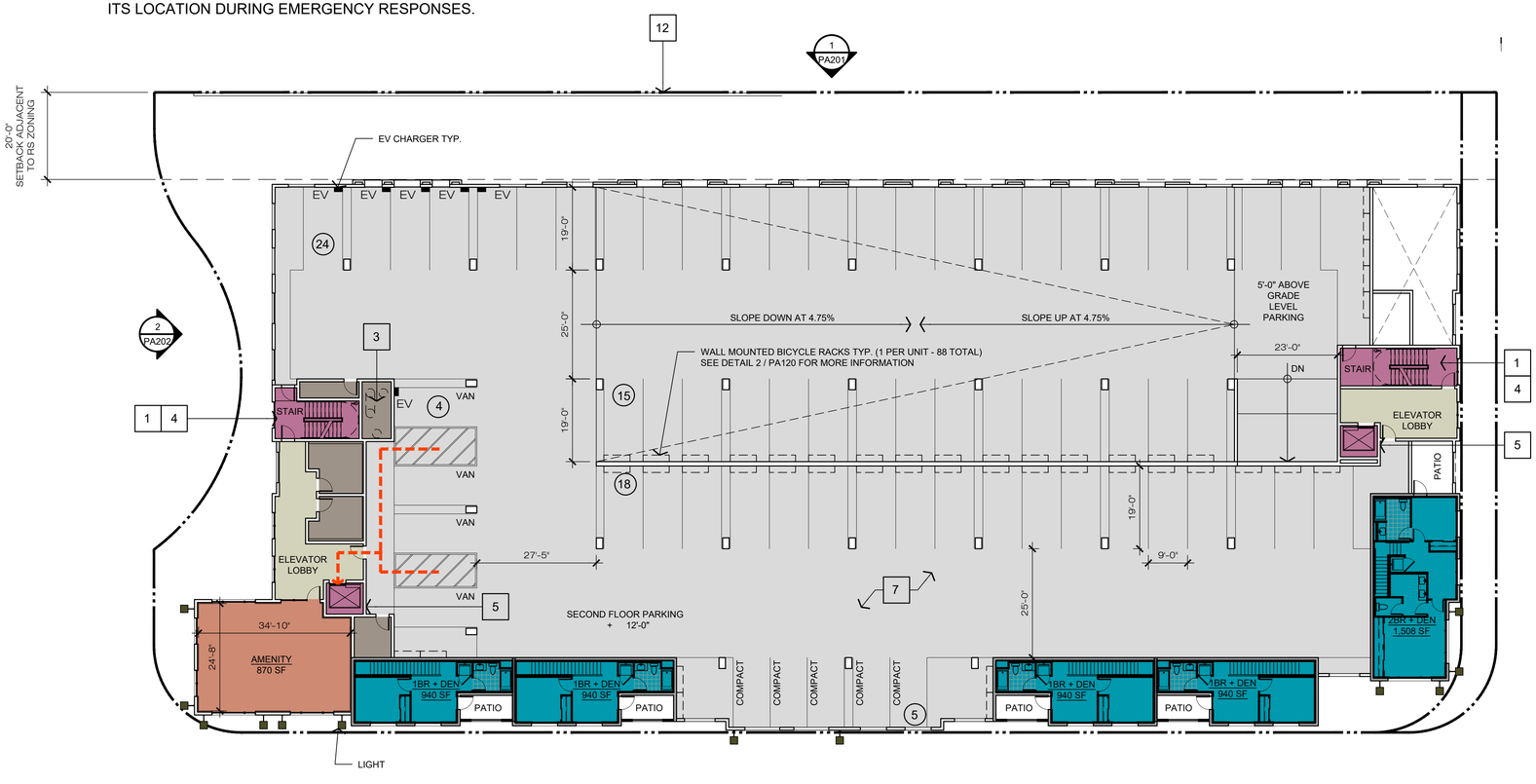
NFPA 13 AUTOMATIC FIRE SPRINKLER AND FIRE ALARM SYSTEMS WILL BE REQUIRED. AUTOMATIC FIRE SPRINKLER PROTECTION SHALL BE PROVIDED FOR THE TRASH ENCLOSURES. STANDPIPES SHALL BE PROVIDED IN THE STAIRS AND PARKING STRUCTURE. PLEASE PROVIDE SUCH NOTE ON PLAN.

AN EMERGENCY RESPONDER RADIO COMMUNICATION SYSTEM (ERRCS) WILL BE REQUIRED FOR EACH BUILDING.



2	Bike Rack
PA120	SCALE : 1/2" = 1'-0"





BUILDING B

(3) 1 BEDROOMS UNITS
(3) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS

BUILDING A

(66) PARKING STALLS

(5) TOWNHOUSE UNITS

INDICATES ACCESSIBLE PATH

LEVEL 02 FLOOR PLAN

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 1/16" = 1'-0"
0 4 8 16 32

N

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

No. MS-230151.00 | 2024 AUGUST 6 | PA120

BSB DESIGN

1 FIRE DEPARTMENT ACCESS

2 ELECTRICAL TRANSFORMER

3 TRASH CHUTE

4 EXIT STAIR CASE

5 ELEVATOR

6 STREET PARKING

7 MECHANICALLY EXHAUSTED PARKING GARAGE

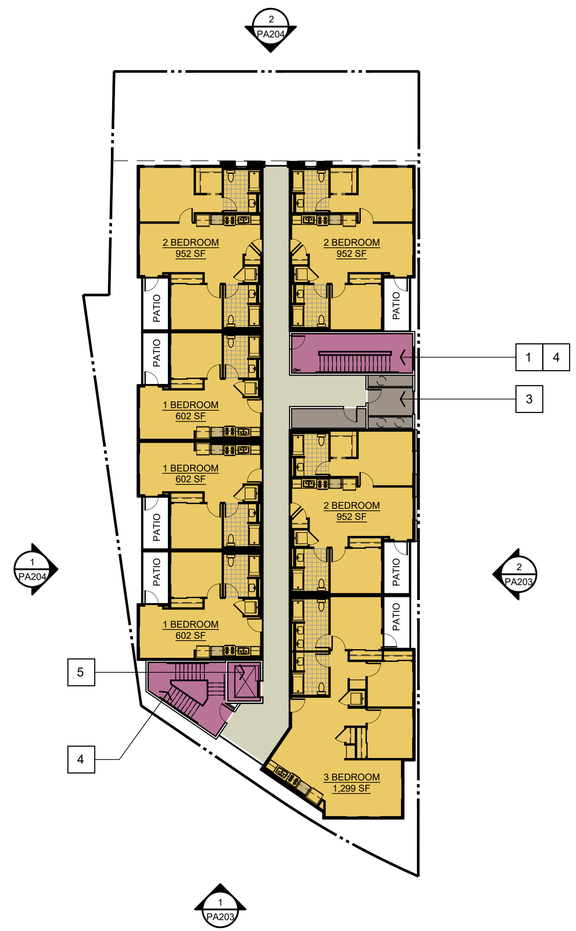
8 MAILBOX & PARCEL LOCKER CONCIERGE

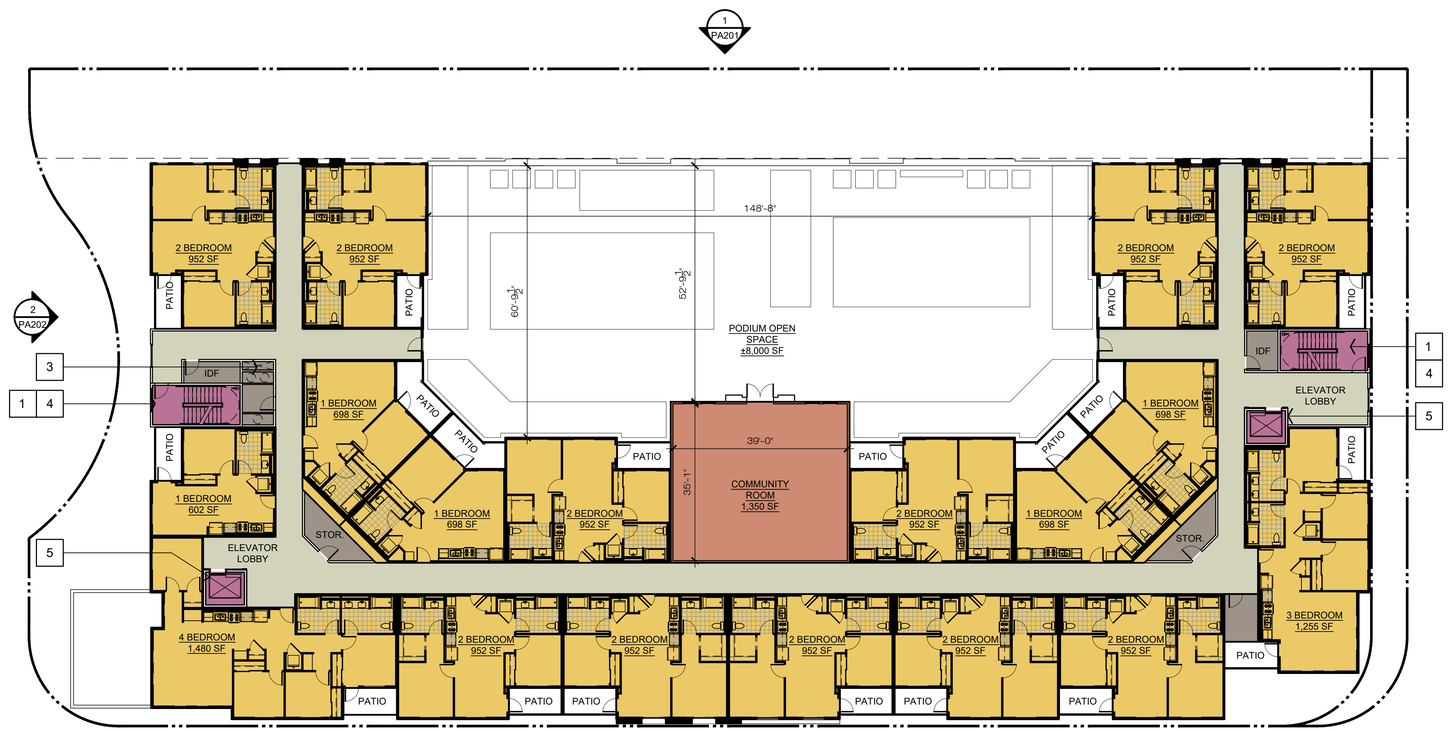
9 PLANTER BOX RE: LANDSCAPING

10 8 FOOT TALL PRIVACY FENCE

11 BIKE RACK

12 PROPERTY LINE RE: CIVIL





BUILDING B

(3) 1 BEDROOMS UNITS
(3) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS

BUILDING A

(5) 1 BEDROOMS UNITS
(11) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS
(1) 4 BEDROOM UNITS

LEVEL 03 FLOOR PLAN

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 1/16" = 1'-0"

0 4 8 16 32

N

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00
2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA130

BSB DESIGN

1 FIRE DEPARTMENT ACCESS

2 ELECTRICAL TRANSFORMER

3 TRASH CHUTE

4 EXIT STAIR CASE

5 ELEVATOR

6 STREET PARKING

7 MECHANICALLY EXHAUSTED PARKING GARAGE

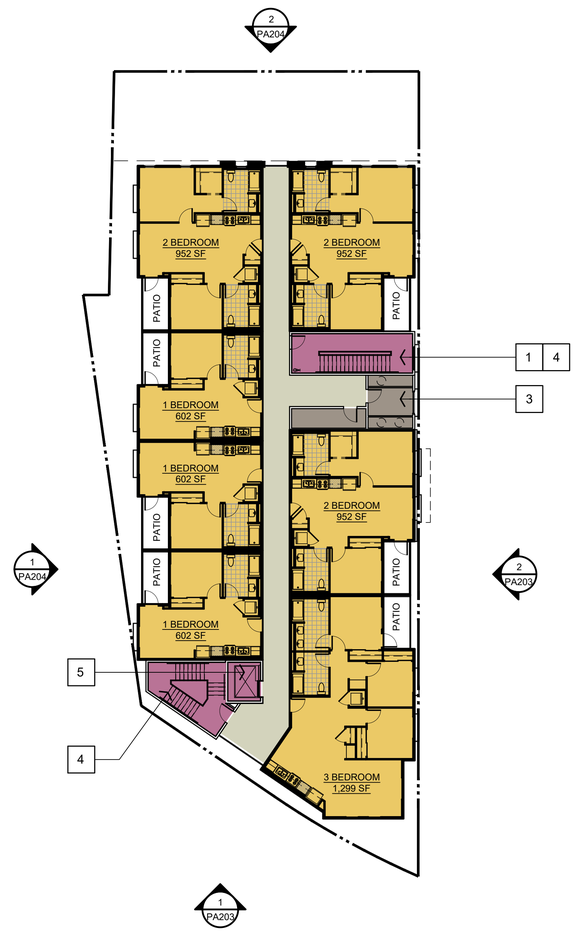
8 MAILBOX & PARCEL LOCKER CONCIERGE

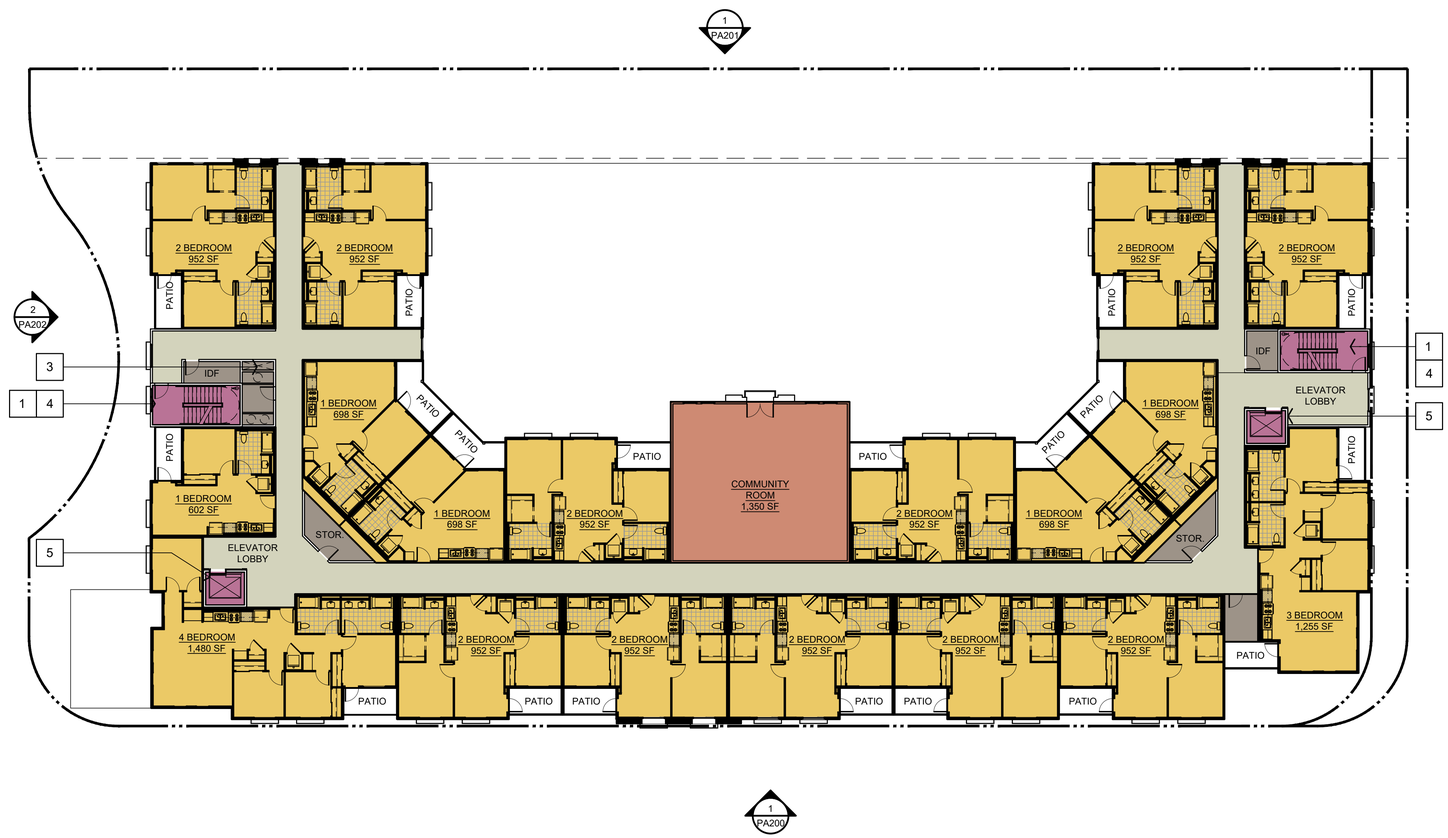
9 PLANTER BOX RE: LANDSCAPING

10 8 FOOT TALL PRIVACY FENCE

11 BIKE RACK

12 PROPERTY LINE RE: CIVIL





BUILDING B

(3) 1 BEDROOMS UNITS
(3) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS

BUILDING A

(5) 1 BEDROOMS UNITS
(11) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS
(1) 4 BEDROOM UNITS

LEVEL 04 FLOOR PLAN

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 1/16" = 1'-0"

0 4 8 16 32

N

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

No. MS-230151.00

2024 AUGUST 6

PA140

BSB DESIGN

1 FIRE DEPARTMENT ACCESS

2 ELECTRICAL TRANSFORMER

3 TRASH CHUTE

4 EXIT STAIR CASE

5 ELEVATOR

6 STREET PARKING

7 MECHANICALLY EXHAUSTED PARKING GARAGE

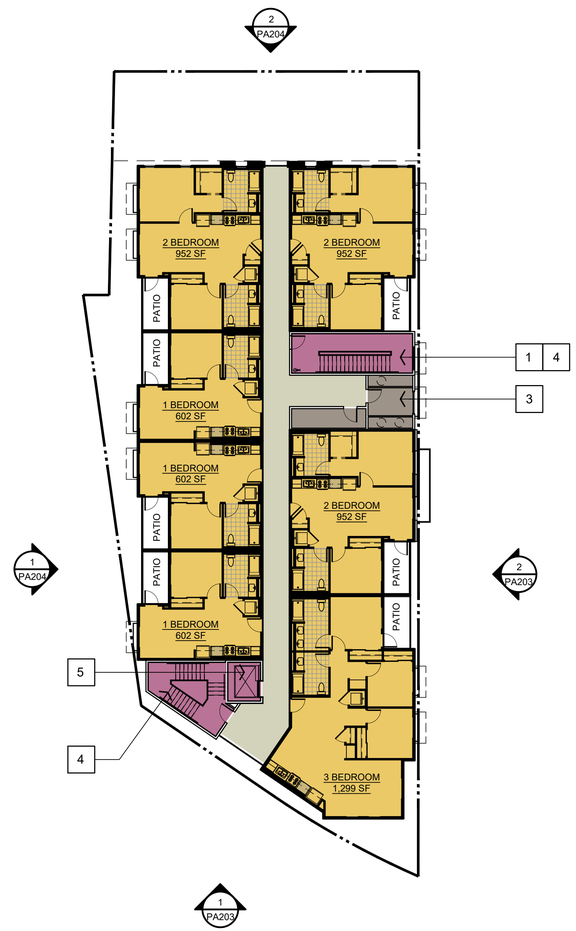
8 MAILBOX & PARCEL LOCKER CONCIERGE

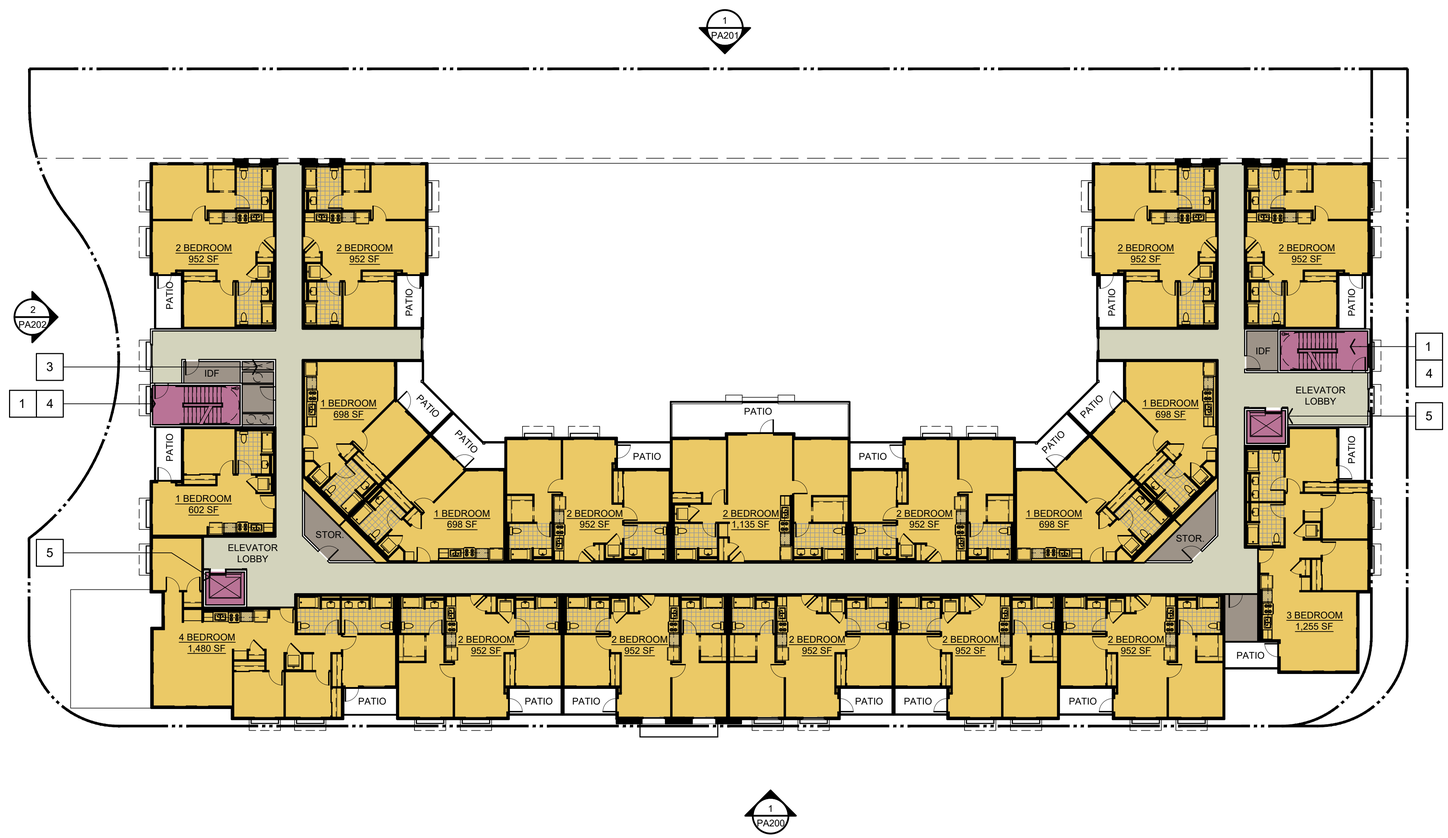
9 PLANTER BOX RE: LANDSCAPING

10 8 FOOT TALL PRIVACY FENCE

11 BIKE RACK

12 PROPERTY LINE RE: CIVIL





BUILDING B

(3) 1 BEDROOMS UNITS
(3) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS

BUILDING A

(5) 1 BEDROOMS UNITS
(12) 2 BEDROOM UNITS
(1) 3 BEDROOM UNITS
(1) 4 BEDROOM UNITS

LEVEL 05 FLOOR PLAN

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 1/16" = 1'-0"

