



# **GARLAND**

## **AGENDA**

**CITY COUNCIL WORK SESSION  
City of Garland  
Work Session Room, City Hall  
William E. Dollar Municipal Building  
200 North Fifth Street  
Garland, Texas  
Monday, January 9, 2023  
6:00 p.m.**

### **DEFINITIONS:**

**Written Briefing:** Items that generally do not require a presentation or discussion by the staff or Council. On these items the staff is seeking direction from the Council or providing information in a written format.

**Verbal Briefing:** These items do not require written background information or are an update on items previously discussed by the Council.

**NOTICE:** The City Council may recess from the open session and convene in a closed executive session if the discussion of any of the listed agenda items concerns one or more of the following matters:

- (1) Pending/contemplated litigation, settlement offer(s), and matters concerning privileged and unprivileged client information deemed confidential by Rule 1.05 of the Texas Disciplinary Rules of Professional Conduct. Sec. 551.071, Tex. Gov't Code.
- (2) The purchase, exchange, lease or value of real property, if the deliberation in an open meeting would have a detrimental effect on the position of the City in negotiations with a third person. Sec. 551.072, Tex. Gov't Code.
- (3) A contract for a prospective gift or donation to the City, if the deliberation in an open meeting would have a detrimental effect on the position of the City in negotiations with a third person. Sec. 551.073, Tex. Gov't Code.
- (4) Personnel matters involving the appointment, employment, evaluation, reassignment, duties, discipline or dismissal of a public officer or employee or to hear a complaint against an officer or employee. Sec. 551.074, Tex. Gov't Code.
- (5) The deployment, or specific occasions for implementation of security personnel or devices. Sec. 551.076, Tex. Gov't Code.
- (6) Discussions or deliberations regarding commercial or financial information that the City has received from a business prospect that the City seeks to have locate, stay, or expand in or near the territory of the City and with which the City is conducting economic development negotiations; or to deliberate the offer of a financial or other incentive to a business prospect of the sort described in this provision. Sec. 551.087, Tex. Gov't Code.
- (7) Discussions, deliberations, votes, or other final action on matters related to the City's competitive activity, including information that would, if disclosed, give advantage to competitors or prospective competitors and is reasonably related to one or more of the following categories of information:
  - generation unit specific and portfolio fixed and variable costs, including forecasts of those costs, capital improvement plans for generation units, and generation unit operating characteristics and outage scheduling;
  - bidding and pricing information for purchased power, generation and fuel, and Electric Reliability Council of Texas bids, prices, offers, and related services and strategies;
  - effective fuel and purchased power agreements and fuel transportation arrangements and contracts;
  - risk management information, contracts, and strategies, including fuel hedging and storage;
  - plans, studies, proposals, and analyses for system improvements, additions, or sales, other than transmission and distribution system improvements inside the service area for which the public power utility is the sole certificated retail provider; and
  - customer billing, contract, and usage information, electric power pricing information, system load characteristics, and electric power marketing analyses and strategies. Sec. 551.086; Tex. Gov't Code; Sec. 552.133, Tex. Gov't Code]

**1. Public Comments on Work Session Items**

*Persons who desire to address the City Council on any item on the Work Session agenda are allowed three minutes to speak. Speakers are taken only at the beginning of the meeting, other than invited testimony.*

*Speakers are grouped by Work Session item and will be taken in the order of the Work Session agenda. Speakers must submit to the City Secretary a completed speaker's card before the beginning of the meeting. Speaker cards will not be accepted after the Mayor calls the meeting to order. Speaker cards are available in the lobby, at the visitor's side of the Work Session Room, and from members of staff.*

*Speakers are limited to addressing items on the Work Session agenda – any item relating to a Regular Session agenda item should be addressed at the Regular Session and any item not on an agenda may be addressed during the open microphone at the end of the Regular Session.*

**2. Consider the Consent Agenda**

*A member of the City Council may ask for discussion or further information on an item posted as a consent agenda item on the next Regular Meeting of the City Council. The Council Member may also ask that an item on the posted consent agenda be pulled from the consent agenda and considered for a vote separate from consent agenda items on the regular agenda. All discussions or deliberations on this portion of the work session agenda are limited to posted agenda items and may not include a new or unposted subject matter.*

**3. Written Briefings:**

**a. 2023 Proposed Capital Improvement Program (CIP)**

*Staff is delivering to Council the 2023 Proposed Capital Improvement Program document in advance of the formal presentation and subsequent review. No action is requested at this time.*

**b. Purdue Drive Parking Restrictions**

*Council is requested to restrict parking at all times on both sides of Purdue Drive between Walnut Street and Princeton Drive. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.*

**c. Greenbelt Parkway Parking Restrictions**

*Council is requested to restrict parking at all times on Greenbelt Parkway between Duck Creek Drive and IH 30. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.*

**d. Neighborhood Vitality Matching Grant Fall 2022 Applications**

*Staff seeks approval of the applications as recommended by the Community Services Committee. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.*

**e. Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor and Dallas County Juvenile Case Management System**

*Council is requested to authorize the Mayor to execute and Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor and an Amendment to the Memorandum of Understanding to participate in the Dallas County Juvenile Case Management System. This item will be scheduled for formal consideration at the January 10, 2023 Regular Meeting.*

**f. Hazard Mitigation Action Plan Adoption Resolution**

*Council is requested to adopt the Hazard Mitigation Plan that was developed to implement hazard mitigation activities that will result in a more sustainable community by saving lives and properties from disaster situations. This plan will also allow the City to become eligible for grant-funded mitigation projects that are not currently available. This item is scheduled for formal consideration at the January 10, 2023 Regular Meeting.*

**g. 2022 Homeland Security Grant Program Application Resolution**

*Council is requested to approve a resolution to support the 2022 Homeland Security Grant Program (HSGP) application to gain access to grant funding. The resolution will allow the City to acquire funding to help support and improve public safety response and recovery capabilities. This item will be scheduled for formal consideration at the January 10, 2023 Regular Meeting.*

**h. Optional Redemption of Tax Notes**

*Council is requested to call the Tax Notes, Series 2022 on February 15, 2023. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.*

**4. Verbal Briefings:**

**a. Development Services Committee Report**

*Council Member Dylan Hedrick, Chair of the Development Services Committee, will report on the following items:*

- 1. Review of GDC Tree Mitigation Requirements*
- 2. Consider Changes to Zoning Rules regarding Pet Retail Stores*
- 3. Review Requirements for EV Charging Spaces and Parking Requirements*

**b. Audit Committee Report**

*Council Member Robert John Smith, Chair of the Internal Audit Committee, will provide a committee report on the following items:*

- Alarm Permitting Program Audit*
- Take-Home Vehicles Audit*
- FY/2023 Audit Plan*

**c. Las Brisas Small Area Plan**

*The Neighborhood Vitality Department and the City's consultant, Kimley-Horn will present Council with options for the future redevelopment of the former Las Brisas site.*

**5. Discuss Appointments to Boards and Commissions**

**Council Member Margaret Lucht**

- Paola Sanchez - Community Multicultural Commission*

**6. Announce Future Agenda Items**

*A member of the City Council, with a second by another member, or the Mayor alone, may ask that an item be placed on a future agenda of the City Council or a committee of the City Council. No substantive discussion of that item will take place at this time.*

7. Council will move into Executive Session

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**EXECUTIVE SESSION  
AGENDA**

**NOTICE:** The City Council may recess from the open session and convene in a closed executive session if the discussion of any of the listed agenda items concerns one or more of the following matters:

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**The City Council will adjourn into executive session pursuant to Sections 551.074, 551.072 and 551.071, of the Texas Government Code to deliberate or discuss:**

- 1. The purchase, exchange, lease or value of several tracts of real property for economic development purposes, located in various places within the City (551.072) and attorney/client matters concerning privileged and unprivileged client information related to the same (551.071).**
- 2. Attorney/client matters concerning privileged and unprivileged client information related to the terms and conditions of an Interlocal Agreement (551.071).**
- 3. Personnel matters related to the terms and conditions of employment agreements of the Municipal Court Judge, Associate Municipal Court Judge, City Auditor, new City Manager, City Manager Emeritus, and City Attorney and to conduct the annual review of Associate Municipal Judge Natalie Banuelos (551.074).**

8. Adjourn



**GARLAND**  
**CITY COUNCIL ITEM SUMMARY SHEET**

**City Council Work Session Agenda**

**3. a.**

**Meeting Date:** January 9, 2023

**Item Title:** 2023 Proposed Capital Improvement Program (CIP)

**Submitted By:** Allyson Bell Steadman, Budget Director

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**Summary of Request/Problem**

Delivery of the 2023 Proposed Capital Improvement Program (CIP) document to the City Council in advance of the formal presentation and subsequent review.