0 4 8 16 32

N

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

No. MS-230151.00

2024 AUGUST 6

PA150

BSB DESIGN



1	BUILDING A - FRONT ELEVATION
PA200	SCALE : 3/32" = 1'-0"



EXTERIOR MATERIAL LEGEND

1. EXTERIOR CEMENT STUCCO - GREY 1
2. EXTERIOR CEMENT STUCCO - BEIGE 1
3. EXTERIOR CEMENT STUCCO - BEIGE 2
4. SPANISH ROOF TILE
5. PAINTED WOOD
6. 3" RECESSED DUAL GRAZED VINYL WINDOW
7. STOREFRONT WINDOW / DOOR
8. FABRIC AWNING
9. SCREED LINE
10. METAL CANOPY
11. PAINTED METAL RAILING / GUARDRAIL
12. PAINTED WOOD RAFTER / TRELLIS
13. PROJECTING PAINTED FOAM TRIM / BELLY BAND
14. METAL GRILL OPENING AND GARAGE DOOR
15. DECORATIVE TERRA COTTA TILES
16. PAINTED FOAM SHUTTER
17. TINTED GLAZING AT GROUND LEVEL
18. MOVABLE PLANTER POT

EXTERIOR ELEVATIONS - BUILDING A

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 3/32" = 1'-0"

0 5 10 20 30

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00
2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA200

BSB DESIGN



1	BUILDING A - REAR ELEVATION
PA201	SCALE : 3/32" = 1'-0"



EXTERIOR MATERIAL LEGEND

1. EXTERIOR CEMENT STUCCO - GREY 1
2. EXTERIOR CEMENT STUCCO - BEIGE 1
3. EXTERIOR CEMENT STUCCO - BEIGE 2
4. SPANISH ROOF TILE
5. PAINTED WOOD
6. 3" RECESSED DUAL GRAZED VINYL WINDOW
7. STOREFRONT WINDOW / DOOR
8. FABRIC AWNING
9. SCREED LINE
10. METAL CANOPY
11. PAINTED METAL RAILING / GUARDRAIL
12. PAINTED WOOD RAFTER / TRELLIS
13. PROJECTING PAINTED FOAM TRIM / BELLY BAND
14. METAL GRILL OPENING AND GARAGE DOOR
15. DECORATIVE TERRA COTTA TILES
16. PAINTED FOAM SHUTTER
17. TINTED GLAZING AT GROUND LEVEL
18. MOVABLE PLANTER POT

EXTERIOR ELEVATIONS - BUILDING A

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 3/32" = 1'-0"

0 5 10 20 30

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

No. MS-230151.00

2024 AUGUST 6

PA201

BSB DESIGN



1	BUILDING A - SIDE ELEVATION 1
PA202	SCALE : 3/32" = 1'-0"



2	BUILDING A - SIDE ELEVATION 2
PA202	SCALE : 3/32" = 1'-0"



EXTERIOR MATERIAL LEGEND

1	EXTERIOR CEMENT STUCCO - GREY 1	11	PAINTED METAL RAILING / GUARDRAIL
2	EXTERIOR CEMENT STUCCO - BEIGE 1	12	PAINTED WOOD RAFTER / TRELLIS
3	EXTERIOR CEMENT STUCCO - BEIGE 2	13	PROJECTING PAINTED FOAM TRIM / BELLY BAND
4	SPANISH ROOF TILE	14	METAL GRILL OPENING AND GARAGE DOOR
5	PAINTED WOOD	15	DECORATIVE TERRA COTTA TILES
6	3" RECESSED DUAL GRAZED VINYL WINDOW	16	PAINTED FOAM SHUTTER
7	STOREFRONT WINDOW / DOOR	17	TINTED GLAZING AT GROUND LEVEL
8	FABRIC AWNING	18	MOVABLE PLANTER POT
9	SCREED LINE		
10	METAL CANOPY		

EXTERIOR ELEVATIONS - BUILDING A

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 3/32" = 1'-0"
0 5 10 20 30

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00 2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA202

BSB DESIGN



1	BUILDING B - FRONT ELEVATION
PA202	SCALE : 3/32" = 1'-0"



2	BUILDING B - SIDE ELEVATION 1
PA202	SCALE : 3/32" = 1'-0"





14 CONVEX SAFETY MIRROR

Wall Mount • 40'' X 10'' • 2-sided

P/N: CC4008V-KIT-MO



*Pre-Wired Inside Sign

15 A PARKING ZONE PRODUCT, WALL MOUNTED SELF-CONTAINED WARMING SYSTEM

- SELF-CONTAINED WARNING SYSTEM
- WALL MOUNTED
- STANDARD SIGN MEASURES 48'' X 10'' X 8''
- MADE FROM 14AWG STEEL
- HAMMERED COPPER POWDER COATING FINISH
- NEEDS 120VAC 1A OR 12VDC 5A POWER
- VOICE TIMER OPTION AVAILABLE

. LEGEND

1 EXTERIOR CEMENT STUCCO - GREY 1
2 EXTERIOR CEMENT STUCCO - BEIGE 1
3 EXTERIOR CEMENT STUCCO - BEIGE 2
4 SPANISH ROOF TILE
5 PAINTED WOOD
6 3" RECESSED DUAL GRAZED VINYL WINDOW
7 STOREFRONT WINDOW / DOOR
8 FABRIC AWNING
9 SCREED LINE
10 METAL CANOPY
11 PAINTED METAL RAILING / GUARDRAIL
12 PAINTED WOOD RAFTER / TRELLIS
13 PROJECTING PAINTED FOAM TRIM / BELLY BAND
14 METAL GRILL OPENING AND GARAGE DOOR
15 DECORATIVE TERRA COTTA TILES
16 PAINTED FOAM SHUTTER
17 TINTED GLAZING AT GROUND LEVEL
18 MOVABLE PLANTER POT

EXTERIOR ELEVATIONS - BUILDING B

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 3/32" = 1'-0"
0 5 10 20 30

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00
2024 AUGUST 6
PA203

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

BSB DESIGN



1	BUILDING B - SIDE ELEVATION 2
PA202	SCALE : 3/32" = 1'-0"



2	BUILDING B - REAR ELEVATION 1
PA202	SCALE : 3/32" = 1'-0"



EXTERIOR MATERIAL LEGEND

1	EXTERIOR CEMENT STUCCO - GREY 1	11	PAINTED METAL RAILING / GUARDRAIL
2	EXTERIOR CEMENT STUCCO - BEIGE 1	12	PAINTED WOOD RAFTER / TRELLIS
3	EXTERIOR CEMENT STUCCO - BEIGE 2	13	PROJECTING PAINTED FOAM TRIM / BELLY BAND
4	SPANISH ROOF TILE	14	METAL GRILL OPENING AND GARAGE DOOR
5	PAINTED WOOD	15	DECORATIVE TERRA COTTA TILES
6	3" RECESSED DUAL GRAZED VINYL WINDOW	16	PAINTED FOAM SHUTTER
7	STOREFRONT WINDOW / DOOR	17	TINTED GLAZING AT GROUND LEVEL
8	FABRIC AWNING	18	MOVABLE PLANTER POT
9	SCREED LINE		
10	METAL CANOPY		

EXTERIOR ELEVATIONS - BUILDING B

LEPAKSHI HOMES

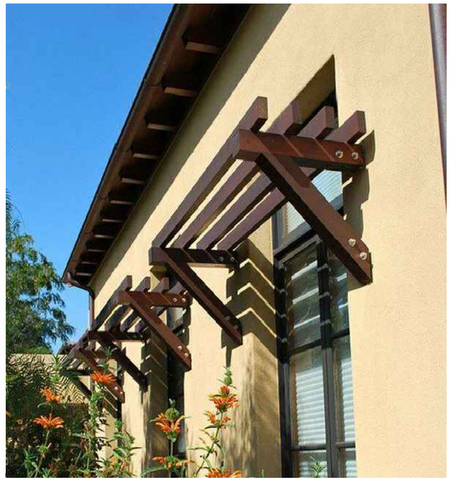
6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

scale: 3/32" = 1'-0"
0 5 10 20 30

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

No. MS-230151.00
2024 AUGUST 6
BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425
PA204
BSB DESIGN





SUN SHADES



METAL CANOPY



METAL GRILLE



STOREFRONT



CLOCK



PERGOLA



COLOR PALETTE



WINDOW DETAIL



ENTRY



SIGN & BRACKET



SPANISH TILE



BALCONY

LEPAKSHI HOMES

6781 THORNTON AVE. NEWARK, CALIFORNIA 94560

APPLICANT:
LEPAKSHI HOMES
1481 PERALTA BLVD. FERMONT, CA 94536 t. 408.420.2268

EXTERIOR MATERIALS & IMAGES

No. MS-230151.00 2024 AUGUST 6

BSB DESIGN
970 West 190th Street Suite 250
Torrance, CA 90502
t. 310. 217. 8885 f. 310. 217. 0425

PA300

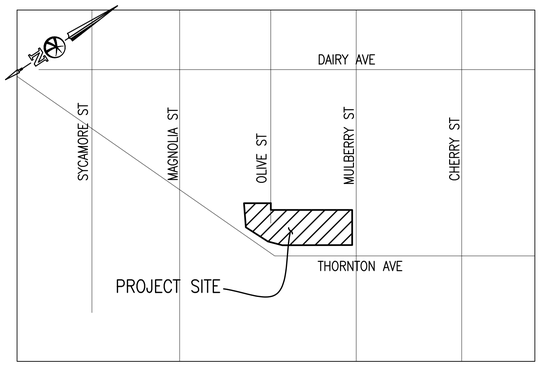
BSB DESIGN

VESTING TENTATIVE MAP
TRACT 8632
COVER SHEET

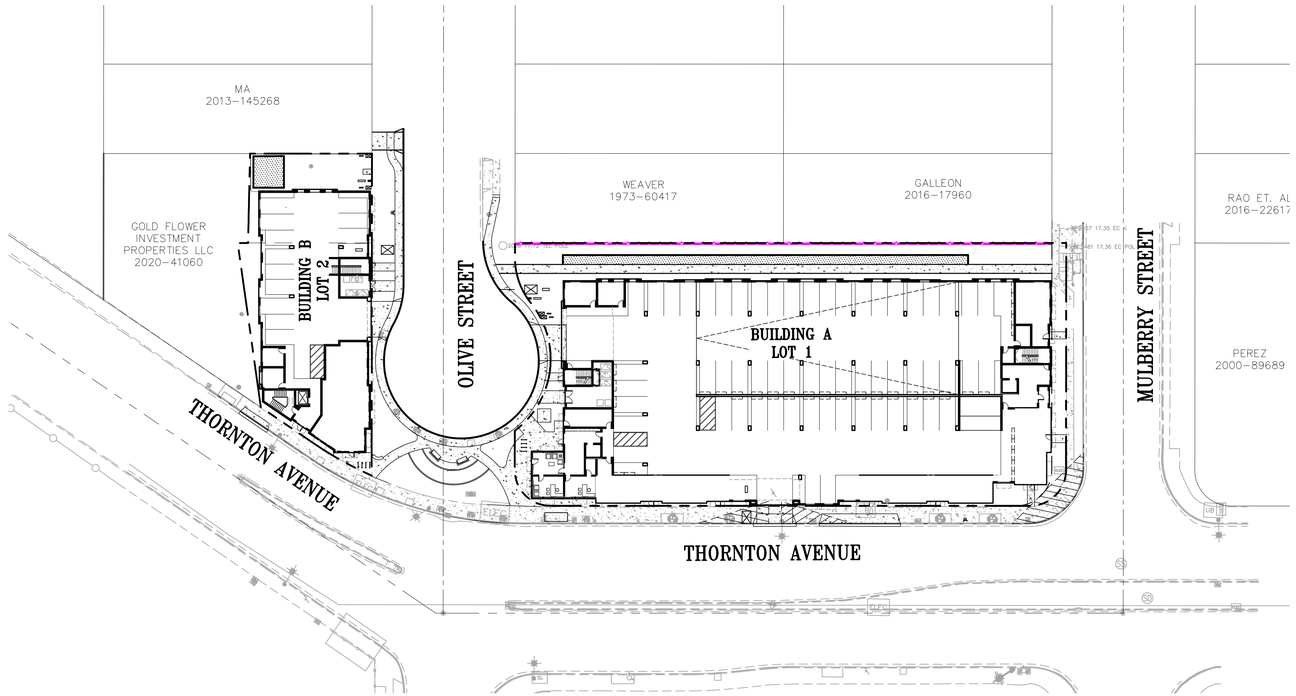
6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 **SCALE: 1"=40'**



VICINITY MAP
NOT TO SCALE



40 20 0 40 80 120
SCALE IN FEET
GRAPHIC SCALE: 1"=40'

GENERAL NOTES

OWNER:	LEPAKSHI HOMES
DEVELOPER:	LEPAKSHI HOMES 14811 PERALTA BLVD. FREMONT, CA 94536 (408)420-2268
ENGINEER:	BELLECCI & ASSOCIATES, INC. 2290 DIAMOND BLVD #100 CONCORD, CA 94520 (925)-685-4569
A.P.N.:	092-0031-016-02 092-0030-018-04 092-0030-017-02, 092-0030-016-02, 092-0030-015-02 92-31-15 92-30-14-3
SITE AREA:	1.2± ACRES
EXISTING ZONING:	CMU
PROPOSED ZONING:	CMU
EXISTING USE:	RESIDENTIAL
PROPOSED USE:	PLANNED UNIT DEVELOPMENT (BUILDING A = 60 TOTAL UNITS) (BUILDING B = 28 TOTAL UNITS)
GENERAL PLAN DESIGNATION:	LOW DENSITY RESIDENTIAL
LOT SIZES:	LOT 1 = 43,969± SF LOT 2 = 10,989± SF TOTAL = 54,958± SF
UTILITIES:	
WATER:	
PUBLIC STREETS	ALAMEDA COUNTY WATER DISTRICT
PRIVATE STREETS	ALAMEDA COUNTY WATER DISTRICT
SANITARY SEWER:	
PUBLIC STREETS	UNION SANITARY DISTRICT
PRIVATE STREETS	HOME OWNERS ASSOCIATION
STORM DRAIN:	
PUBLIC STREETS	CITY OF NEWARK
PRIVATE STREETS	HOME OWNERS ASSOCIATION
GAS/ELECTRIC:	PACIFIC GAS & ELECTRIC
TELEPHONE:	AT&T
CABLE TV:	COMCAST
TOPOGRAPHY:	AERIAL BASED TOPOGRAPHIC MAP SHOWN AS BACKGROUND TO THIS SURVEY PROVIDED BY 360 AERIAL SURVEYS, DATED: NOVEMBER 29, 2019
FLOOD ZONE:	THIS PROPERTY IS LOCATED IN ZONE X (UNSHADED) AS SHOWN IN FLOOD INSURANCE RATE COMMUNITY PANEL NO. 06001C0441G DATED AUGUST 3, 2009.

NOTES:

THE OWNER RESERVES THE RIGHT TO FILE MULTIPLE FINAL MAPS ON THE LANDS SHOWN ON THIS MAP

BASIS OF BEARINGS

THE BEARING N32°59'59"E TAKEN BETWEEN TWO FOUND MONUMENTS ALONG THORNTON AVENUE, AS SHOWN ON THAT CERTAIN RECORD OF SURVEY MAP, RECORDED IN BOOK 43 OF RECORDS OF SURVEY, PAGE 39 OF ALAMEDA COUNTY RECORDS.

SHEET INDEX

C1. COVER SHEET
C2. EXISTING CONDITIONS
C3. DEMOLITION PLAN
C4. TYPICAL STREET SECTIONS
C5. PRELIMINARY SITE PLAN
C6. PRELIMINARY GRADING PLAN
C7. PRELIMINARY UTILITY PLAN
C8. PRELIMINARY STORM WATER CONTROL PLAN
C9. FIRE DEPARTMENT ACCESS PLAN

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

SHEET C1 OF 9
JOB NO. 21020

NOTES:

TREES DIAMETERS IN INCHES IDENTIFIED IN THIS SURVEY ARE GREATER THAN 6" DIAMETER AS MEASURED AT 48" ABOVE NATURAL GRADE.

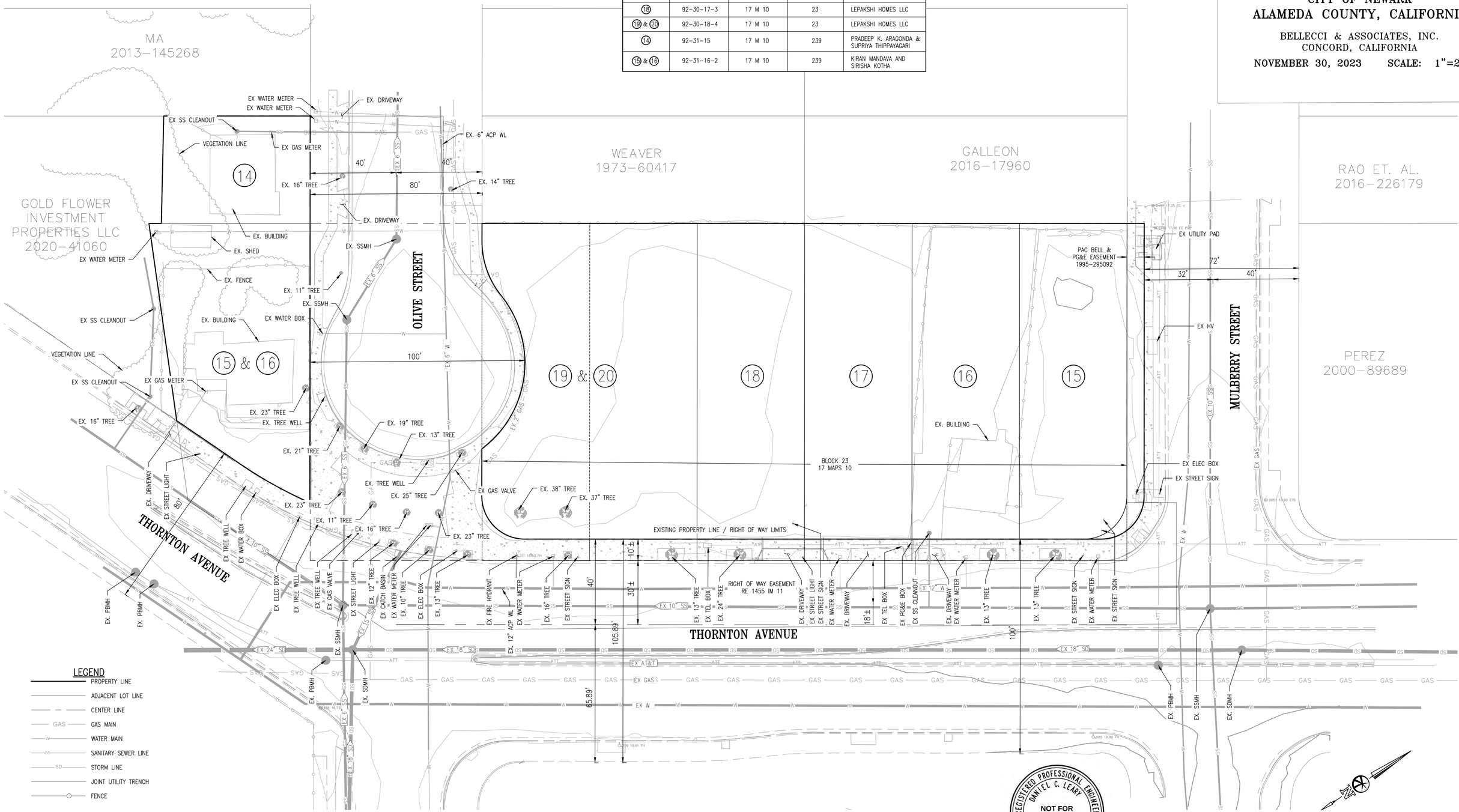
LOT NUMBER	APN:	RECORDIND MAP	BLOCK NUMBER	PROPERTY OWNER
⑮	92-30-14-3	17 M 10	23	KISHORE POLAKALA
⑯	092-0030-015-02	17 M 10	23	BRITTANY VU
⑰	092-0030-016-02	17 M 10	23	LEPAKSHI HOMES LLC
⑱	92-30-17-3	17 M 10	23	LEPAKSHI HOMES LLC
⑲ & ⑳	92-30-18-4	17 M 10	23	LEPAKSHI HOMES LLC
⑭	92-31-15	17 M 10	239	PRADEEP K. ARAGONDA & SUPRIYA THIPPAYAGARI
⑮ & ⑯	92-31-16-2	17 M 10	239	KIRAN MANDAVA AND SIRISHA KOTHA