On Tuesday, January 17, 2023, the City Manager will formally present the 2023 Proposed CIP and Staff will provide an overview of the 2023 Proposed CIP at the City Council Work Session.

**Schedule for Review and Approval:**

Jan. 10	Tues.	2023 Proposed CIP Document Available for Public Review
Jan. 17	Tues.	City Manager Presentation of 2023 Proposed CIP to City Council & Overview of 2023 Proposed CIP Presentation - 5:30 PM
Jan. 21	Sat.	Special Work Session - CIP Presentations - 8:30 AM
Jan. 24	Tues.	Public Hearing on 2023 Proposed CIP & Special Work Session - Council Discussion - 6:00 PM
Jan. 31	Tues.	Special Work Session - Council Discussion - 6:00 PM <i>(If Requested)</i>
Feb. 6	Mon.	Work Session - Deliberations - 6:00 PM
Feb. 7	Tues.	Public Hearing and Adoption of 2023 CIP - 7:00 PM

As shown in the schedule above, Special Budget Work Sessions for review of the proposed capital plan will take place on Saturday, January 21, 2023, at 8:30 A.M., Tuesday, January 24, 2023, at 6:00 P.M., and, if requested by City Council, on Tuesday, January 31, 2023, at 6:00 P.M. Review of the proposed capital plan will continue at the City Council Work Session on Monday, February 6, 2023. Public Hearings on the CIP will be held on Tuesday, January 24, 2023, at 6:00 P.M. and Tuesday, February 7, 2023, at 7:00 P.M., with the final adoption proposed to take place on February 7, 2023.

**Recommendation/Action Requested and Justification**

Information only.





## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. b.

**Meeting Date:** January 9, 2023  
**Item Title:** Purdue Drive Parking Restrictions  
**Submitted By:** Paul Luedtke, Transportation Director  
**Strategic Focus Areas:** Well-Maintained City Infrastructure  
Safe Community  
Vibrant Neighborhoods and Commercial Centers

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### ISSUE

Overflow parking from the adjacent apartment complex is intruding on available parking. Restrictions have been requested to ensure access to neighborhood is not impeded.

### RECOMMENDATION

Restrict parking at all times on both sides of Purdue Drive between Walnut Street and Princeton Drive. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.

### BACKGROUND

- Residents from the Gardens on Walnut apartments are parking along Purdue Drive and impeding traffic accessing the neighborhood to the north and east.
- Purdue Drive is a 27-foot-wide residential street.
- Purdue Drive serves as a collector street used by neighborhoods on the north and east to access Walnut Street.

### CONSIDERATION

- Vehicles currently parked on Purdue could be parked further into the adjacent neighborhoods.
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## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. c.

**Meeting Date:** January 9, 2023  
**Item Title:** Greenbelt Parkway Parking Restrictions  
**Submitted By:** Paul Luedtke, Transportation Director  
**Strategic Focus Areas:** Well-Maintained City Infrastructure  
Safe Community  
Vibrant Neighborhoods and Commercial Centers

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### ISSUE

Parking on Greenbelt Parkway could create a hazard as there is only one lane in each direction. Council is requested to consider restricting parking at all times between Duck Creek and IH 30.

### RECOMMENDATION

Restrict parking at all times on Greenbelt Parkway between Duck Creek Drive and IH 30. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.

### BACKGROUND

- Greenbelt Parkway is a 40 foot wide street with one lane in each direction and a center two way left turn lane.
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**GARLAND  
CITY COUNCIL ITEM SUMMARY SHEET**

**City Council Work Session Agenda**

**3. d.**

**Meeting Date:** January 9, 2023

**Item Title:** Neighborhood Vitality Matching Grant Fall 2022 Applications

**Submitted By:** Laura De La Vega, Sr. Planner

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**Summary of Request/Problem**

The Community Services Committee recommends approval for applications from Firewheel Estates and Heron's Bay, as submitted.

**Recommendation/Action Requested and Justification**

Request approval of the applications as recommended by the Community Services Committee. Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting. Staff has reviewed the applications to ensure compliance with the program guidelines. Issues identified during the review process are indicated on the project summary sheets.

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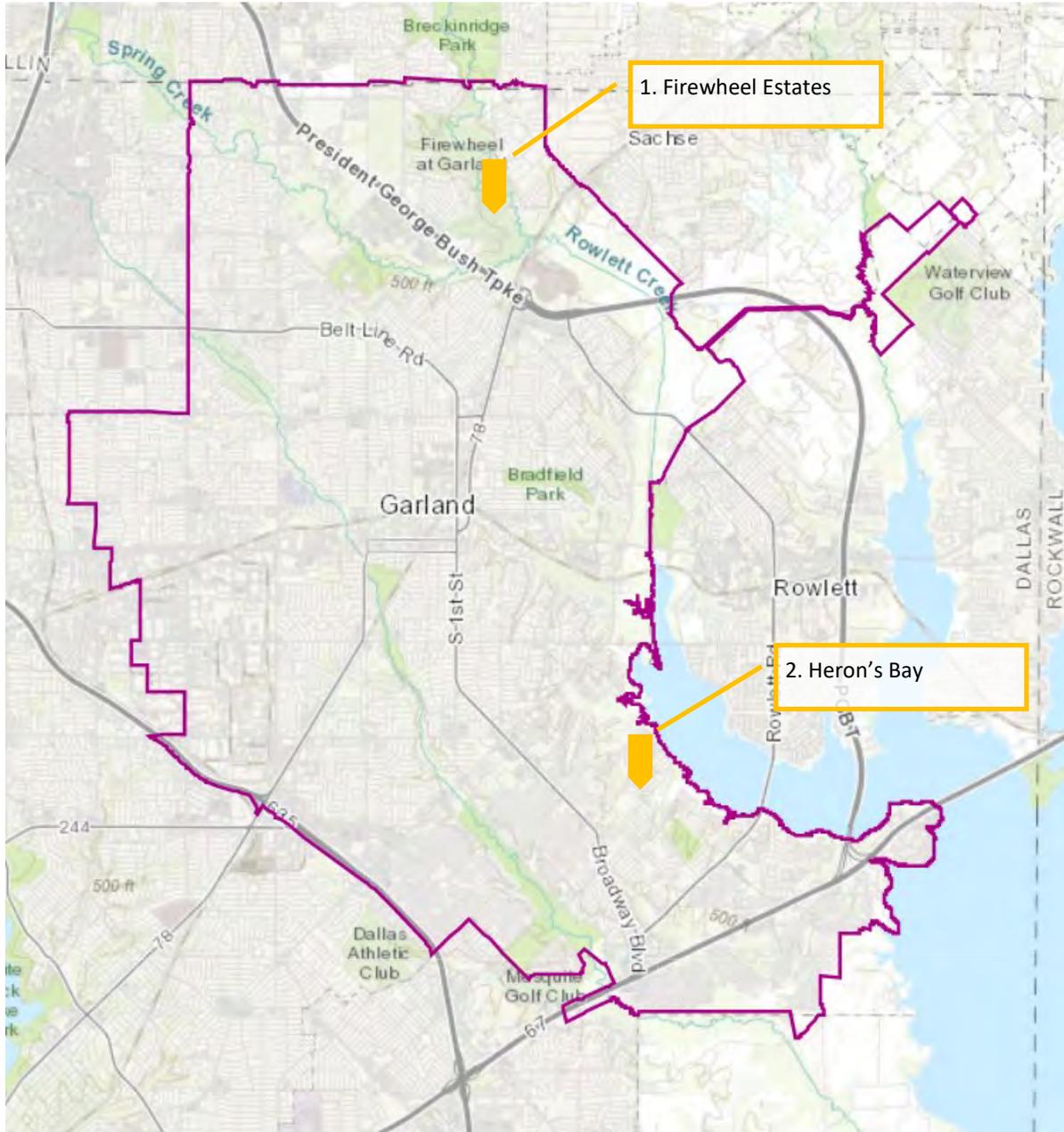
**Attachments**

2022 Fall NVMG Projects

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# NEIGHBORHOOD VITALITY MATCHING GRANT