VESTING TENTATIVE MAP
TRACT 8632
EXISTING CONDITIONS

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'



REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

SHEET C2 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
DEMOLITION PLAN

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'

LEGEND

- PROJECT BOUNDARY PROPERTY LINE
- (#) NOTE — CONSTRUCTION NOTES
- REMOVE ASPHALT AND BASEROCK
- REMOVE EX BUILDING, UTILITY, FOUNDATION AND BASEROCK
- REMOVE CONCRETE PAVEMENT AND BASEROCK (CURB, GUTTER, WALKWAYS, FOUNDATION, ETC)

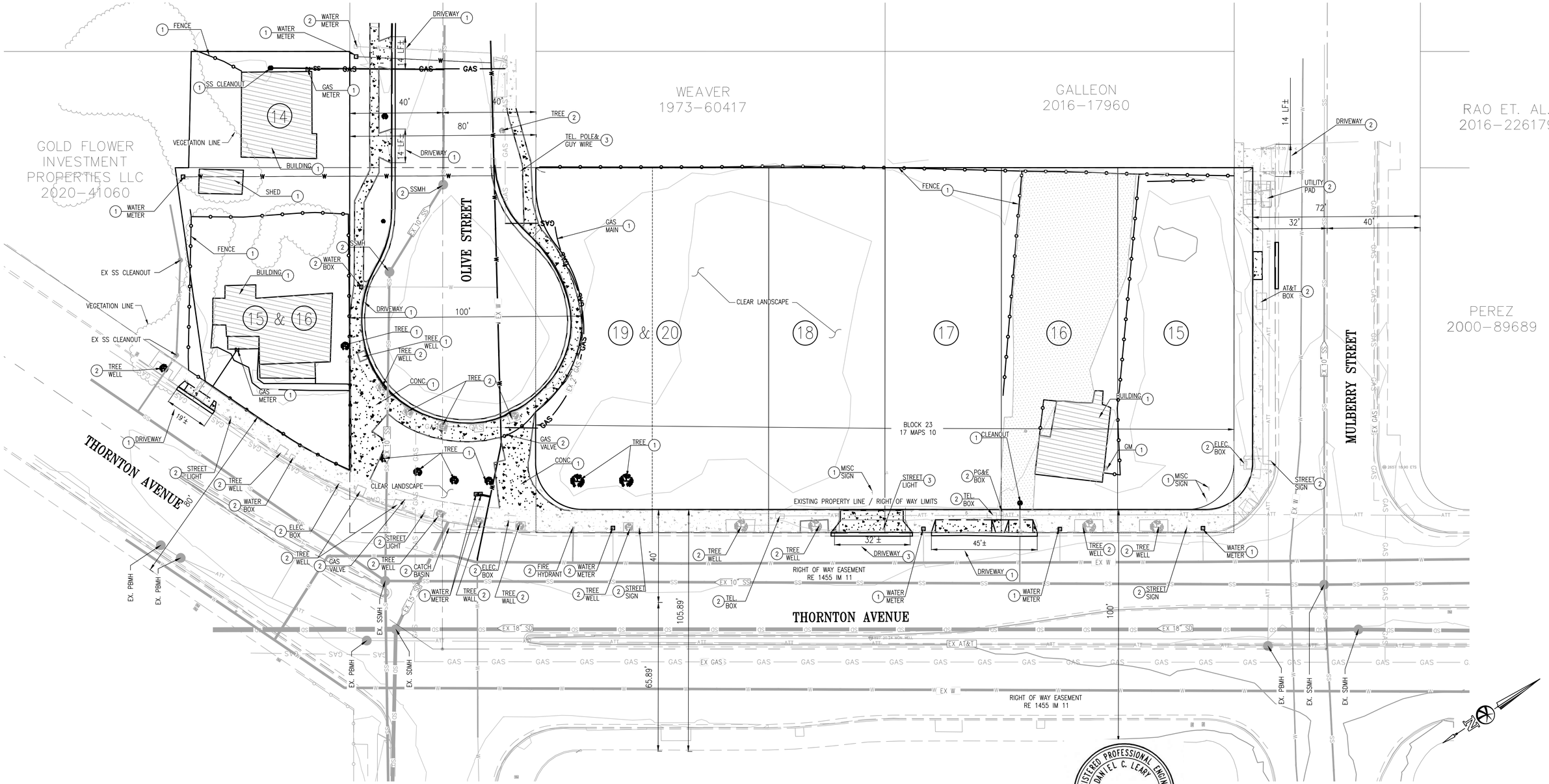
NOTE

1. EXISTING UTILITIES SHOWN FOR REFERENCE ONLY. CONTRACTOR TO VERIFY LOCATION, SIZE AND DEPTH OF EX. UTILITIES PRIOR TO CONSTRUCTION. CONTRACTOR TO PROVIDE DESIGN ENGINEER EXISTING UTILITY DEPTHS AFTER POTHOLING. CONTRACTOR TO PROVIDE DESIGN ENGINEER 5 WORKING DAYS TIME TO MAKE ANY REVISIONS TO THE PLANS BEFORE THE START OF CONSTRUCTION.
2. UNKNOWN UNDERGROUND UTILITIES MAY BE PRESENT WITH IN THE PROJECT. CONTRACTOR TO VERIFY TYPE, SIZE, LOCATION AND DEPTH PRIOR TO CONSTRUCTION AND COORDINATE WITH THE DESIGN ENGINEER. CONTRACTOR TO PROVIDE DESIGN ENGINEER 5 WORKING DAYS TIME TO MAKE ANY REVISIONS TO THE PLANS.
3. OWNER TO COORDINATE WITH THE ADJOINING PROPERTY OWNER REGARDING TEMPORARY RIGHTS OF ACCESS, FENCE REPLACEMENT AND TREE REMOVAL ALONG THE PROPERTY BOUNDARY.
4. ANY EXISTING SEWER LATERALS FOUND WITHIN THE PROPERTY SHALL BE REMOVED OR ABANDONED PER CITY STANDARDS AND SPECIFICATION.
5. EXISTING WATER METER AND RELATED APPURTENANCES WITHIN THE PROPERTY SHALL BE REMOVED. CONTRACTOR TO CUT OFF PIPE, REMOVE LATERAL +/-2' BELOW TO AVOID FUTURE CONFLICTS WITH ABANDONED LATERAL OR AS DIRECTED BY THE CITY INSPECTOR. SEE UTILITY PLAN FOR UTILITY LATERALS TO BE ABANDONED.
6. ANY EXISTING GAS LATERALS FOUND WITHIN THE PROPERTY SHALL BE REMOVED OR ABANDONED PER CITY STANDARDS AND SPECIFICATION. SEE UTILITY PLAN FOR UTILITY LATERALS TO BE ABANDONED.

LOT NUMBER	APN:	RECORDIND MAP	BLOCK NUMBER	PROPERTY OWNER
(15)	92-30-14-3	17 M 10	23	KISHORE POLAKALA
(16)	092-0030-015-02	17 M 10	23	BRITTANY VU
(17)	092-0030-016-02	17 M 10	23	LEPAKSHI HOMES LLC
(18)	92-30-17-3	17 M 10	23	LEPAKSHI HOMES LLC
(19) & (20)	92-30-18-4	17 M 10	23	LEPAKSHI HOMES LLC
(14)	92-31-15	17 M 10	239	PRADEEP K. ARAGONDA & SUPRIYA THIPPAYAGARI
(15) & (16)	92-31-16-2	17 M 10	239	KIRAN MANDAVA AND SIRISHA KOTHA

CONSTRUCTION NOTES

1. TO BE DEMOLISHED AND REMOVED
2. TO REMAIN AND PROTECTED IN PLACE
3. SALVAGE AND RELOCATE, SEE PLAN AND PROFILE SHEET FOR NEW LOCATION



REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

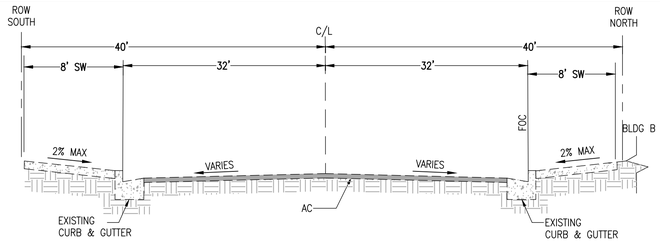
SHEET C3 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
TYPICAL STREET CROSS SECTIONS

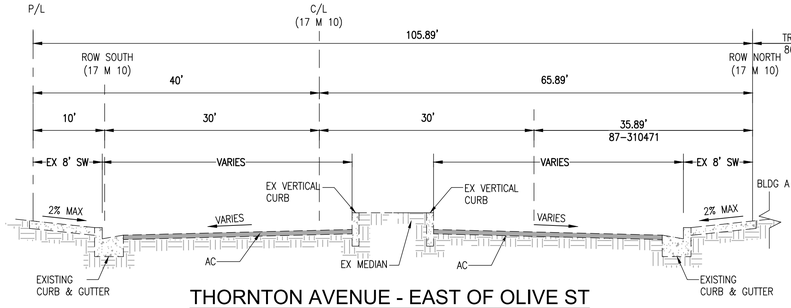
6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

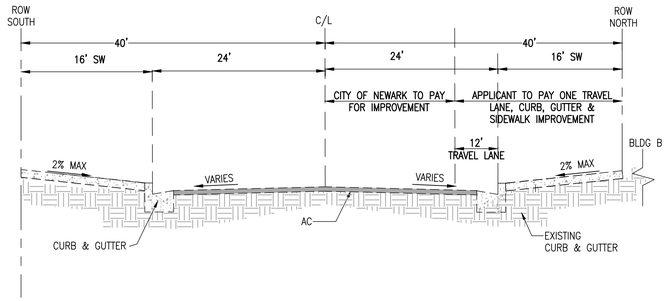
NOVEMBER 30, 2023 SCALE: 1"=20'



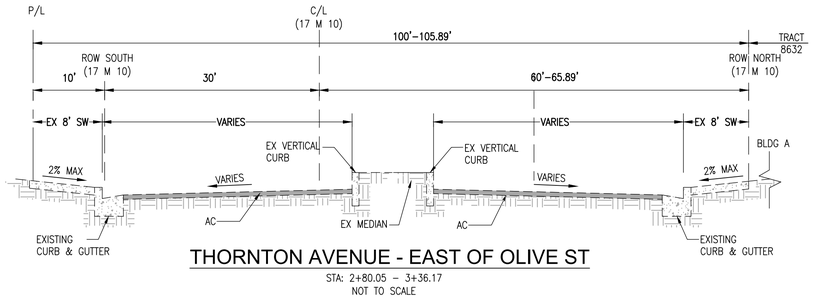
EXISTING THORNTON AVENUE - WEST OF OLIVE ST
NOT TO SCALE



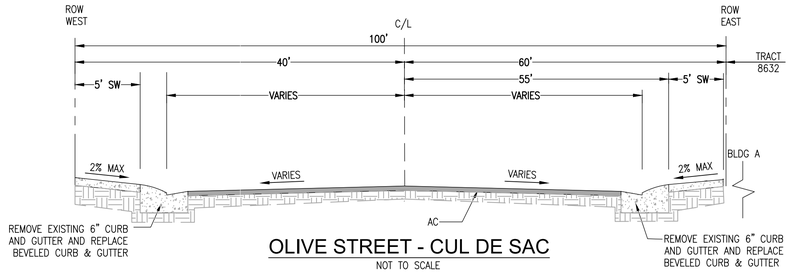
THORNTON AVENUE - EAST OF OLIVE ST
STA: 2+00.13 – 2+80.05
NOT TO SCALE



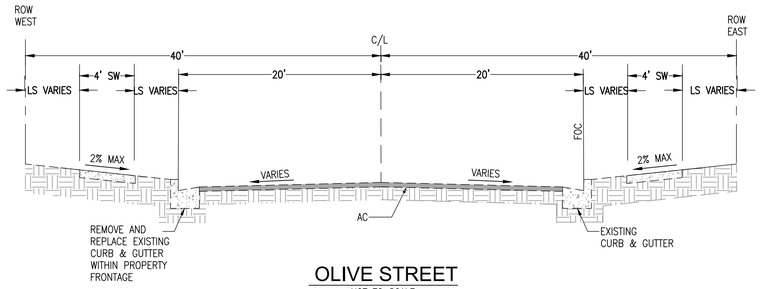
FUTURE THORNTON AVENUE - WEST OF OLIVE ST
PER OLD TOWN SPECIFIC PLAN
NOT TO SCALE



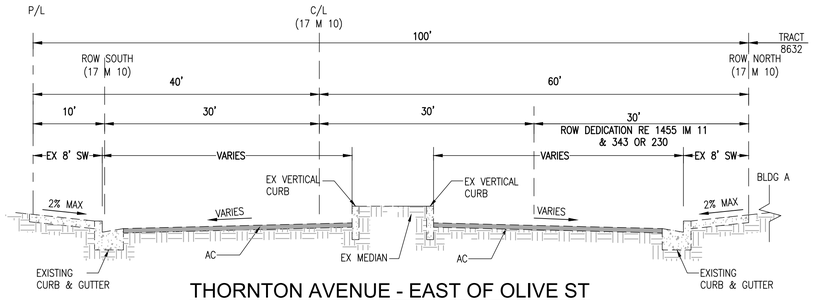
THORNTON AVENUE - EAST OF OLIVE ST
STA: 2+80.05 – 3+36.17
NOT TO SCALE



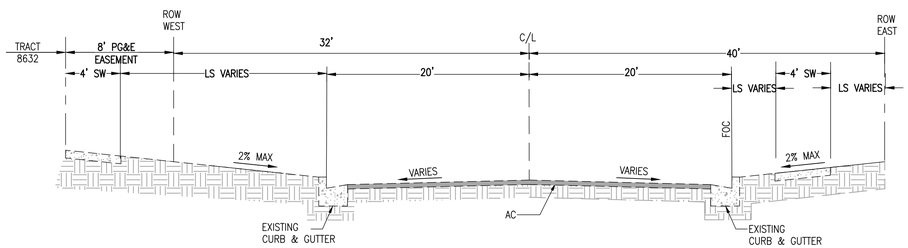
OLIVE STREET - CUL DE SAC
NOT TO SCALE



OLIVE STREET
NOT TO SCALE



THORNTON AVENUE - EAST OF OLIVE ST
STA: 3+36.17 – 4+60.00
NOT TO SCALE



MULBERRY STREET
NOT TO SCALE

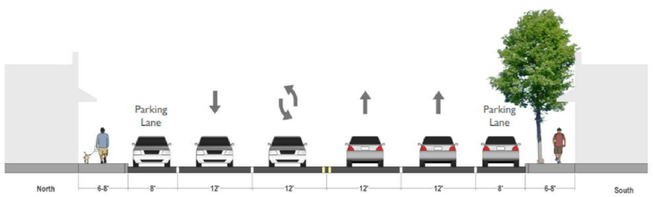


FIGURE 3-4: Existing Thornton Avenue Condition

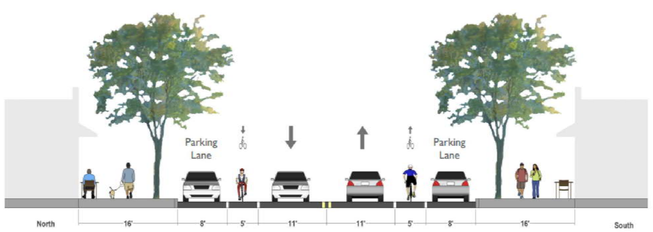


FIGURE 3-5: Potential Thornton Avenue Condition

THORNTON AVENUE SECTION FROM OLD TOWN SPECIFIC PLAN
NOT TO SCALE

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

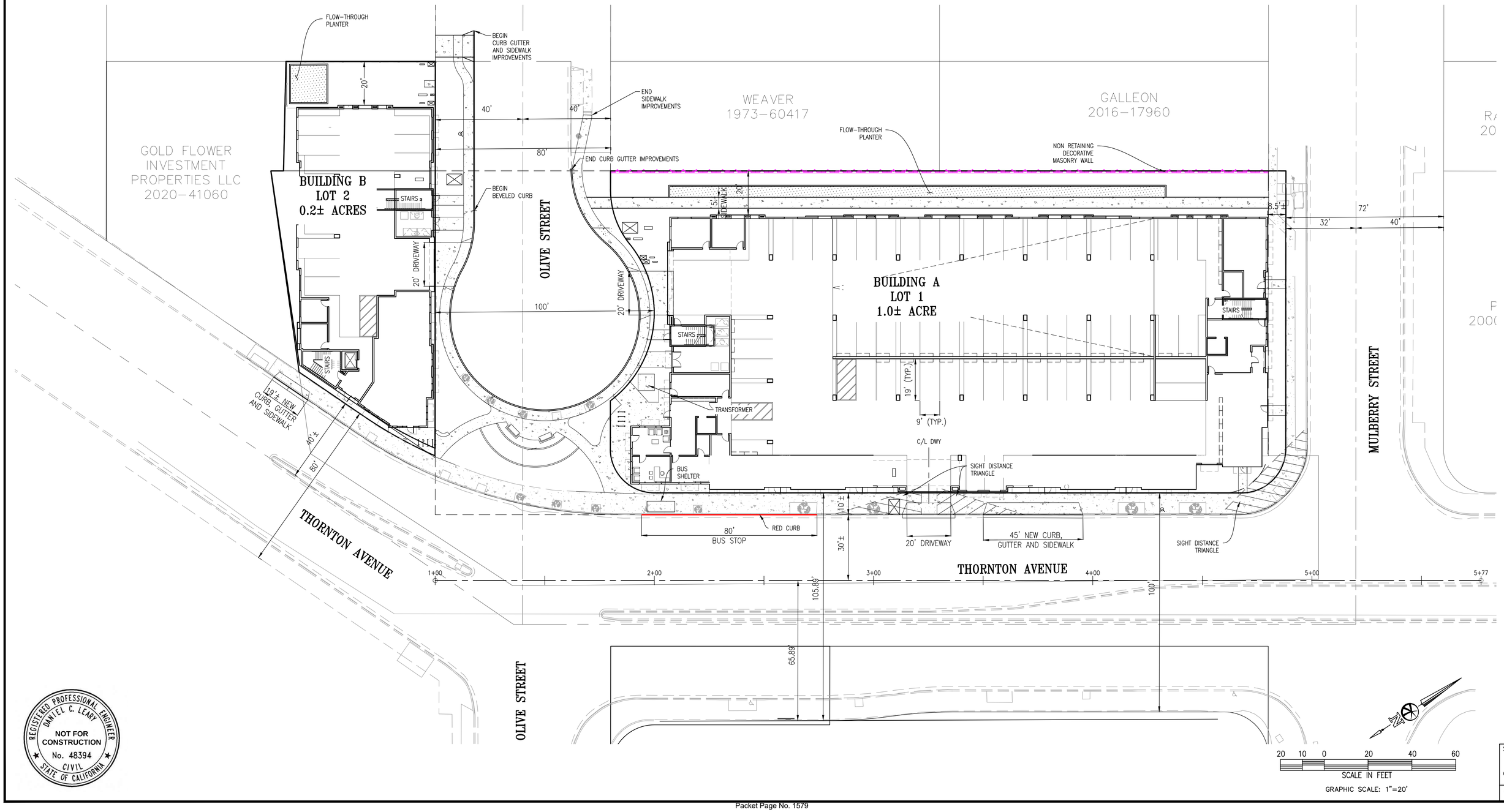
SHEET C4 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
PRELIMINARY SITE PLAN

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'



REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

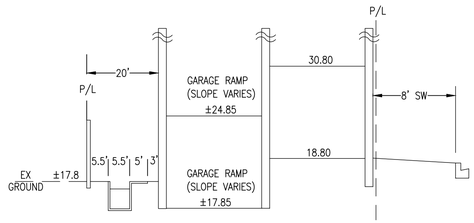
SHEET C5 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
PRELIMINARY GRADING PLAN

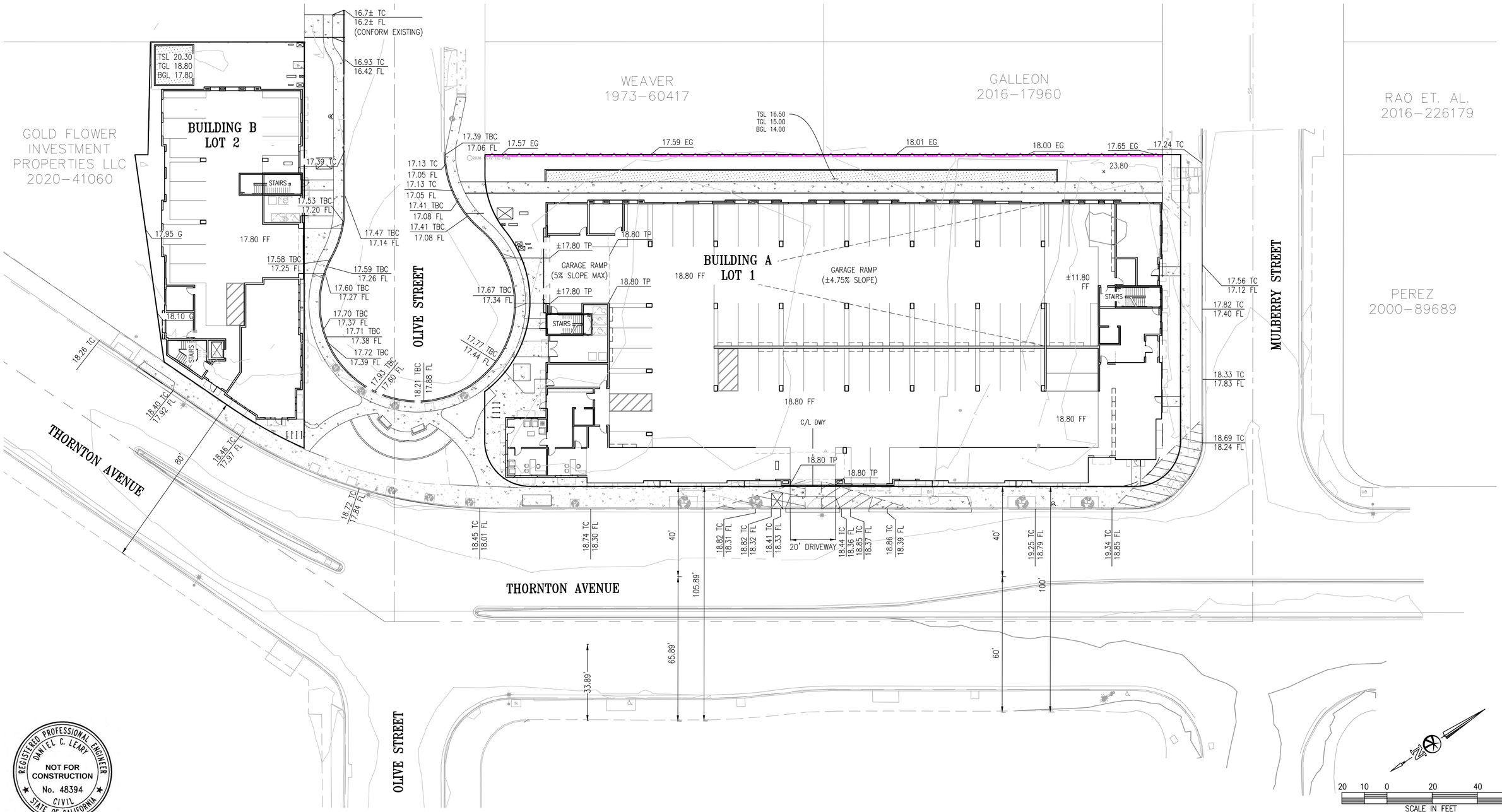
6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'