## Proposed Project Locations for Fall 2022



# NEIGHBORHOOD VITALITY MATCHING GRANT

## PROJECT SUMMARY

**Neighborhood Association:** Firewheel Estates HOA

**Project Name:** Median Enhancement Project

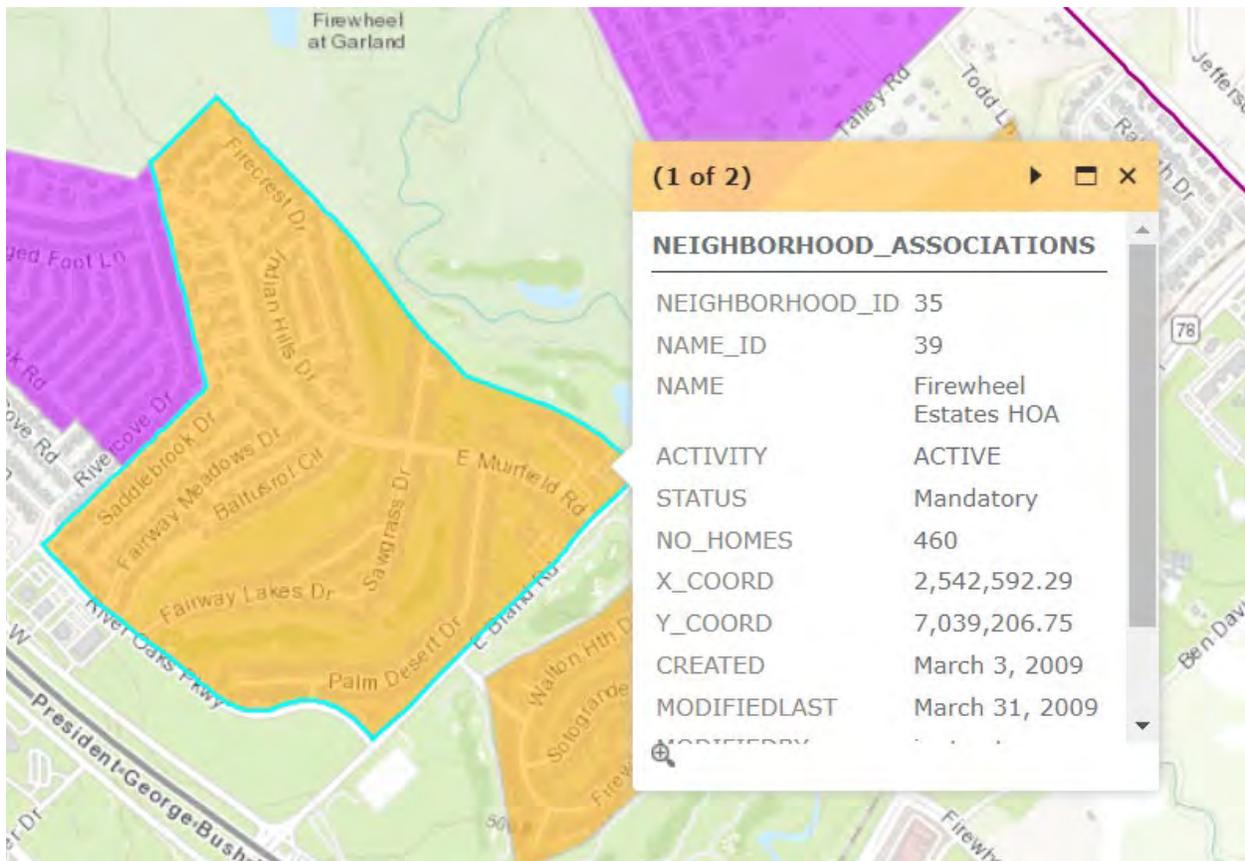
**Project Location:** Muirfield Median from Fall Creek Ct. to Palm Desert Dr.

<b>Total Project Cost:</b>	<b>\$119,953</b>
<b>Requesting Amount:</b>	<b>\$89,965</b>
<b>Neighborhood Match</b>	<b>\$29,988</b>
<b>Match Percentage:</b>	<b>25%</b>

### Project Summary:

- Enhance median by installing hardscaping with a variety of river rock, boulders and other materials.

### Maps & Current status of area:





**Proposed Project Area Map & Photos:**





### **Staff Comments**

#### **Office of Neighborhood Vitality:**

- Common area or recreational improvements (new construction) are eligible projects under the matching grant program.
- As of August 2, 2021 City Council voted for that softscape is now an ineligible project in this program. Hardscaping is eligible.