CROSS SECTION OF BUILDING A
NOT TO SCALE



REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

SHEET C6 OF 9
JOB NO. 21020

LEGEND

EXISTING UTILITY TO BE ABANDONED

NOTES:

1. JOINT TRENCH, GAS LINE RELOCATION INFORMATION SHOWN IS VERY PRELIMINARY AND SUBJECT TO CHANGE. INFORMATION IS SHOWN HERE AS A CONCEPT TO SATISFY CITY OF NEWARK REQUIREMENT FOR TENTATIVE MAP APPROVAL. FINAL DESIGN DOCUMENTS WILL BE PROVIDED TO THE CITY OF NEWARK AND UTILITY OWNERS FOR APPROVAL DURING THE IMPROVEMENT PLAN PHASE.
2. SIZE AND EXTENT OF ALL PROPOSED WATER LINES ON THIS PLAN IS VERY PRELIMINARY AND SUBJECT TO CHANGE. METER VAULTS AND BACK FLOW PREVENTION DEVICES SIZED CONSERVATIVELY ON THIS SHEET TO SHOW CONCEPT. PROPOSED BUILDING AND B WATER LATERALS WILL MOST LIKELY BE SMALLER THAN SHOWN ON THIS SHEET.
3. REPLACEMENT OF WATER MAINS DEPENDS ON PROPOSED BUILDING A AND B WATER DEMAND CALCULATIONS. SAID CALCULATIONS ARE NOT AVAILABLE AT THIS TIME. THUS, THE EXTENT OF REPLACEMENT OF EXISTING 6" ACP WL ON OLIVE STREET, AS SHOWN ON THIS SHEET, IS SUBJECT TO CHANGE. WATER MATERIALS AND DESIGN IS PER ACWD STANDARD DETAILS.

VESTING TENTATIVE MAP
TRACT 8632
UTILITY PLAN

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'

MA
2013-145268

GOLD FLOWER INVESTMENT PROPERTIES LLC
2020-41060

WEAVER
1973-60417

GALLEON
2016-17960

RAO ET. AL.
2016-226179

PEREZ
2000-89689

2" IRRIGATION SERVICE (PER BP-1-08)
TRANSFORMER PAD
6" FIRE SERVICE (PER BP-3-08)
FI 1
TG 20.68
INV 12.28
TSL 20.30
BGL 17.80
12" RCP SD
2" PVC WL
6" PVC WL
SDMH 1
15" INV 11.98
REPLACE 223 LF OF EX. 6" ACP WL WITH 8" PVC WL
2" COMMERCIAL SERVICE (PER BP-1-08)
INSTALL HYDRANT (PER FH-2-08)
EX SSMH
RIM 17.83
6" INV 9.69
EX 6" SS
EX 15" SD
8" PVC WL
SDMH 2
15" INV 11.81
6" RESIDENTIAL SERVICE (PER BP-2-08)
PLACED INSIDE GARAGE
STAIRS
BUILDING B
LOT 2
20' DRIVEWAY
EX SS CLEANOUT
4" PVC SS
SSMH 1
6" INV 11.37
EX SSMH
RIM 17.65
6" INV 11.45
EX WATER LATERAL TO BE ABANDONED
OLIVE STREET
2" GAS
TRANSFORMER PAD
FI 2
TG 17.80
INV 12.25
TSL 16.50
TGL 15.00
BGL 14.00
6" FIRE SERVICE (PER BP-3-08)
2" COMMERCIAL SERVICE (PER BP-1-08)
2" IRRIGATION SERVICE (PER BP-1-08)
BUILDING A
LOT 1
6" RESIDENTIAL SERVICE (PER BP-2-08)
PLACED INSIDE GARAGE
6" SS
INV 11.89
EX WATER LATERAL TO BE ABANDONED
EX TEL BOX TO REMAIN
EX PG&E BOX TO REMAIN
SS LATERAL TO BE ABANDONED UP TO PL AND REMOVED PAST PL
INSTALL HYDRANT (PER FH-2-08)
EX FIRE HYDRANT TO REMAIN
EX ELECTRIC BOX TO REMAIN
6" PVC WL
6" PVC SS
20' DRIVEWAY
EX 12" WL
EX. 12" ACP WL
REPLACE 20 LF OF EX. 12" ACP WL WITH 12" PVC WL
SSMH 2
6" SS INV 11.37
10" SS INV 11.37
EX SSMH
RIM 19.56
10" INV 11.73
EX SSMH
RIM 21.10
18" INV 9.97
MULBERRY STREET
EX 10" SS
EX W
EX CB
RIM 18.29
15" INV 11.11
EX 15" INV 9.99
EX SDMH
RIM 19.31
15" INV 9.47
18" INV 9.22
24" INV 8.72
EX SSMH
RIM 19.26
6" INV 11.00
10" INV 11.00
EX 24" SL
EX 18" SD
THORNTON AVENUE
EX GAS
EX 6" SS
EX 18" SD
OLIVE STREET

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

SHEET C7 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
PRELIMINARY STORM WATER CONTROL PLAN

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'

LEGEND

- DRAINAGE MANAGEMENT AREA BOUNDARY LIMITS
- SD — PROPOSED STORM DRAIN
- DRAINAGE FLOW DIRECTION
- DMA 3 xx,xxx SF — DRAINAGE MANAGEMENT AREA/ FLOW-THROUGH PLANTER
- IMP 3 x,xxx SF — INTEGRATED MANAGEMENT PRACTICE AREA

IMP SIZING DMA 1

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this sheet for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain footnotes and notes that will be automatically calculated.

1.0 Project Information

1.1	Project Name:	Thornton Ave & Olive St., Tract 8632	
1.2	City application ID:	Thornton Ave & Olive St. Parcel Map No: 13236	
1.3	Site Address or APN:		
1.4	Tract or Parcel Map No:		
1.5	Site Mean Annual Precip. (MAP)	14.0	Inches

Refer to the Mean Annual Precipitation Map in Appendix F of the C.3 Technical Guidance to determine the MAP, as before, for the site. Click here for map

1.6	Applicable Rain Gauge:	San Jose

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

	MAP adjustment factor is automatically calculated as:	0.97

(The "Site Mean Annual Precipitation (MAP)" is inputted by the MAP for the applicable rain gauge. As used in Table 1-2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2.1	Name of DMA:	DMA 1 to IMP 1

Use rows 2.2 and 2.3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (sq. ft)	Adjust Pervious Surface	Effective Impervious Area
2.2	Impervious surface	9,182	1.0	9,182
2.3	Pervious surface	1,807	0.1	181
	Total DMA Area (square feet) =	10,989		
2.4		Total Effective Impervious Area (EIA)	9,363	Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 1-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48 Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficient of 1.00	
Oakland Airport	16.4	0.67	
San Jose	14.4	0.56	
3.1	Unit basin storage volume from Table 1-2	0.56	Inches

(The coefficient for this method is 1.00, due to the conservation of any freshwater to effective impervious areas)

3.2	Adjusted unit basin storage volume	0.54	Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3.3	Required Capture Volume (in cubic feet)	425	Cubic feet

(The adjusted unit basin storage volume (in feet) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4.1	Rainfall intensity	0.2	Inches per hour
4.2	Divide Item 3.2 by Item 4.1	2.72	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5.1	4% of DMA impervious surface	375	Square feet
5.2	Area 25% smaller than item 5.1	281	Square feet
5.3	Volume of treated runoff for area in Item 5.2	319	Cubic feet (Item 5.2 * 3 inches per hour * 1/12 * Item 4.2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6.1	Subtract Item 5.1 from Item 5.3	106	Cubic feet (Amount of runoff to be stored in ponding area)
6.2	Divide Item 6.1 by Item 5.2	0.4	Feet (Depth of stored runoff in surface ponding area)
6.3	Convert Item 6.2 from feet to inches	4.5	Inches (Depth of stored runoff in surface ponding area)
6.4	If ponding depth in Item 6.3 exceeds your Target depth, skip to Item 8.1. If not, continue to Step 7.1.		

7.0 Optimize Size of Treatment Measure

7.1	Enter an area larger or smaller than Item 5.2	281	Sq. ft. (Enter Larger area if you need less ponding depth, smaller for more depth.)
7.2	Volume of treated runoff for area in Item 7.1	319	Cubic feet (Item 7.1 * 3 inches per hour * 1/12 * Item 4.2)
7.3	Subtract Item 7.1 from Item 5.3	106	Cubic feet (Amount of runoff to be stored in ponding area)
7.4	Divide Item 7.3 by Item 7.1	0.38	Feet (Depth of stored runoff in surface ponding area)
7.5	Convert Item 7.4 from feet to inches	4.53	Inches (Depth of stored runoff in surface ponding area)
7.6	If the ponding depth in Item 7.5 meets Target, stop here. If not, repeat Steps 7.1 through 7.5 until you obtain target depth.		

8.0 Surface Area of Treatment Measure for DMA

8.1	Final surface area of treatment*	281	Square feet (Either Item 6.4 or Item 7.1 entered in Item 7.6)

*Note: Check with the local jurisdiction on its policy regarding the maximum hydrocontrol surface area released

IMP SIZING DMA 2

Worksheet for Calculating the Combination Flow and Volume Method

Instructions: After completing Section 1, make a copy of this sheet for each Drainage Management Area within the project. Enter information specific to the project and DMA in the cells shaded in yellow. Cells shaded in light blue contain footnotes and notes that will be automatically calculated.

1.0 Project Information

1.1	Project Name:	Thornton Ave & Olive St., Tract 8632	
1.2	City application ID:	Thornton Ave & Olive St. Parcel Map No: 13236	
1.3	Site Address or APN:		
1.4	Tract or Parcel Map No:		
1.5	Site Mean Annual Precip. (MAP)	14.0	Inches

Refer to the Mean Annual Precipitation Map in Appendix F of the C.3 Technical Guidance to determine the MAP, as before, for the site. Click here for map

1.6	Applicable Rain Gauge:	San Jose

Enter "Oakland Airport" if the site MAP is 16.4 inches or greater. Enter "San Jose" if the site MAP is less than 16.4 inches.

	MAP adjustment factor is automatically calculated as:	0.97

(The "Site Mean Annual Precipitation (MAP)" is inputted by the MAP for the applicable rain gauge. As used in Table 1-2, below.)

2.0 Calculate Percentage of Impervious Surface for Drainage Management Area (DMA)

2.1	Name of DMA:	DMA 2 to IMP 2

Use rows 2.2 and 2.3, enter the areas in square feet for each type of surface within the DMA.

	Type of Surface	Area of surface type within DMA (sq. ft)	Adjust Pervious Surface	Effective Impervious Area
2.2	Impervious surface	36,842	1.0	36,842
2.3	Pervious surface	5,950	0.1	595
	Total DMA Area (square feet) =	42,792		
2.4		Total Effective Impervious Area (EIA)	37,437	Square feet

3.0 Calculate Unit Basin Storage Volume in Inches

Table 1-2: Unit Basin Storage Volumes (in inches) for 80 Percent Capture Using 48 Hour Drawdowns

Applicable Rain Gauge	Mean Annual Precipitation (in)	Unit Basin Storage Volume (in) for Applicable Runoff Coefficient of 1.00	
Oakland Airport	16.35	0.67	
San Jose	14.4	0.56	
3.1	Unit basin storage volume from Table 1-2	0.56	Inches

(The coefficient for this method is 1.00, due to the conservation of any freshwater to effective impervious areas)

3.2	Adjusted unit basin storage volume	0.54	Inches

(The unit basin storage volume is adjusted by applying the MAP adjustment factor.)

3.3	Required Capture Volume (in cubic feet)	1,699	Cubic feet

(The adjusted unit basin storage volume (in feet) is multiplied by the size of the DMA and converted to feet)

4.0 Calculate the Duration of the Rain Event

4.1	Rainfall intensity	0.2	Inches per hour
4.2	Divide Item 3.2 by Item 4.1	2.72	Hours of Rain Event Duration

5.0 Preliminary Estimate of Surface Area of Treatment Measure

5.1	4% of DMA impervious surface	1,497	Square feet
5.2	Area 25% smaller than item 5.1	1,123	Square feet
5.3	Volume of treated runoff for area in Item 5.2	1,274	Cubic feet (Item 5.2 * 3 inches per hour * 1/12 * Item 4.2)

6.0 Initial Adjustment of Depth of Surface Ponding Area

6.1	Subtract Item 5.1 from Item 5.3	425	Cubic feet (Amount of runoff to be stored in ponding area)
6.2	Divide Item 6.1 by Item 5.2	0.4	Feet (Depth of stored runoff in surface ponding area)
6.3	Convert Item 6.2 from feet to inches	4.5	Inches (Depth of stored runoff in surface ponding area)
6.4	If ponding depth in Item 6.3 exceeds your Target depth, skip to Item 8.1. If not, continue to Step 7.1.		

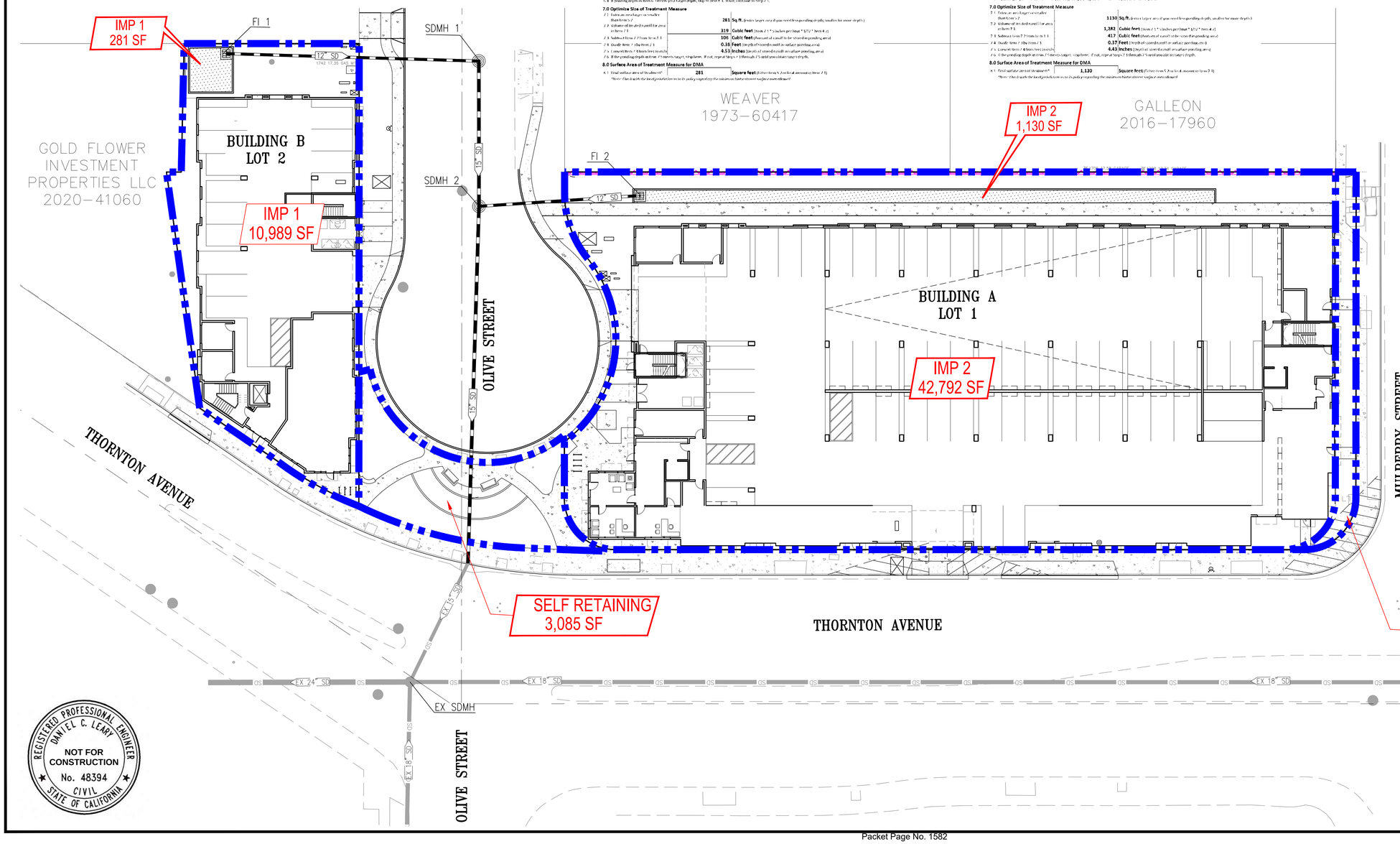
7.0 Optimize Size of Treatment Measure

7.1	Enter an area larger or smaller than Item 5.2	1130	Sq. ft. (Enter Larger area if you need less ponding depth, smaller for more depth.)
7.2	Volume of treated runoff for area in Item 7.1	1,282	Cubic feet (Item 7.1 * 3 inches per hour * 1/12 * Item 4.2)
7.3	Subtract Item 7.1 from Item 5.3	417	Cubic feet (Amount of runoff to be stored in ponding area)
7.4	Divide Item 7.3 by Item 7.1	0.37	Feet (Depth of stored runoff in surface ponding area)
7.5	Convert Item 7.4 from feet to inches	4.43	Inches (Depth of stored runoff in surface ponding area)
7.6	If the ponding depth in Item 7.5 meets Target, stop here. If not, repeat Steps 7.1 through 7.5 until you obtain target depth.		

8.0 Surface Area of Treatment Measure for DMA

8.1	Final surface area of treatment*	1,130	Square feet (Either Item 6.4 or Item 7.1 entered in Item 7.6)

*Note: Check with the local jurisdiction on its policy regarding the maximum hydrocontrol surface area released



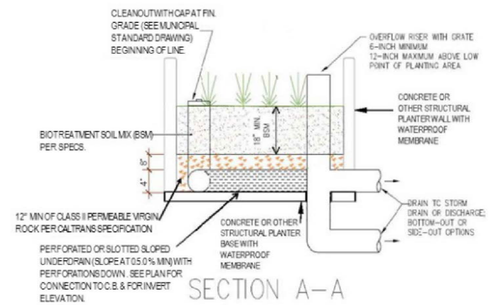


Figure 6-10: Cross section A-A of flow-through planter, shows side view of underdrain

Figure 6-11: Cross section B-B of flow-through planter, shows cross section of underdrain

FLOW THROUGH PLANTER DETAIL

PROJECT TO ACCOMMODATE HM REQUIREMENTS DURING IMPROVEMENT PLANS STAGE AS NECESSARY. MODIFICATIONS TO BASINS TO MEET HM REQUIREMENTS WILL INCLUDE ADJUSTMENT OF THE CLASS 2 SECTION DEPTH, HEIGHT OF INVERTS OF PIPES RELATED TO THE BASIN, ETC. MODIFICATIONS TO BE BASED OFF HYDROLOGY REPORT THAT WILL ACCOMMODATE IMPROVEMENT PLANS. MOSQUITO ABATEMENT REQUIREMENTS WILL BE MET PER DISTRICT REQUIREMENTS AND BASED ON FINAL DESIGN.

REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

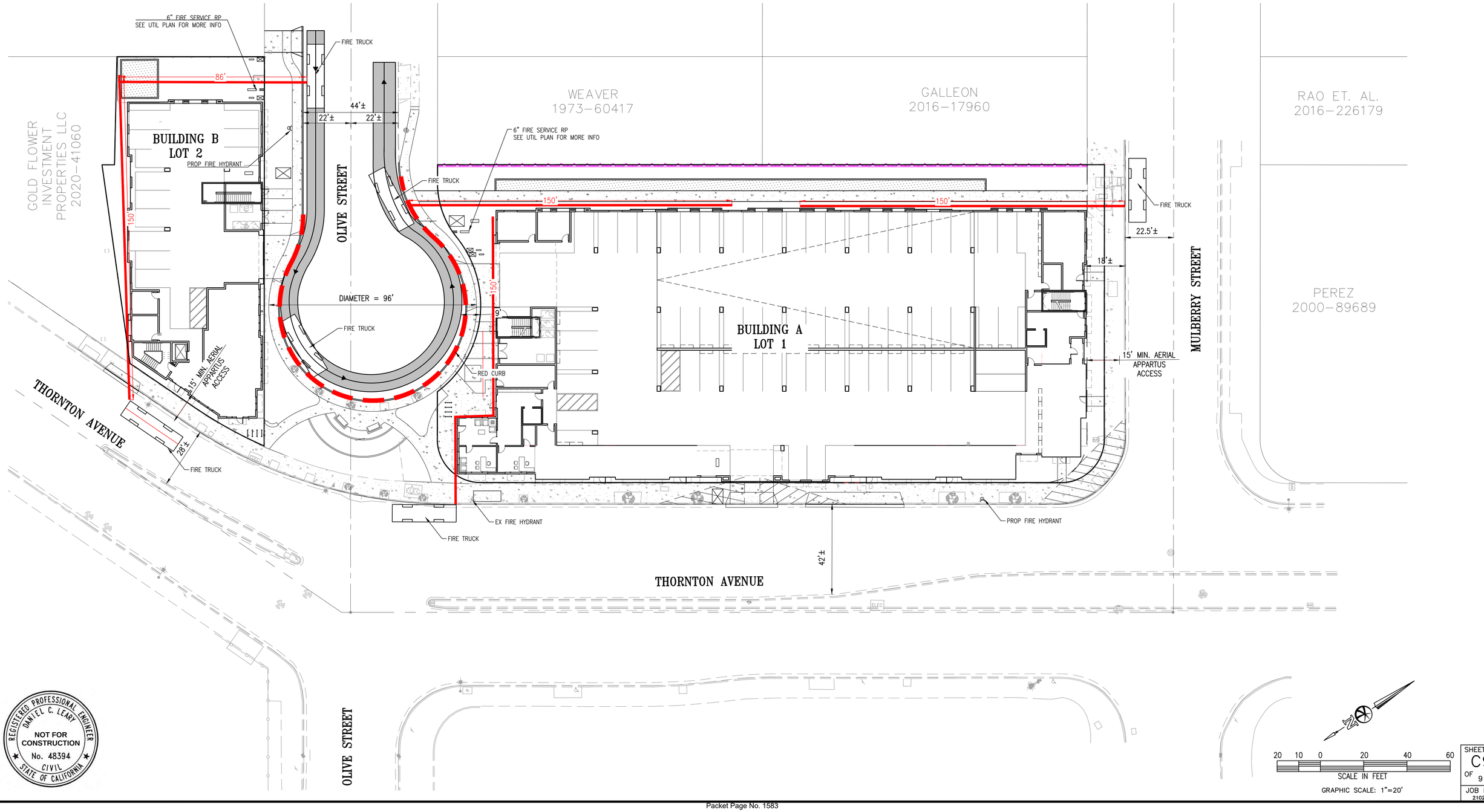
SHEET C8 OF 9
JOB NO. 21020

VESTING TENTATIVE MAP
TRACT 8632
FIRE ACCESS PLAN

6781 THORNTON AVE
CITY OF NEWARK
ALAMEDA COUNTY, CALIFORNIA

BELLECCI & ASSOCIATES, INC.
CONCORD, CALIFORNIA

NOVEMBER 30, 2023 SCALE: 1"=20'



REGISTERED PROFESSIONAL ENGINEER
DANIEL C. LEARY
NOT FOR CONSTRUCTION
No. 48394
CIVIL
STATE OF CALIFORNIA

20 10 0 20 40 60
SCALE IN FEET
GRAPHIC SCALE: 1"=20'

SHEET C9 OF 9
JOB NO. 21020

PLANT LEGEND

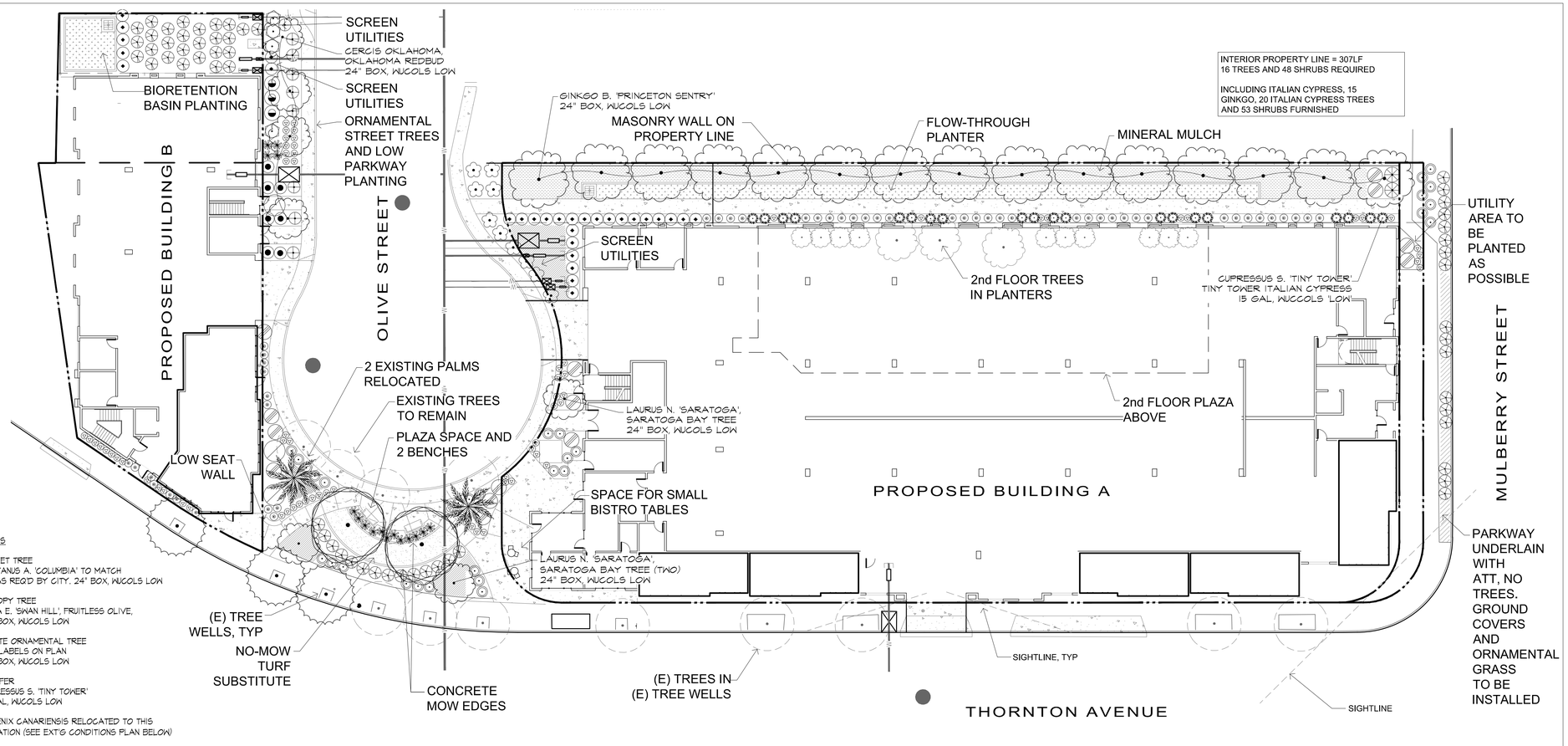
BOTANICAL NAME / COMMON NAME	SIZE	WUCOLS
ANIGOZANTHOS 'PINK PEARL' DWARF KANGAROO PAWS	1 GAL	L
CALAMAGROSTIS 'KARL FOERSTER' REED FEATHER GRASS	5 GAL	L
HETEROMELES ARBUTIFOLIA TOYON	5 GAL	L
JUNIPERUS 'BUFFALO' BUFFALO JUNIPER	1 GAL	L
LOROPETALUM C. 'GREEN' GREEN LOROPETALUM	5 GAL	L
MUHLENBERGIA C. 'REGAL MIST' PINK MUHLY	5 GAL	L
MYRTUS COMMUNIS MYRTLE	5 GAL	L
NANDINA COMPACTA COMPACT HEAVENLY BAMBOO	5 GAL	L
NERIUM O. 'PETITE RED' PETITE RED OLEANDER	5 GAL	L
OLEA E. 'LITTLE OLLIE' DWARF OLIVE	5 GAL	L
PRUNUS C. 'BRIGHT 'N TIGHT' COMPACT CAROLINA CHERRY	5 GAL	L
RHAPHIOLEPIS I. 'CLARA' INDIAN HAWTHORN	5 GAL	L
ROSA FLOWER CARPET PINK FLOWER CARPET ROSE	3 GAL	L
ROSMARINUS O. 'HUNTINGTON BLUE' PROSTRATE ROSEMARY	5 GAL	L
ROSMARINUS O. 'TUSCAN BLUE' UPRIGHT ROSEMARY	5 GAL	L
PARTHENOCISSUS TRICUSPIDATA BOSTON IVY (STAKED AGAINST WALL)	1 GAL	L

GROUND COVERS (ALL MIN 4" POT, ALL WUCOLS 'LOW')

- APTINA 'RED APPLE', APTENIA
- FESTUCA 'ELIJAH BLUE'; BLUE FESCUE
- CAREX TUMULICOLA, GREY SEDGE
- BIORETENTION AREAS - MIX OF CAREX AND JUNCUS
- MINERAL MULCH
- EXISTING TREE

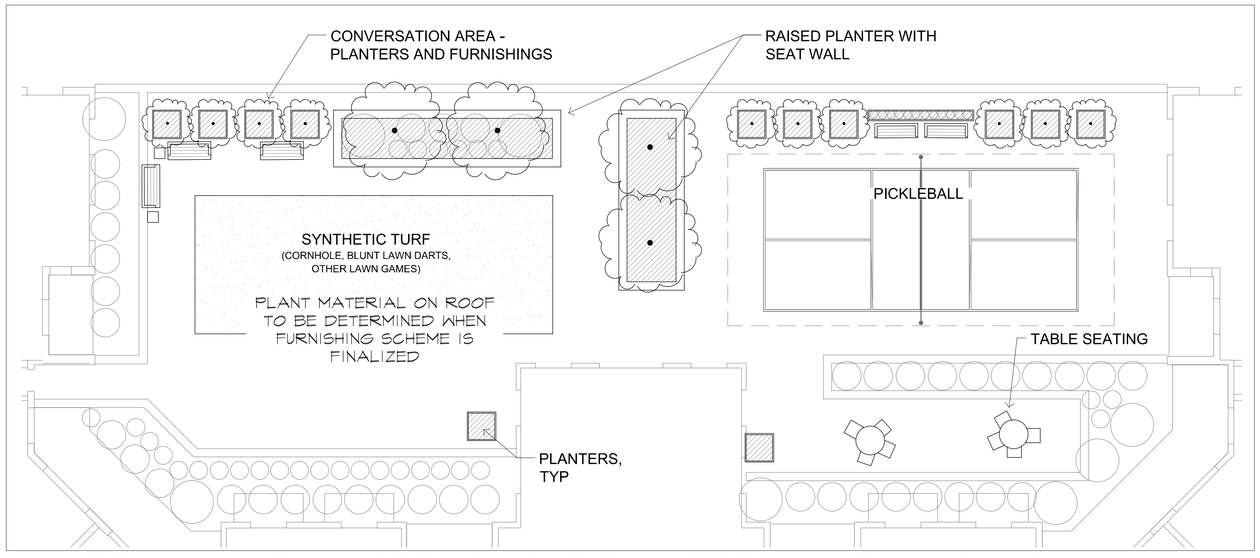
TREES

- STREET TREE PLATANUS A. 'COLUMBIA' TO MATCH OR AS REQ'D BY CITY. 24" BOX, WUCOLS LOW
- CANOPY TREE OLEA E. 'SWAN HILL', FRUITLESS OLIVE, 24" BOX, WUCOLS LOW
- ONSITE ORNAMENTAL TREE SEE LABELS ON PLAN 24" BOX, WUCOLS LOW
- CONIFER CUPRESSUS S. 'TINY TOWER' 15 GAL, WUCOLS LOW
- PHOENIX CANARIENSIS RELOCATED TO THIS LOCATION (SEE EXT'G CONDITIONS PLAN BELOW)



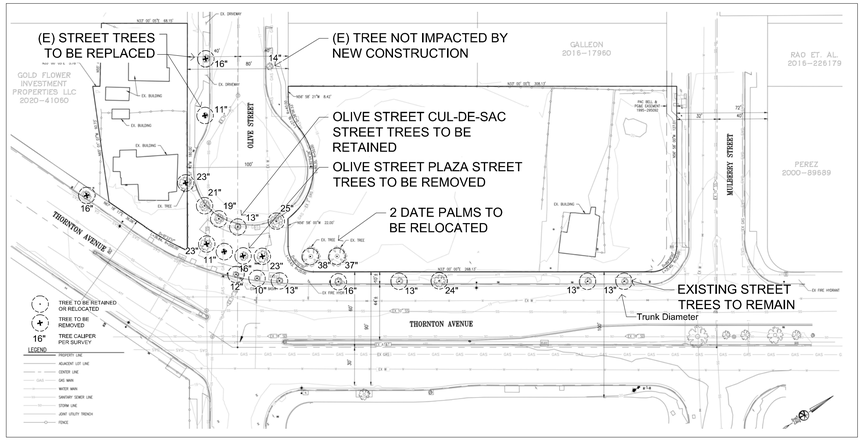
SCHEMATIC LANDSCAPE DESIGN

SCALE 1" = 20'-0"



SCHEMATIC LANDSCAPE DESIGN - PODIUM ACTIVITY AREA

SCALE 1" = 10'-0"



EXISTING CONDITIONS

NTS

SEE CIVIL SHEET 2

NORTH

SCALE AS NOTED

Sierra Designs, inc

Landscape Architecture • Planning

113 N. Church Street Suite 307
Visalia, CA 93291
T: 559.733.3600
C: 559.786.2381
khustmacher@sierradesignsla.com
dan@sierradesignsla.com

Revision/Issued for:

- 12.5.2022 Backcheck
- 5.16.2023 Backcheck
- 11.2.2023 Backcheck

Professional Seal:





Not for Construction

Lepakshi Homes

6781 Thornton Ave
Newark, CA

A Project For:

Lepakshi Homes
14811 Peralta Blvd
Fremont, CA 94536
408.420.2268

Sheet Title:

SCHEMATIC LANDSCAPE PLAN

SDI Job No: 21-028
Project Manager: kh
Drawn By: kh
Date: 11.27.2023
Scale: As Noted

Sheet:

L1.0

of 1 Sheets



Lepashki Homes

City Council Meeting
September 12, 2024

Lepashki Homes

- On August 13th the Planning Commission approved the Design Review, Vesting Tentative Map and Density Bonus
- Action to consider an Alternate Means of Compliance allowing affordable housing units to be provided on-site in-lieu of paying a fee for the Lepashki Home project

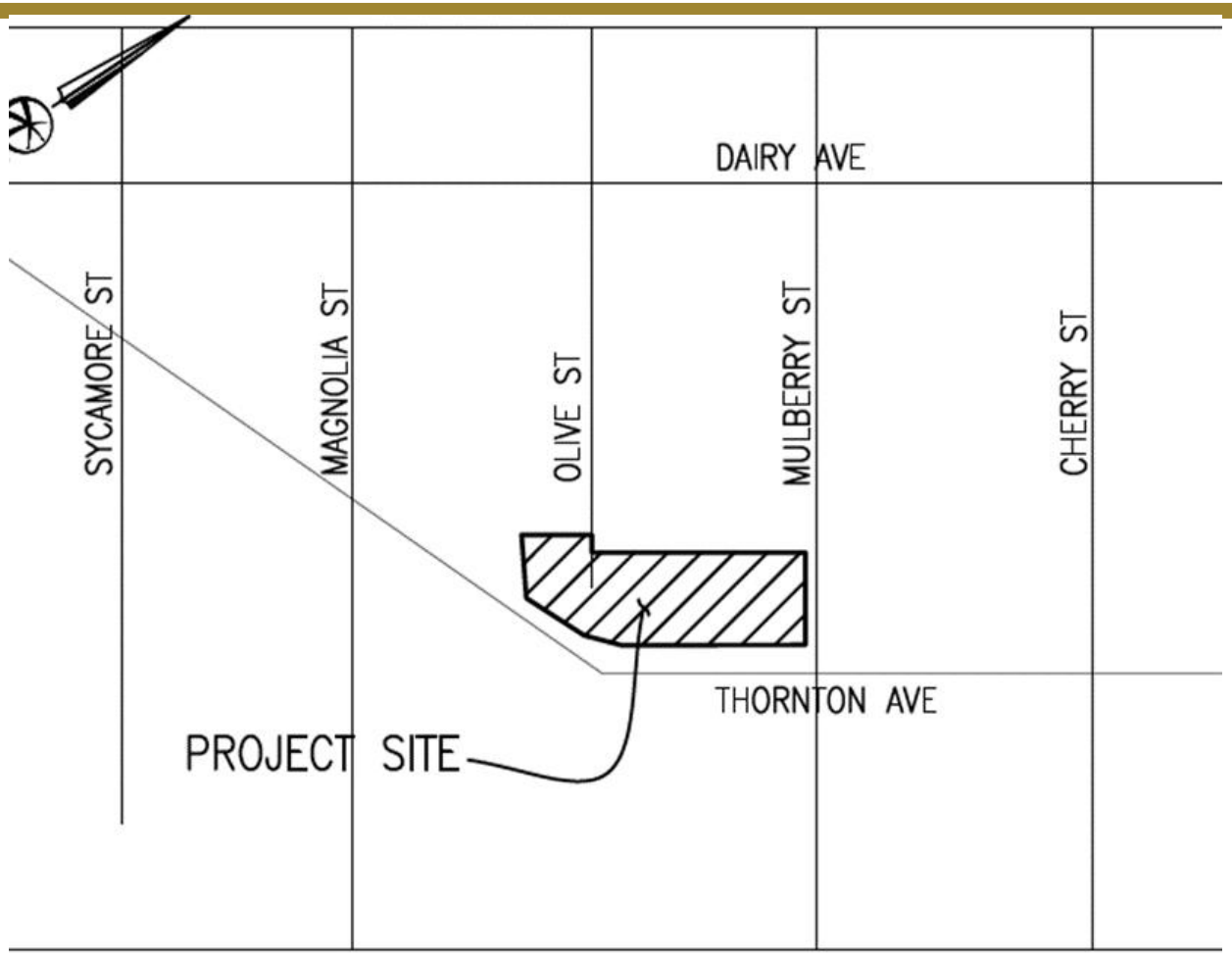
Project Proposal

- 88 units in two buildings
- 13 BMR units for low-income households
- 15,000 sf in private open space
- 125 parking spaces
- 1,620 sf of retail space



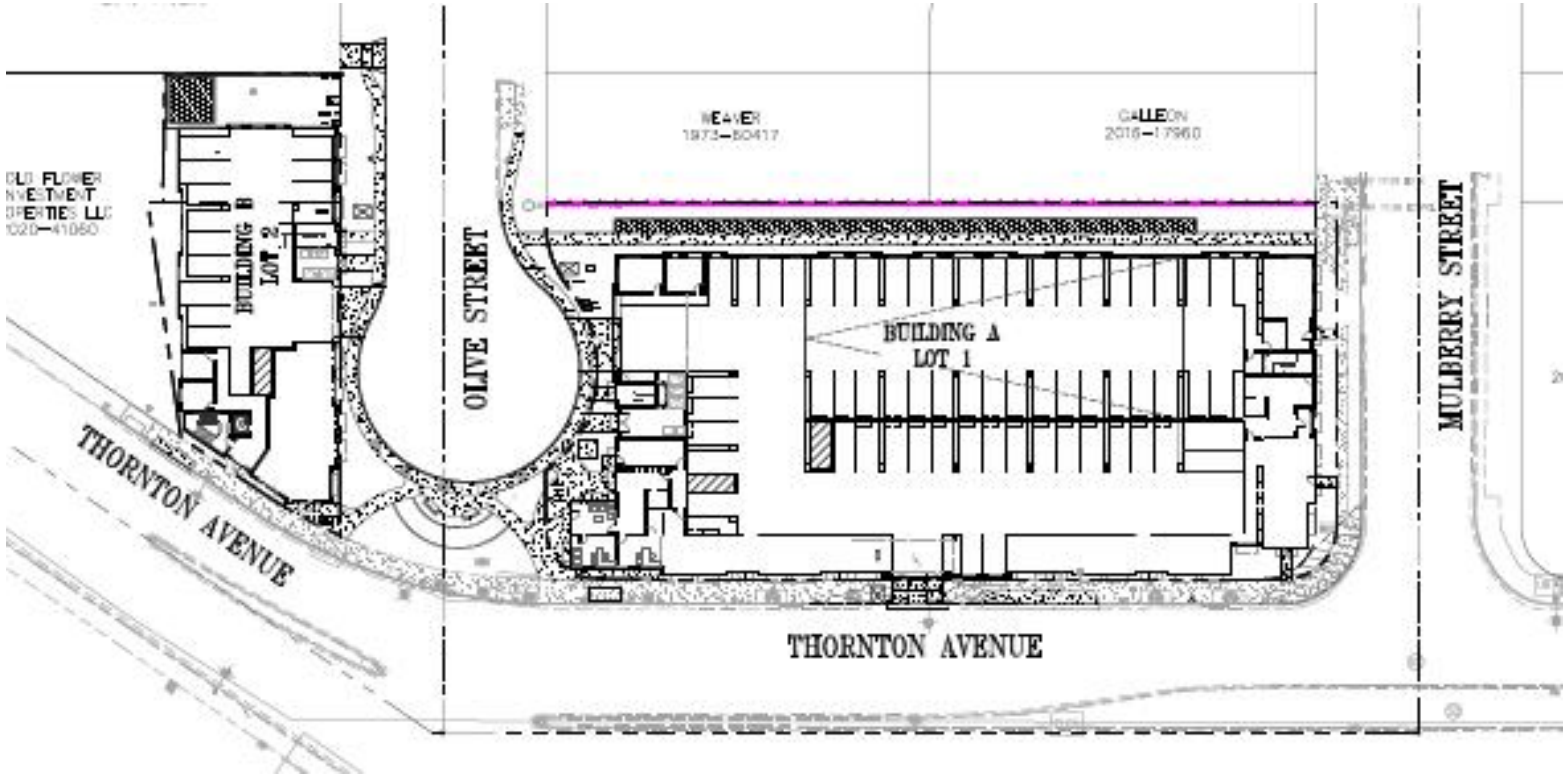
Project Location

- Project located on Thornton Ave between the terminus of Olive Street and Mulberry St
- Currently consists of seven parcels
- Three of the parcels contain a single-family homes, while the remaining four parcels are vacant
- Total site 1.25 acres



Proposed Site Plan

- Site will be consolidated as two lots separated by a small green space
- Open space is public and will be landscape as part of Thornton Streetscape project
- Lot 1 - 1.01 acres
- Lot 2 - .25 acres



General Plan and Zoning

- The General Plan land use designation for the site is Commercial Mixed Use (CMU)
- The site is zoned as Commercial Mixed Use
- The project is consistent with the density, height, parking, open space, and setback requirements of the zoning district.