#### **Engineering:**

- The median is within the public Right of Way. There is a public wastewater main running under the majority of the median and there may be other utilities within the median in this area.
- Any landscaping improvements within the public Right of Way area would require a License Agreement from the Engineering Department since we do not have one on file. This can be done at the time of permitting.
- Large trees cannot be placed on top of our public utility lines.
- Do not install any objects that penetrate the ground more than 36-inches to avoid any damage to the wastewater main.

- Texas811 should be called to locate the wastewater main and any other utility lines in the median prior to construction.

**Building Inspections:**

- If installing irrigation, a permit is required.

## NEIGHBORHOOD VITALITY MATCHING GRANT PROJECT SUMMARY

**Neighborhood Association:** Heron’s Bay Estates HOA

**Project Name:** Sanderling Dr. Lighting Enhancement

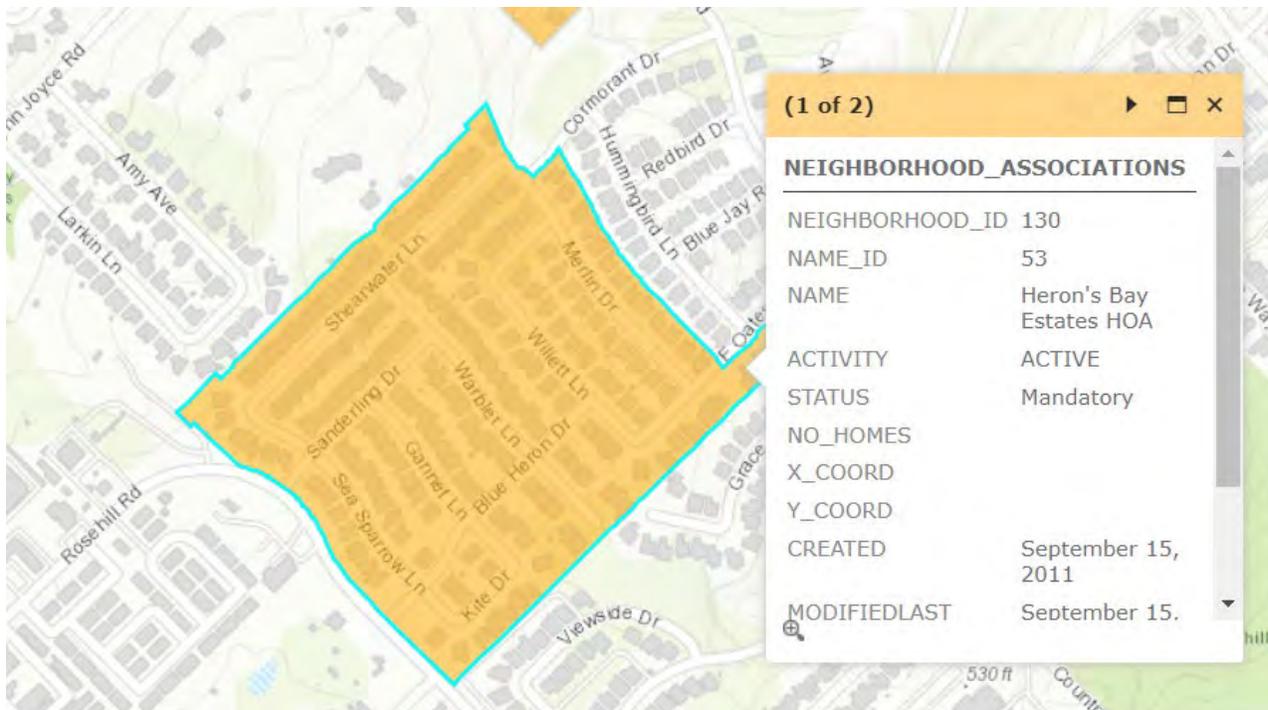
**Project Location:** Sanderling Dr. Entrance

<b>Total Project Cost:</b>	<b>\$10,800</b>
<b>Requesting Amount:</b>	<b>\$9,180</b>
<b>Neighborhood Match</b>	<b>\$1,620</b>
<b>Match Percentage:</b>	<b>15%</b>