Old Town Newark Specific Plan

- Located on an Opportunity Site
- Housing and affordable units will support the commercial core
- Project is consistent with the goals and policies of the OTNSP

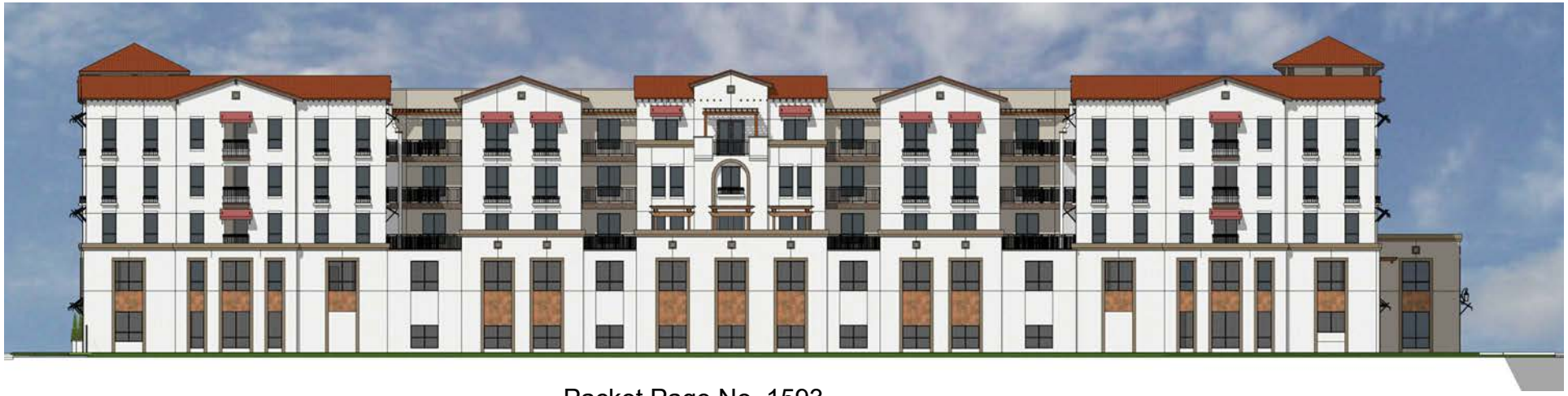


Design Review

- Design Review in accordance with NMC §17.34.060
- OTNSP encourages the concentration of more significant building massing and mixed-use buildings along Thornton Avenue. Building forms and massing then transition down in height to adjacent lower-scale existing neighborhoods.
- Staff worked with Larry Cannon of the Cannon Design Group to improve the architectural style and elements to ensure the project's consistency with the OTNSP. Areas of focus included:
  - Simplify and unify the facades
  - Unify the corners of the overall design
  - Variety to the top floor heights
  - Enhanced pedestrian experience
  - Projecting eaves and gable ends
  - Addition of balconies

Building A



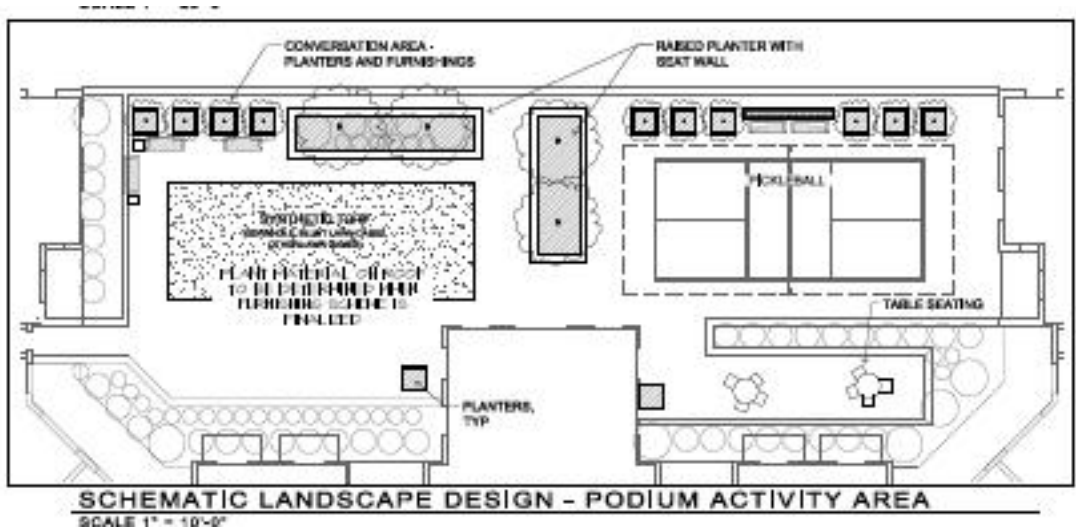


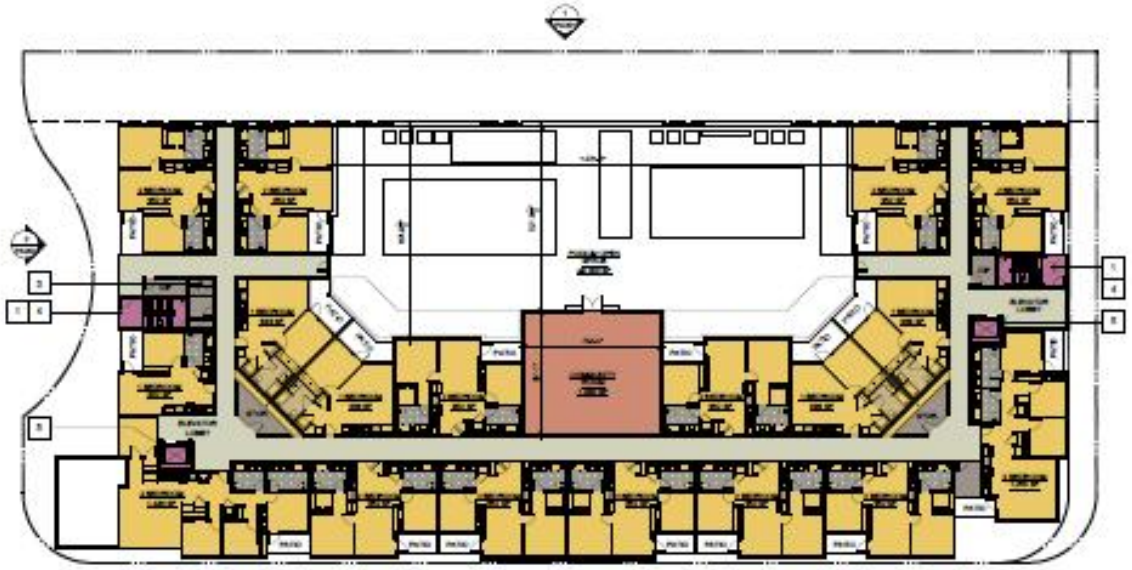
Building A





Building A


CONVERSATION AREA -
PLANTERS AND FURNISHINGS
RAISED PLANTER WITH
SEAT WALL
PICKLEBALL
TABLE SEATING
PLANTERS,
TYP
SCHEMATIC LANDSCAPE DESIGN - PODIUM ACTIVITY AREA



Building B



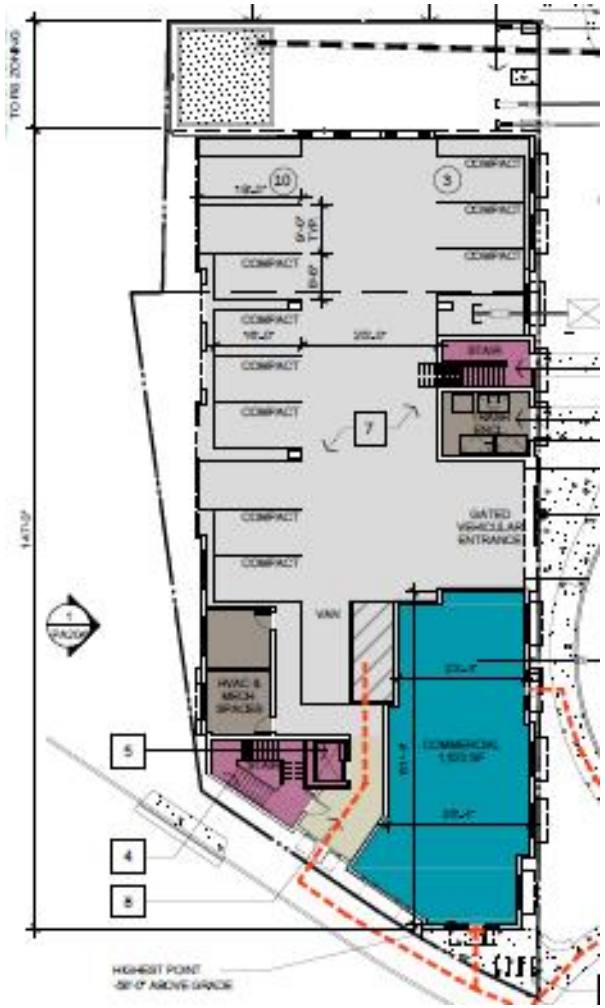


Building B





Building B


COMPACT
STAIR
GATED VEHICULAR ENTRANCE
VAN
HVAC & MECH SPACES
COMMERCIAL
HIGHEST POINT


2 BEDROOM
1 BEDROOM
PATIO

Affordable Housing

Program

- Developers pay an impact fee or may provide on-site affordable subject to City Council approval
- The developer is requesting to provide 13 affordable units in-lieu of paying the impact fee
- Approval of alternative means of compliance needed

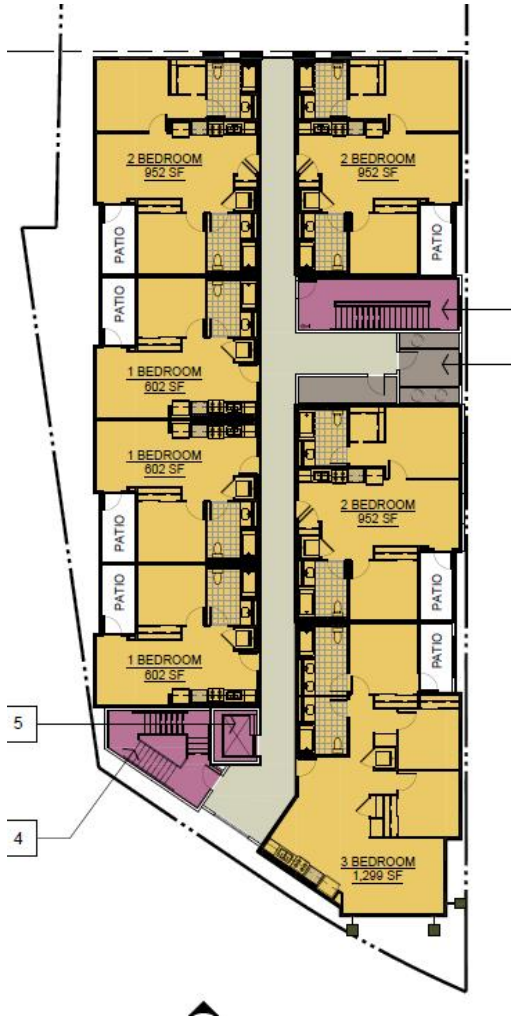
Affordable Housing Agreement

- Providing affordable units are subject to an Affordable Housing Regulatory Agreement established between the City and the residential developer
  - Establish the total affordable unit count and income category distribution described
  - Set the deed-restricted affordable duration (45 years)
  - Newark local preference and various other terms for Lepakshi's homes initial sale of the units.
  - Individual buyers of the affordable units will be required to enter into similar agreements at the time of purchase to ensure the units are used as affordable housing.
  - Equity sharing with City when units are sold
- Administered by City staff with consultant assistance

Affordable Housing

BMR Units

- 13 Units for Low-Income Households (80% of Low Income)
- 11 in Building B
- 2 in Building A
- Eleven 1-bedroom
- Two 2-bedroom units
- BMR Units shall be the same as typical units provided in the project



Affordable Housing Pricing

Program

- For one-bedroom units this represents approximately $294K, assuming a two-person household
- For two-bedroom units this represents approximately $334K, assuming a three-person household

	Household Size				
City of Newark	**1 Person**	**2 Person**	**3 Person**	**4 Person**	**5 Person**
Low Income					
Household Income (a)	**$84,600**	**$96,650**	**$108,750**	**$120,800**	**$130,500**
Max. Monthly Housing Budget (b)	**$2,115**	**$2,416**	**$2,719**	**$3,020**	**$3,263**
Monthly Payments (b)	**$2,115**	**$2,416**	**$2,719**	**$3,020**	**$3,263**
Principal and Interest	$1,511	$1,746	$1,983	$2,219	$2,409
Homeowners Insurance	$40	$40	$40	$40	$40
Property Taxes	$246	$284	$323	$361	$392
Mortgage Insurance	$174	$201	$228	$255	$277
Homeowners' Association Fees	$145	$145	$145	$145	$145
One-Time Payments	**$13,192**	**$15,249**	**$17,320**	**$19,377**	**$21,038**
Down Payment	$8,899	$10,286	$11,683	$13,071	$14,191
Upfront Mortgage Insurance	$4,294	$4,963	$5,637	$6,307	$6,847
Maximum Affordable Home Price	**$254,249**	**$293,892**	**$333,800**	**$373,443**	**$405,448**

STAFF REPORT

Item F. 4.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	James Scanlin, Environmental Services Manager
SUBJECT	Status of the Newark Climate Action Plan Update project

SUMMARY AND RECOMMENDATION

The City has a long history of being proactive in addressing the threat of climate change. In 2007, Mayor David W. Smith signed the U.S. Mayor's Climate Protection Agreement, thereby committing the City to taking action for climate protection. The City adopted a Climate Action Plan (CAP) in January 2010. The CAP set a target to reduce Greenhouse Gas (GHG) emissions from activities within the city to 1990 levels by 2020 (i.e., an approximately 15% reduction) which was in line with the State's target at that time.

Due to the increasing awareness of the threat of climate change, the State has adopted much more aggressive GHG reduction targets. The State's target is to reduce GHG emissions to 40% below 1990 levels by 2030 and achieve carbon neutrality by 2045. The City seeks to align with the State's updated GHG reduction targets and is preparing an update to the 2010 CAP. This update, titled Climate Action Newark (CAN), will provide the City with a plan to reduce GHG emissions from activities in Newark over the coming decades.

Staff recommends that the City Council receive an update on the status of Climate Action Newark as an update to the 2010 CAP.

BACKGROUND

Since the City's 2010 CAP was adopted, the regulatory landscape of climate action has shifted toward dramatic decarbonization efforts. The State adopted a 2030 GHG reduction target of 40% below 1990 levels through Senate Bill (SB) 32, and Assembly Bill (AB) 1279 requires the State to achieve net zero GHG emissions as soon as possible but no later than 2045 and to reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045. The California Air Resources Board's (CARB's) 2022 Scoping Plan for Achieving Carbon Neutrality lays out a pathway to achieving the AB 1279 targets. In addition, as the State implements GHG regulations that target new development (e.g., strengthening building energy efficiency standards), the opportunities for additional reductions from new development at the local level diminish. These circumstances underscore the need to focus on actions within the City's

authority and influence to reduce emissions from the existing building stock and built environment (e.g., community and roadway design, energy systems, vehicle fueling and charging) to align with the State targets. Aligning with the State's targets will allow development projects to meet CEQA greenhouse gas emission requirements by incorporating the City's CAP measures.

Climate Action Newark (CAN) is a comprehensive strategy to mitigate the impacts of climate change and reduce GHG emissions. The guiding principles of CAN that will drive strategy development include the following:

- Ambitious. The proposed strategies will be ambitious and serve to “move the needle” in reducing GHGs and support community resilience.
- Realistic. While the proposed strategies will be ambitious, their implementation will be realistic and attainable, given local capacity.
- Collaborative. Implementing the proposed strategies will require collaboration and involvement from multiple city departments, the broader community, and other stakeholders.
- Comprehensive. The proposed strategies will span a range of sectors within the city and support broader regional initiatives.
- Fair. The proposed strategies will enact solutions that equitably address the sources and risks of climate change and will share the costs and benefits of action across the city.
- Beneficial. The proposed strategies aim to improve the city’s livability and the well-being of all community members.
- Specific. The proposed strategies will be as specific as possible, either through the language of the strategies themselves and/or through a suite of later-determined implementation details. Implementation details may include lead and supporting actors, implementing mechanisms, and potential funding sources, among others. Additionally, proposed strategies will be locally relevant, deliver local benefits, and support local priorities.
- Evidence-Based. The proposed strategies will reflect evidence-based knowledge and local understanding and be informed by empirical inputs (e.g., GHG inventory and forecasts).
- Transparent. Following an open decision-making process, the implementation of proposed strategies will be tracked, reported on, and evaluated over time to determine any necessary updates or revisions to strategies.

Additionally, implementation of the actions that will be included in CAN will result in co-benefits. Co-benefits refer to the additional positive outcomes alongside the primary goal(s) of each strategy upon implementation, and they may manifest across various sectors, including environmental, social, economic, and public health domains. Specific co-benefits that will be evaluated for the strategies included in CAN include:

- Improved Public Health: This may include, but is not limited to, reduced air pollution (e.g., through reducing vehicle miles traveled and transitioning to cleaner energy sources) and improved mental health (e.g., through access to clean and green spaces).
- Community Cost Savings: This may include, but is not limited to, savings related to energy efficiency (e.g., lower energy bills), infrastructure resilience (e.g., avoidance of costly repairs for damages that would have happened otherwise),

and healthcare.

- Environmental Quality: This may include, but is not limited to, biodiversity conservation, water conservation, and waste reduction.
- Economic Development: This may include, but is not limited to, job creation (e.g., investments in renewable energy, sustainable agriculture, and green infrastructure resulting in economic growth and diversification), innovation and entrepreneurship, and recreation.
- Equity: This may include, but is not limited to, social inclusion (e.g., addressing disparities, promoting greater access to resources), environmental justice (e.g., mitigating cumulative impacts from environmental stressors, fair distribution of environmental benefits), and economic empowerment.
- Adaptation/Resilience: This may include, but is not limited to, improved infrastructure resilience, improved disaster preparedness, and enhanced community cohesion.
- Resource Conservation: This may include, but is not limited to, sustainable resource management (e.g., preservation of natural resources, efficient use of resources).

Overall, CAN will be essential for mitigating climate change, safeguarding the environment, fostering economic growth, and improving the quality of life for current and future generations.

DISCUSSION/ANALYSIS

Staff has prepared an updated GHG emissions inventory for the year 2022 to serve as a baseline for Climate Action Newark. In addition, staff has prepared GHG emissions forecasts for the years 2030, 2035, 2040, and 2045 along with GHG reduction targets that align with the State's adopted targets. The City's targets represent the fair share of GHG emissions that should be reduced to align with SB 32 and AB 1279, accounting for the sources of emissions generated in Newark.

2005 and 2022 GHG Emissions Comparison

Staff compared the 2005 inventory prepared as part of the 2010 CAP with the updated 2022 inventory. This allows the City to measure progress since the 2010 CAP was adopted. It is important to note that the comparison between the two inventories includes only the emissions sectors that allowed for a side-by-side comparison. Due to a lack of available data or methodologies, the updated 2022 inventory provides additional emissions data for sectors not previously included in the 2010 CAP. The comparison between the two inventories is shown in Table 1 below. Emissions are presented in units of metric tons of carbon dioxide equivalent (MTCO2e).

Table 1

Emissions Sector	2005 GHG Inventory (MTCO2e)	2022 GHG Inventory (MTCO2e)	Percent Change (2005-2022)
Residential Building Energy	47,313	45,530	-4%
Commercial Building Energy	175,096	101,646	-42%
Transportation	192,841	206,749	+7%
Waste	18,607	10,974	-41%
Total	433,857	364,899	-16%

The 2020 target included in the 2010 CAP was to reduce emissions by 15% despite population and employment growth. A 2020 inventory was not completed as it would have shown anomalies due to the change in economics and behaviors associated with the COVID-19 pandemic. However, comparing the two inventories shows that the City was able to reduce emissions 16% below 2005 levels in 2022.

2022 GHG Emissions Inventory Results

The comprehensive 2022 GHG emissions inventory results are shown in Table 2 below (which includes additional emissions sectors not previously estimated in the 2010 inventory).

Table 2

Sector	2022 GHG Inventory (MTCO2e)	Percent of Total
On-Road Transportation	206,749	55%
Building Energy (Includes Residential and Nonresidential)	147,607	39%
Off-Road Vehicles and Equipment	10,974	3%
Solid Waste	10,255	3%
Water Supply	1,188	<1%
Wastewater Treatment	552	<1%
Total	377,325	100%

GHG Emissions Forecasts

After completing the GHG emissions inventory, staff prepared the emissions forecast analysis. The purpose of GHG emissions forecast analysis is to estimate how GHG emissions may evolve in the future given changes in population and housing, economic growth, and how state and federal legislation may help to reduce local emissions. Two forecast scenarios were prepared in that provide an assessment of how emissions generated by activities will change over time: business-as-usual (BAU) forecast and legislative-adjusted BAU forecast. The BAU forecast represents future emissions without further state, federal, regional, or local action while accounting for the city's population, employment, and land use change(s). This scenario is considered highly

conservative and unrealistic as it does not take into account known effects of current regulations on future emissions.

The legislative-adjusted BAU emissions forecasts uses the same demographic and VMT data that were used for the BAU forecasts, while also accounting for state and federal policies and regulations that would affect local emissions. For example, growth in residential building electricity consumption was scaled using housing units as the growth scaling factor, and a legislative reduction was applied to incorporate the California Code of Regulations, Title 24, Part 6 building energy efficiency standards for new development.

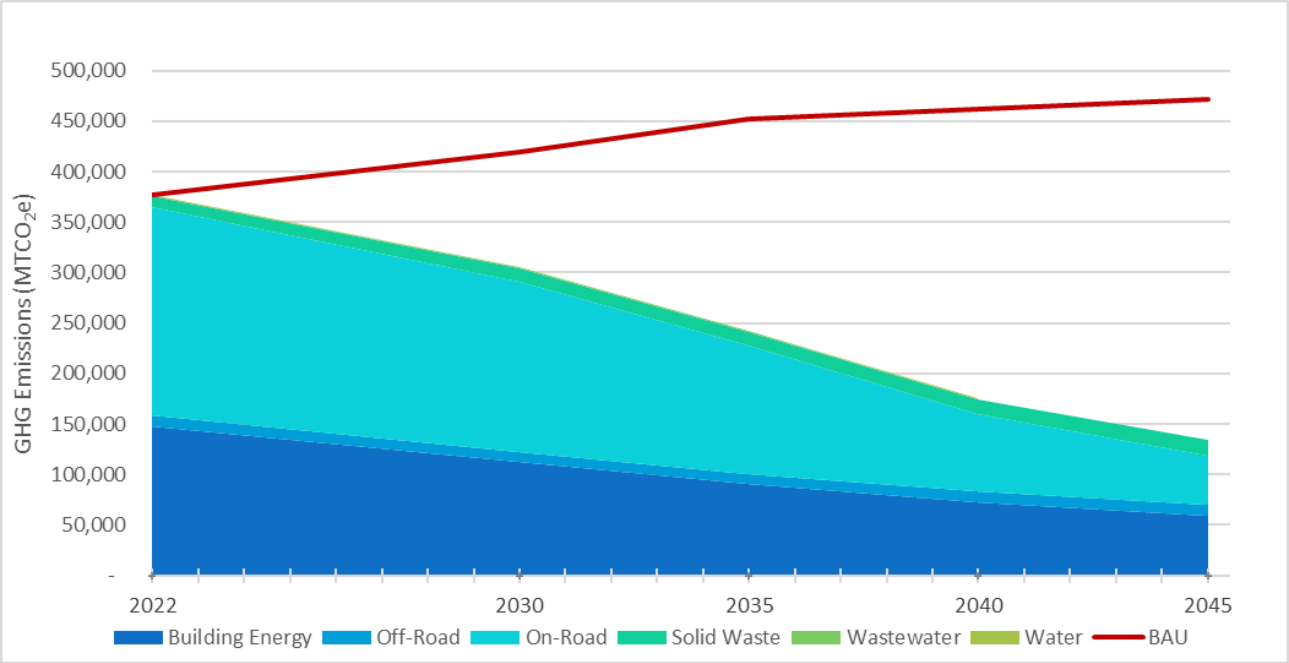
The GHG reductions considered in the legislative-adjusted BAU forecast fall generally into four categories: building energy efficiency standards, fuel efficiency standards, electric vehicle sales requirements, and renewable and zero-carbon electricity requirements. The primary drivers of the emissions reductions are the requirements of SB 100 and SB 1020 (carbon-free electricity), as well as increased electric vehicle penetration from the Advanced Clean Cars II regulation. These forecasts provide the City with a more robust understanding of future emissions to assist with the prioritization of emissions reduction measures developed to meet GHG targets. Table 3 below shows the results of the legislative-adjusted BAU forecast for Newark over several horizon years, comparing the results with the 2022 inventory.

Table 3

Sector	2022	2030	2035	2040	2045
On-Road Transportation	206,749	169,383	127,204	76,829	49,144
Building Energy	147,607	112,281	91,175	72,793	59,194
Off-Road Vehicles and Equipment	10,974	9,720	9,617	9,982	10,403
Solid Waste	10,255	12,921	13,721	14,521	15,321
Water Supply	1,188	860	651	412	0
Wastewater Treatment	552	611	649	685	694
Total	377,325	308,801	245,114	176,412	135,078
Percent Change from 2022 Levels	NA	-18%	-35%	-53%	-64%

Figure 1 depicts the BAU and legislative-adjusted BAU forecasts, showing the impact of state, federal, and regional legislation on the City's GHG emissions profile over time.

Figure 1



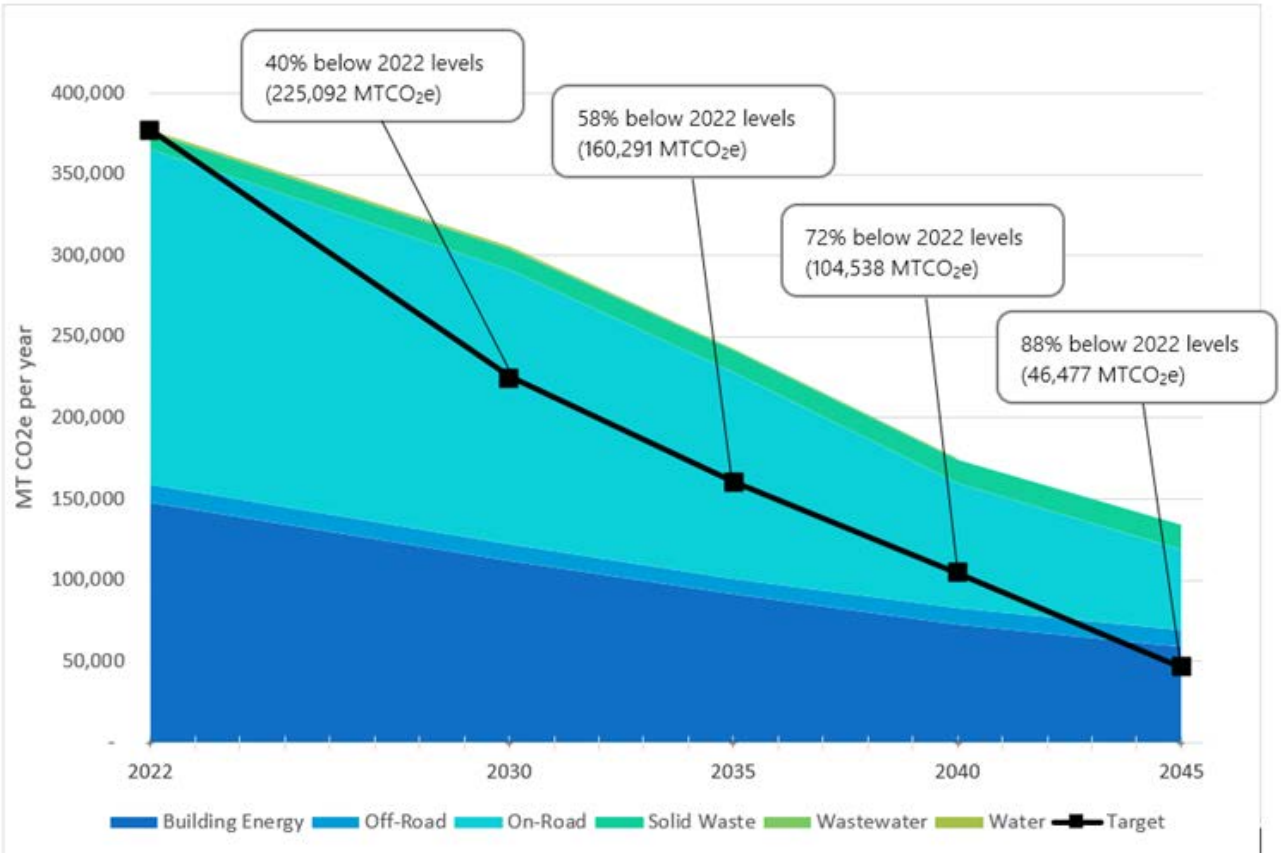
GHG Emissions Reduction Targets

As mentioned above, the City aims to reduce GHG emissions in proportion to the State's targets. Newark's GHG reduction targets were developed relative to the 2022 emissions inventory. Based on the sectors relevant to the City's inventory, Newark's GHG reduction targets are as follows:

- 2030 target: 40 percent below 2022 levels (225,092 MTCO2e),
- 2035 target: 58 percent below 2022 levels (160,291 MTCO2e),
- 2040 target: 72 percent below 2022 levels (104,538 MTCO2e), and
- 2045 target: 88 percent below 2022 levels (46,477 MTCO2e).

Figure 2 depicts the legislative-adjusted BAU forecasts by sector, as distinguished by colored wedges, and the City's emissions reduction targets relative to the 2022 emissions inventory. The space between the trajectory of the black line (i.e., targets) and the top of the colored wedges (i.e., forecasted emissions) represents the "gap" in emissions that will need to be addressed through local actions for the City to meet its GHG reduction targets.

Figure 2



The next steps to develop CAN includes hosting a community meeting on September 25th and preparing strategies and actions that can close the gap between the City's legislative-adjusted forecast and reduction targets.

FISCAL IMPACT

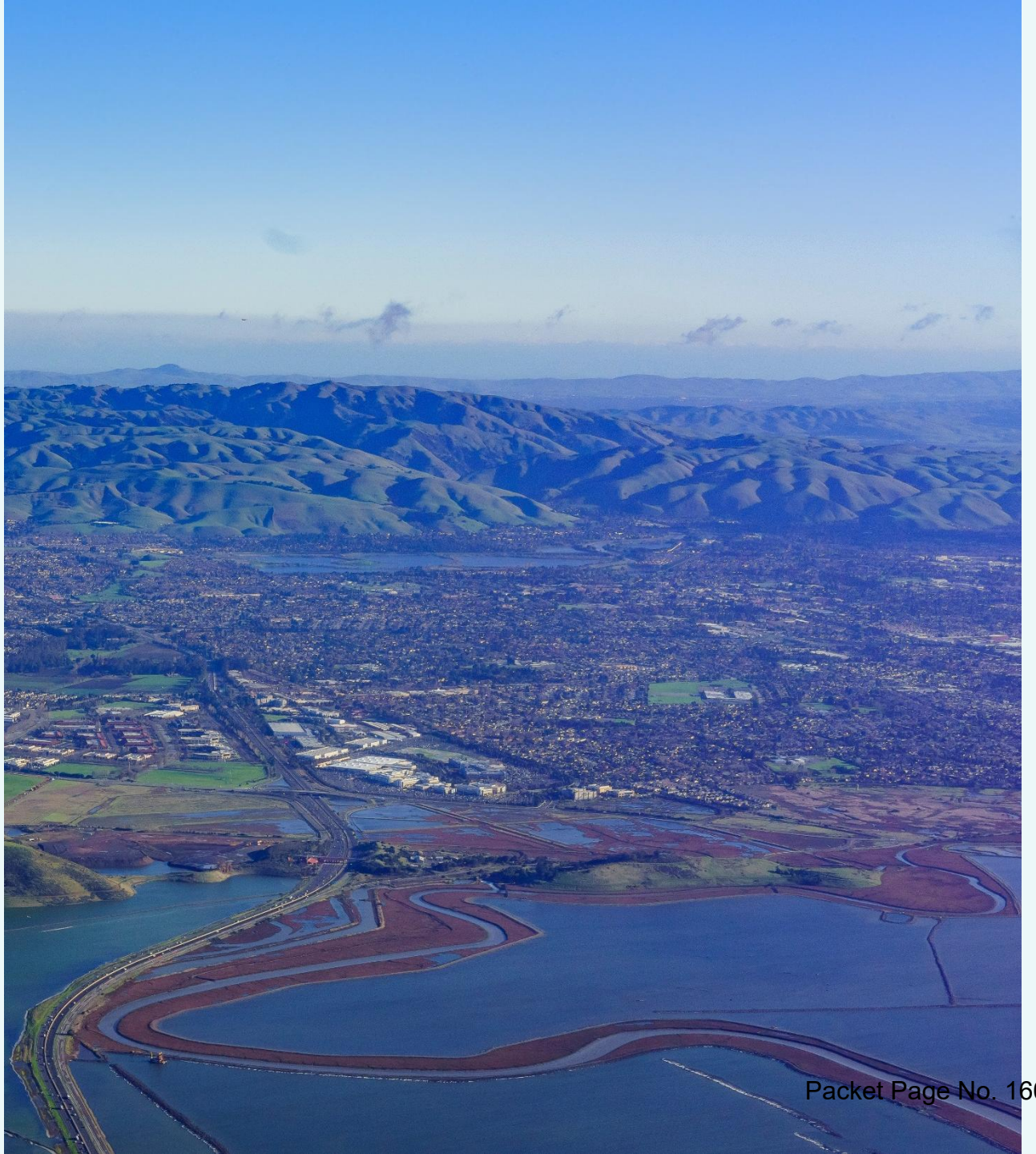
The Climate Action Plan update is funded with an allocation of $197,000 from the Development Maintenance Impact Fee funds.

REVIEW AND APPROVAL

Prepared by - James Scanlin, Environmental Services Manager
Reviewed by - Howard Young, Public Works Director
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

CAP presentation



We CAN
Climate Action Newark

Climate Action Plan Update

Presented to Newark City Council

September 12, 2024

NEWARK
california

Project Overview

Objectives, Principles, Schedule

Project Overview and Objectives

- Comprehensively update Newark's 2010 CAP
- Align with State GHG reduction targets
- Address climate mitigation and adaptation



- Build upon ongoing City initiatives
- Provide CEQA streamlining benefits
- Engage the community
- Provide implementation direction to staff

Guiding Principles & Co-Benefits

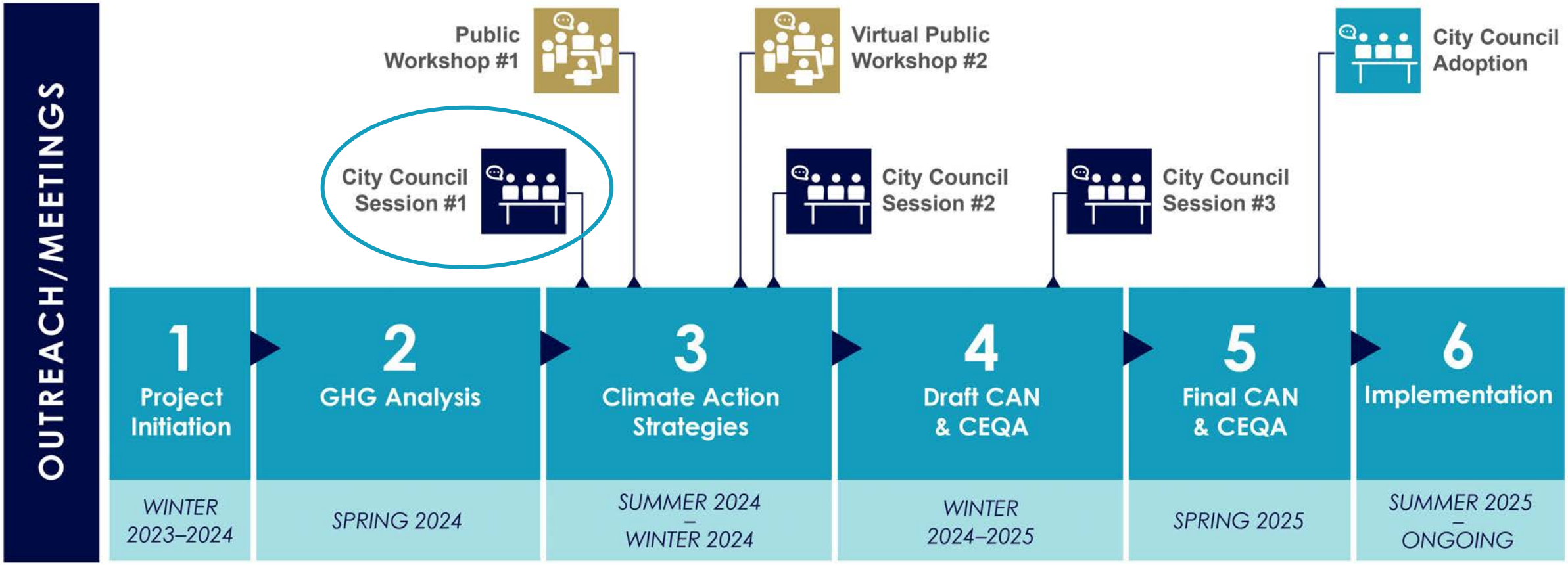
Guiding Principles

- Ambitious
- Realistic
- Collaborative
- Comprehensive
- Fair
- Beneficial
- Specific
- Evidence-based
- Transparent

Co-Benefits

- Improved public health
- Community cost savings
- Environmental quality
- Economic development
- Equity
- Adaptation/ resilience
- Resource conservation

Project Schedule



Climate Mitigation

Reducing greenhouse gas emissions

Addressing Climate Change Locally



Climate change ***mitigation*** seeks to reduce the flow of GHGs into the atmosphere through reducing GHG emissions and expanding carbon sinks.

Communities emit GHGs into the atmosphere. These heat-trapping gases cause global temperatures to rise.

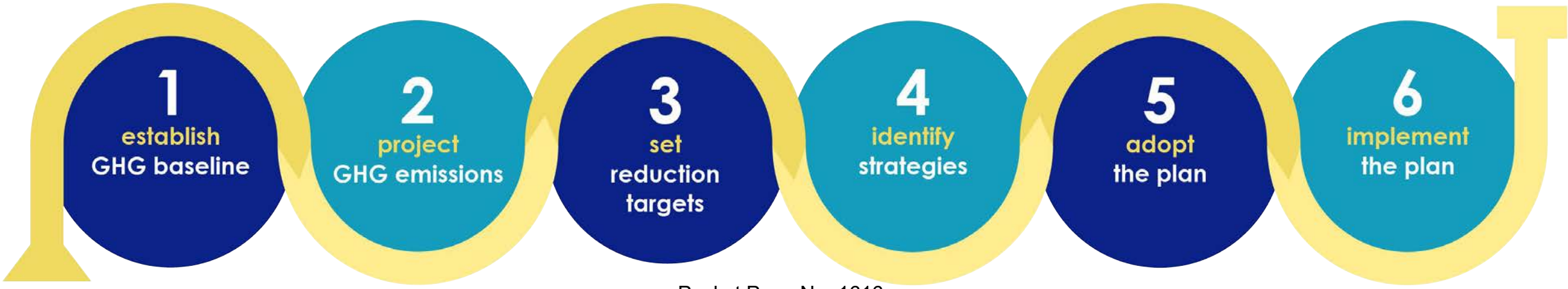
Rising global temperatures impact local climates (e.g., temperature and precipitation) and influence sea-level rise, which may impact communities

Climate change ***adaptation*** seeks to address the impacts of climate change on communities.



Climate Mitigation Process

- 2022 communitywide inventory
- Emissions forecasts through 2045
- Newark-specific reduction targets in alignment with State-adopted targets
- New strategies and actions to reduce emissions and achieve targets



Newark's 2005 and 2022 Inventories

Emissions Sector	2005 Emissions ($MTCO_2e$)	2022 Emissions ($MTCO_2e$)	Percent Change (2005-2022)
Residential Buildings	**47,313**	**45,530**	**-4%**
Commercial Buildings	**175,096**	**101,646**	**-42%**
Transportation	**192,841**	**206,749**	**+7%**
Waste	**18,607**	**10,974**	**-41%**
Total	**433,857**	**364,899***	**-16%**

*2022 Emissions Total presented here is not the 2022 emissions total used for the CAP update. This table compares 2022 sectors that were also included in the 2005 inventory. The 2022 inventory more comprehensively accounts for emissions in the city.

Newark's 2022 Comprehensive Inventory and Forecasts

Includes:

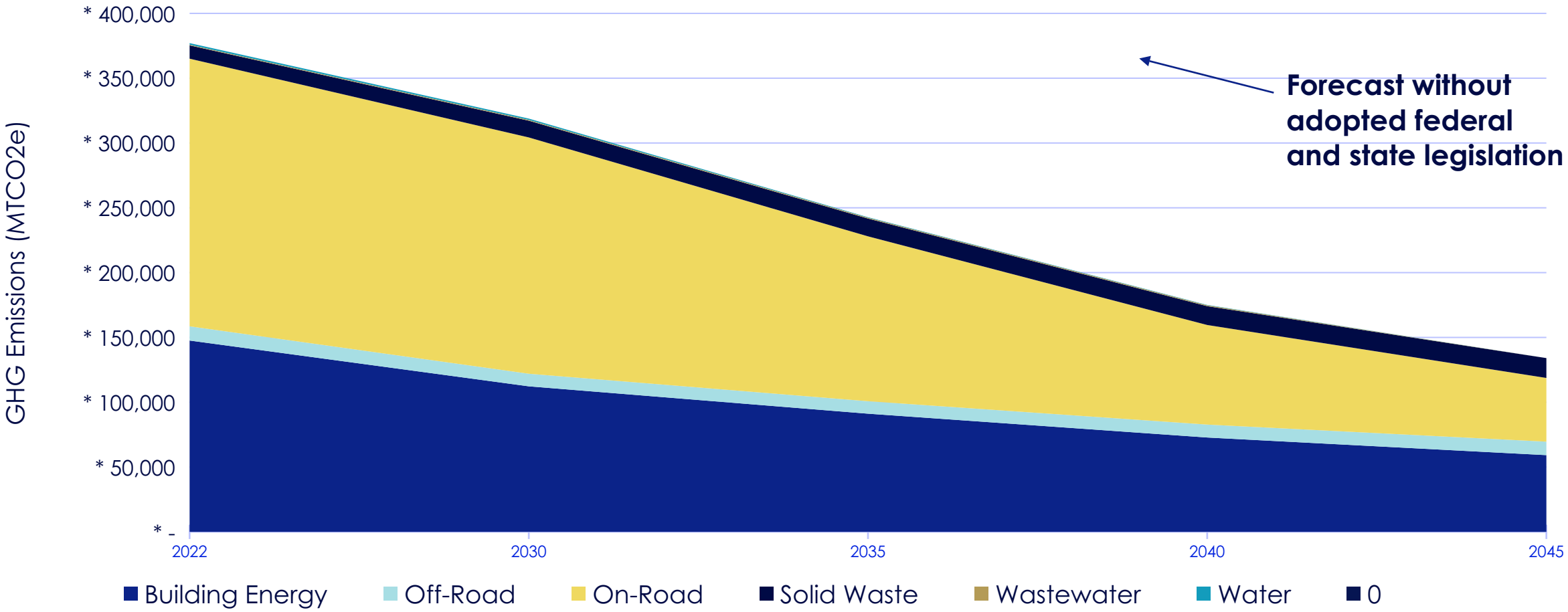
- **population, employment, housing growth**
- **known legislative effects**

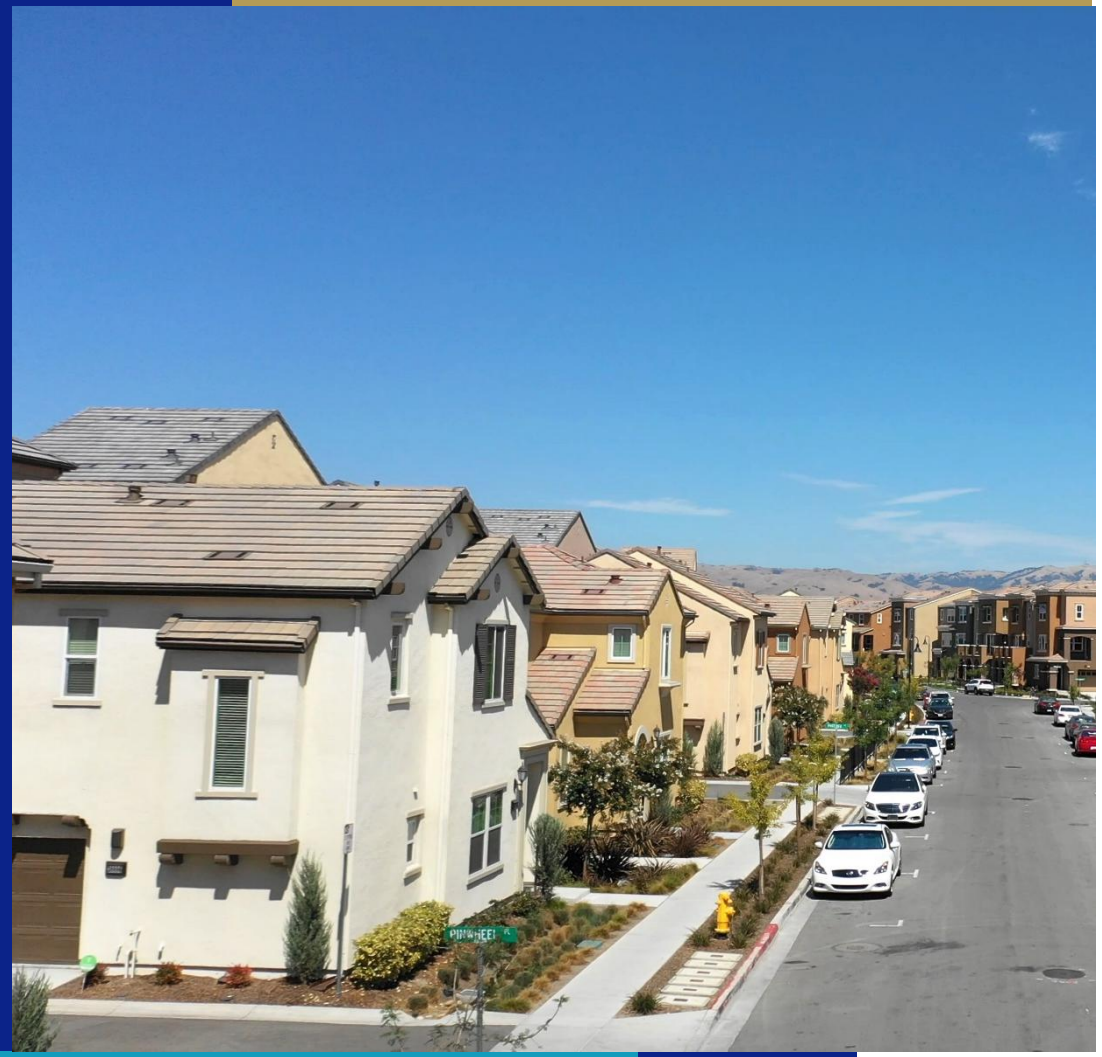
Legislative-Adjusted Forecast:

*Emissions **without** additional action taken in Newark by residents, businesses, or City*

Emissions Sector	2022 Emissions ($MTCO_2e$)	2030 Emissions ($MTCO_2e$)	2045 Emissions ($MTCO_2e$)
On-Road Transportation	206,749	169,383	49,144
Building Energy	147,607	112,281	59,194
Off-Road Vehicles/Equipment	10,974	9,720	10,403
Waste	10,255	12,921	15,321
Water	1,188	860	0
Wastewater Treatment	552	611	694
Total	377,325	308,801	135,078
Percent Change from 2022	NA	-18%	-64%

Effect of Federal & State Legislation on Newark's Emissions



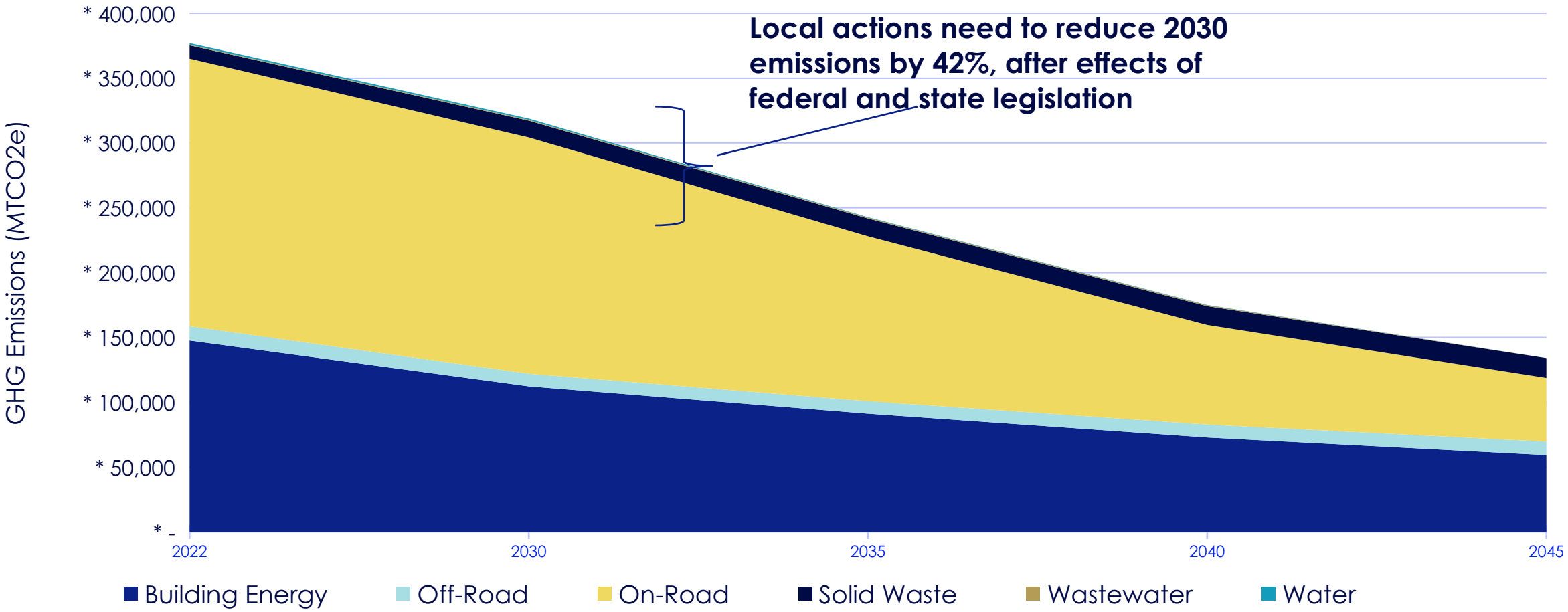


GHG Reduction Targets

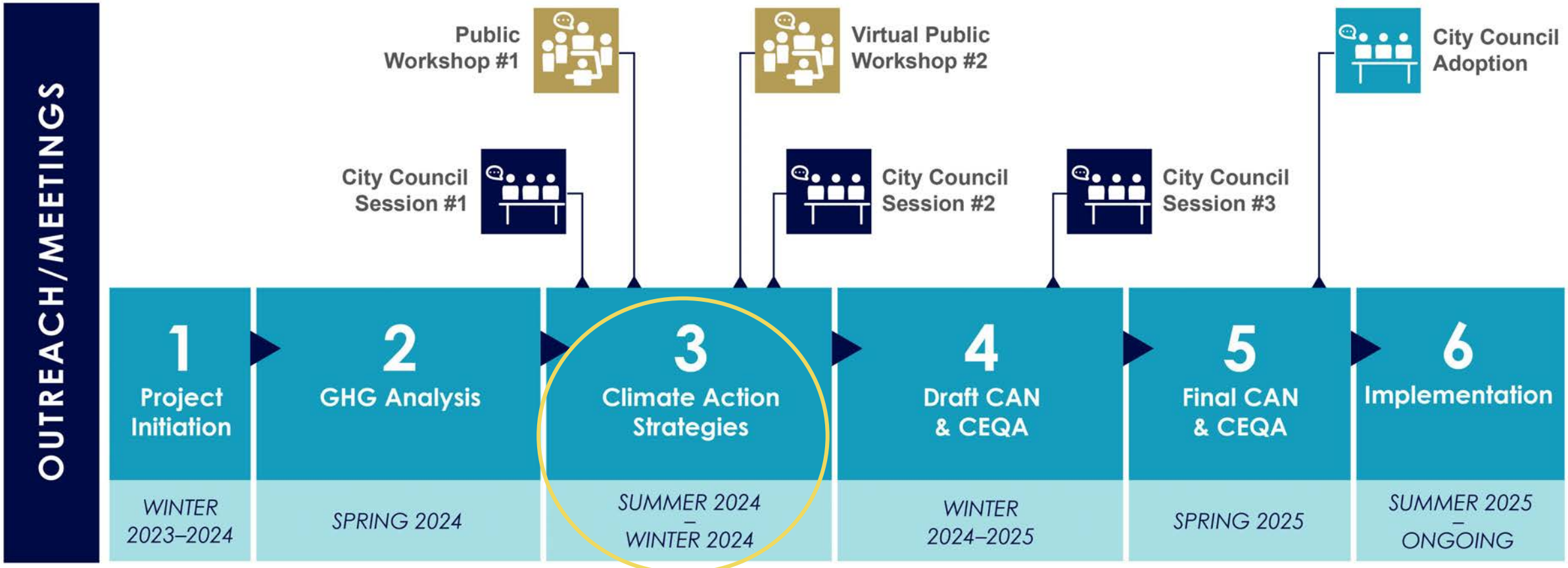
Newark's fair share of statewide targets, based on 2022 GHG inventory

- **2030: 40% below 2022 levels**
- **2035: 58% below 2022 levels**
- **2040: 72% below 2022 levels**
- **2045: 88% below 2022 levels**

Closing the Emissions "Gap"

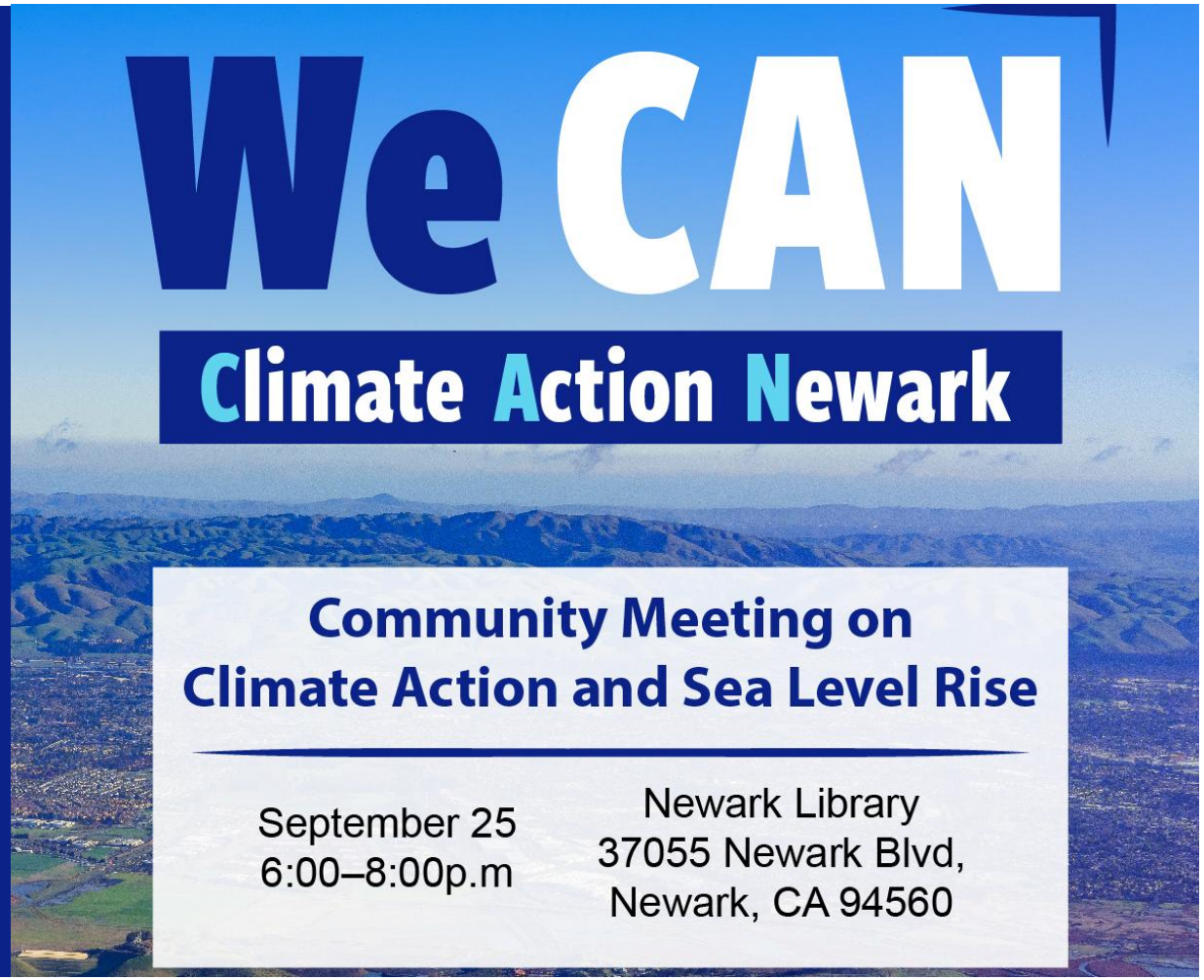


Project Schedule



Next Steps

- Staff continue to develop and refine climate action strategies
- Staff are aligning CAP update with sea level rise project
- Upcoming engagement with residents and businesses
- Draft strategies and actions to be presented to City Council




Thank You

STAFF REPORT

Item F. 5.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Lenka Hovorka, Assistant City Manager
SUBJECT	Introduction of an Ordinance amending Chapter 2.09 of the Newark Municipal Code ("City Councilmembers-Compensation") to increase the salaries of City Councilmembers and Mayor.

SUMMARY AND RECOMMENDATION

On June 27, 2024, City Council approved the 2024-2026 Biennial Budget and Capital Improvement Plan which included a six percent increase for the Mayor and Councilmembers. Staff recommends that the City Council waive full reading and, by title only, introduce an ordinance amending Chapter 2.09 of the Newark Municipal Code ("City Councilmembers-Compensation") to increase the salaries of City Councilmembers and Mayor by six percent (6%).

BACKGROUND

The salaries and benefits for the Mayor and City Councilmembers are set by City ordinance. The current monthly salaries are $2,999 for the Mayor and $1,371 for each Councilmember. City Council salaries were last increased on January 1, 2023, by ten percent (10%).

Chapter 2.09 of the Newark Municipal Code requires that the City Council, as part of the two-year biennial budget cycle, review its compensation and consider increases in the Consumer Price Index for the region and increases in compensation awarded to staff since the previous adjustment to City Council compensation.

DISCUSSION/ANALYSIS

During the presentation of the draft 2024-2026 Biennial Budget to the City Council on May 23, 2024, staff reported the combined annual increases for 2023 and 2024 in the Consumer Price Index totaled seven and seven-tenths percent (7.7%). Staff compensation increased six percent (6%) over the same two-year period. The cost of a 6% salary increase to the total compensation for the Mayor and City Councilmembers is $12,073.64 for the period of January 1, 2025 to June 30, 2026. After presentation of this information, City Council directed staff to include a six percent (6%) salary increase for the Mayor and Councilmembers in the final 2024-2026 Biennial Budget and Capital Improvement Plan.

To effect the salary increases, Chapter 2.09 of the Newark Municipal Code must be amended. A draft ordinance has been prepared that would, starting January 1, 2025, increase the monthly salary of Councilmembers from $1,371 to $1,453. The Mayor's monthly salary would increase from $2,999 to $3,179. There are no other proposed revisions.

FISCAL IMPACT

There is no fiscal impact associated with this action, as the six percent salary increase was included in the 2024-2026 Biennial Budget approved by City Council on June 27, 2024.

REVIEW AND APPROVAL

Prepared by - Lenka Hovorka, Assistant City Manager
Reviewed by - Krysten Lee, Finance Director
Reviewed by - Kristopher J. Kokotaylo, City Attorney
Approved by - David J. Benoun, City Manager

Attachments

Council Compensation Ordinance

ORDINANCE NO.

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF NEWARK AMENDING CHAPTER 2.09, CITY COUNCILMEMBERS - COMPENSATION, OF THE NEWARK MUNICIPAL CODE TO INCREASE THE SALARIES OF CITY COUNCILMEMBERS AND MAYOR BY SIX PERCENT (6%)

WHEREAS, Chapter 2.09 ("City Councilmembers - Compensation") of the Newark Municipal Code provides for the payment of salaries and benefits to Newark City Councilmembers and the Mayor; and

WHEREAS, Section 2.09.010 authorizes the City to pay Councilmembers a salary of one thousand three hundred seventy-one dollars ($1,371) per month; and

WHEREAS, said section authorizes the City to pay the Mayor a salary of two thousand nine hundred ninety-nine dollars ($2,999) per month; and

WHEREAS, said salaries took effect January 1, 2023; and

WHEREAS, City Councilmembers and Mayor have not received an increase in salary since January 1, 2023; and

WHEREAS, the City Council is authorized by Government Code Section 36516 to increase the salary of Councilmembers in an amount not to exceed five percent (5%) per calendar year from the operative date of the last adjustment of salary; and

WHEREAS, the City Council is authorized by Government Code Section 36516.1 to pay an elected Mayor salary in excess to that which they receive as a Councilmember; and

WHEREAS, at the City Council meeting held on May 23, 2024, City staff presented to the Council regarding the Mayoral and City Council Member salary and benefits; and

WHEREAS, at the City Council meeting held on June 27, 2024, City Council adopted the 2024-2026 Biennial Budget and Capital Improvement Plan which included six percent (6%) salary increases for the Mayor and City Council Members; and

WHEREAS, the City Council desires to increase salaries of the Council Members and Mayor by six percent (6%) starting January 1, 2025.

NOW, THEREFORE, the City Council of the City of Newark does hereby ordain as follows:

SECTION 1. **Recitals.** The above recitals are true and correct and made a part of this Ordinance.

SECTION 2. **Amendment of Section 2.09.010 the Newark Municipal Code.** Subsections (A)

and (B) of Section 2.09.010 ("Salary") of Chapter 2.09 ("City Council") of Title 2 ("Administration and Personnel") are hereby amended as follows (replacements in double underline; deletions in ~~strikethrough~~):

2.09.010 Salary.

A. Pursuant to Government Code Sections 36516 and 36516.5, each councilmember, other than the mayor, shall receive a salary of ~~one thousand three hundred seventy-one dollars~~ one thousand four hundred fifty-three dollars per month commencing ~~January 1, 2023~~ January 1, 2025.

B. Pursuant to Government Code Section 36516.1, the elective mayor shall receive compensation in the amount of ~~two thousand nine hundred ninety-nine dollars~~ three thousand one hundred seventy-nine dollars per month commencing ~~January 1, 2023~~ January 1, 2025.

SECTION 3. Severability. If any provision of this Ordinance or the application thereof to any person or circumstance is held invalid, the remainder of the Ordinance, including the application of such part or provision to other persons or circumstances shall not be affected thereby and shall continue in full force and effect. To this end, provisions of this Ordinance are severable. The City Council hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause, or phrase hereof irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses, or phrases be held unconstitutional, invalid, or unenforceable.

SECTION 4. CEQA. Approval of the ordinance is exempt from further environmental review under the general rule in California Environmental Quality Act (CEQA) Guidelines Section 15061(b)(3) that CEQA only applies to projects that have the potential for causing a significant effect on the environment. As a series of text amendments and additions that do not authorize any new activity, it can be seen with certainty that there is no possibility that the ordinance will have a significant effect on the environment.

SECTION 5. Publication and Effective Date. In accordance with Government Code section 36516.5, this ordinance shall take effect January 1, 2025. Before expiration of fifteen (15) days after its passage, this ordinance shall be published in the Tri-City Voice, a newspaper of general circulation published and printed in the County of Alameda and circulated in the City of Newark.

STAFF REPORT

Item I. 1.

DATE	09/12/2024
TO	Honorable Mayor and City Council Members
FROM	Steven Turner, Community Development Director
SUBJECT	Conference with Real Property Negotiators (Pursuant to Government Code Section 54956.8) Property: Stevenson Boulevard, Newark, CA 94560. APNs: 537-850-7-1, 537-850-8, 537-850-10, 537-850-11-3 City Negotiators: David Benoun, Steven Turner and Craig Bettencourt Negotiating Parties: Seamus O'Connor and David Bider Under Negotiation: Review of Price and Terms