### Project Summary:

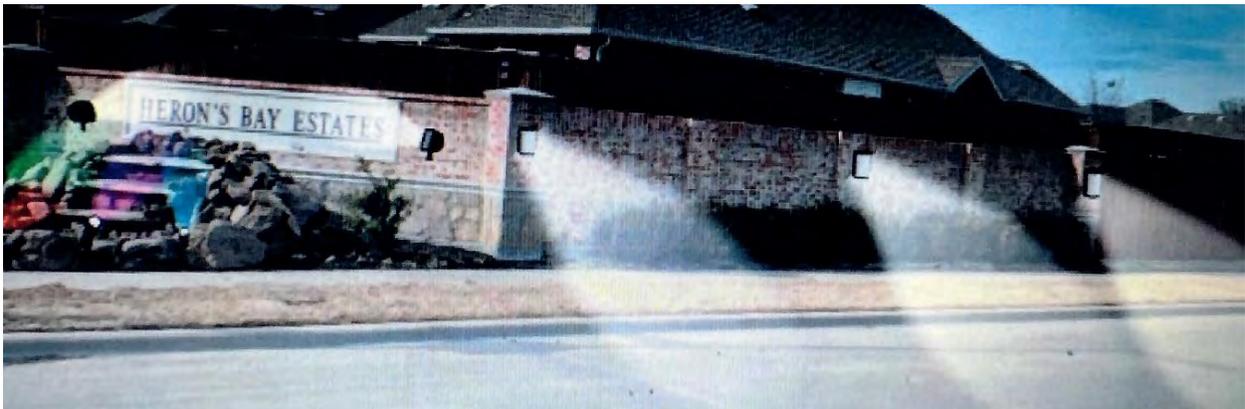
- Install new LED lighting at Sanderling entrance similar to lighting on Blue Heron
  1. Six (6) along the screening walls on Sanderling, three (3) on each side
  2. Two (2) on each entrance names on Sanderling.

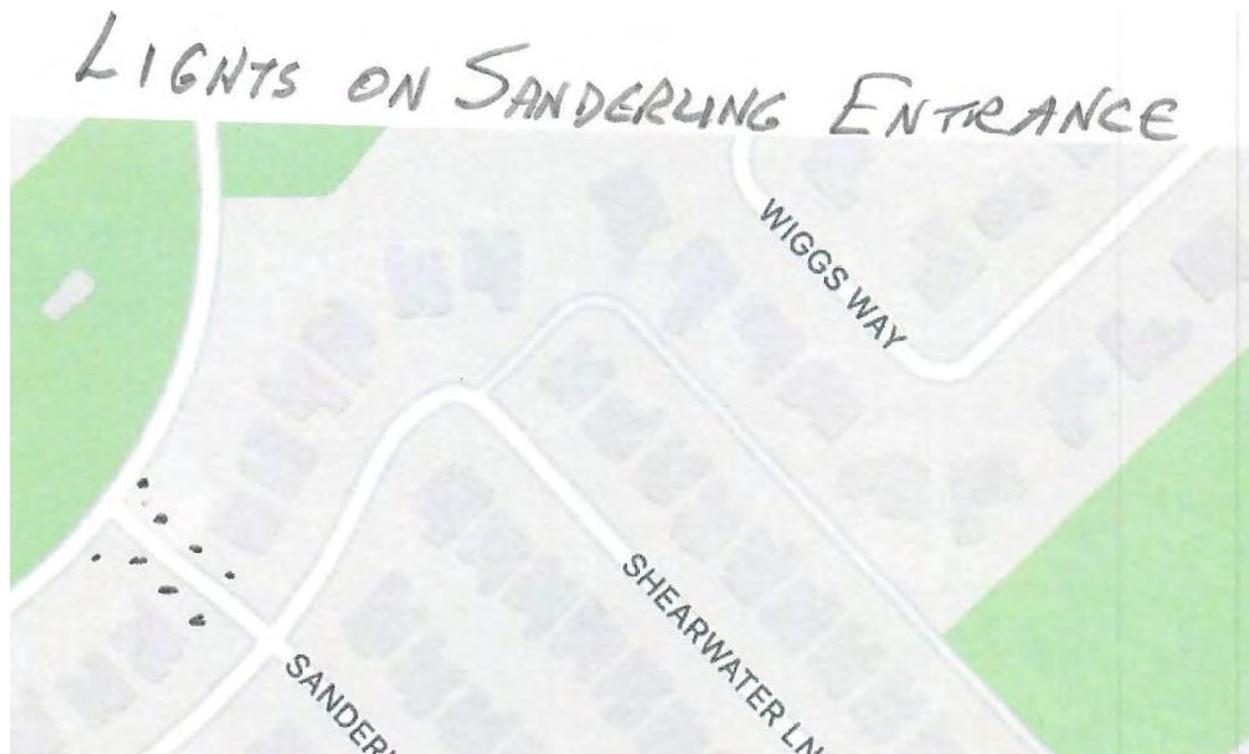
### Maps & Current Status of Area:





**Proposed Projects:**





### **Staff Comments**

#### **Office of Neighborhood Vitality (ONV):**

- May 2022 began the new five (5) year grant period for Heron's Bay making them eligible to apply for up to \$100,000 throughout the next five (5) years.
- New lighting is eligible through the Matching Grant program.
- There is existing ground lighting illuminating the entry signs.

#### **Building Inspections**

- If installing new electrical for lighting, and electrical permit is required.



## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. e.

**Meeting Date:** January 9, 2023

**Item Title:** Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor & Dallas County Juvenile Case Management System

**Submitted By:** Jeffrey Bryan, Chief of Police

**Strategic Focus Areas:** Safe Community

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### ISSUE

The City of Garland and Dallas County participate in a Memorandum of Understanding/Interlocal Agreement that allows the Garland Police Department to electronically file both adult and juvenile criminal cases with the District Attorney through the TechShare Law Enforcement Agency Portal. Dallas County has taken over the software support for this Law Enforcement Agency Portal and has changed the name from “TechShare Prosecutor” to “Dallas County Prosecutor.” Amendments to both the adult and juvenile Memorandum of Understanding are requested.

### OPTIONS

1. Approve by resolution the Mayor to execute an Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor and an Amendment to the Memorandum of Understanding to participate in the Dallas County Juvenile Case Management System.
2. Do not approve by resolution the Mayor to execute an Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor and an Amendment to the Memorandum of Understanding to participate in the Dallas County Juvenile Case Management System.

### RECOMMENDATION

Staff recommends that Council approve by resolution the Mayor to execute an Amendment to the Memorandum of Understanding for Criminal Justice Information Sharing via Dallas County Prosecutor and an Amendment to the Memorandum of Understanding to participate in the Dallas County Juvenile Case Management System. This item is scheduled for formal consideration at the January 10, 2023 Regular Meeting.

### BACKGROUND

Since 2015, the information sharing application has allowed electronic case filing and the seamless and secure electronic transfer of digital media from car and body cameras.

## **CONSIDERATION**

The new Memorandum of Understanding/Interlocal Agreement reflects the new name for the application and updates agreements already in place. It does not add any new applications or costs.

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### **Attachments**

Amendment No. 1 Techshare-Dallas Prosecutor

Amendment No. 2 Techshare-Juvenile Program

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STATE OF TEXAS

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COUNTY OF DALLAS

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**AMENDMENT NO. 1 to**

**MEMORANDUM OF UNDERSTANDING  
AMONG PARTICIPATING LOCAL GOVERNMENTS FOR  
CRIMINAL JUSTICE INFORMATION SHARING VIA  
DALLAS COUNTY PROSECUTOR**

This AMENDMENT NO. 1 is made to the certain Memorandum of Understanding (the “MOU”) between Dallas County, Texas (“County”) and the undersigned Participating Local Governments of the State of Texas (“Participating Local Government(s)”), executed by the parties under the authority of the Dallas County Commissioners Court on the dates listed in Exhibit “A.”

Due to the decision of the Dallas County Commissioners Court, Techshare Prosecutor shall no longer be directed under the Texas Conference of Urban Counties. Techshare Prosecutor shall be renamed “Dallas County Prosecutor” and managed as a Dallas County in-house technology application. This AMENDMENT NO. 1 evidences the following:

1. The MOU is hereby amended as follows:

Any reference to Dallas County Techshare Prosecutor (“TSP”) is hereby replaced with “Dallas County Prosecutor” throughout the MOU in its entirety.

2. All other terms, provisions, conditions, and obligations of the MOU between the Participating Local Government(s) and County shall remain in full force and effect, and said MOU along with this Amendment No. 1 shall be construed together as a single MOU agreement.

**[SIGNATORY PAGES SHALL FOLLOW]**

**BINDING AGREEMENT, AUTHORITY, PARTIES BOUND**

By signing this page, each Participating Local Government or Party represents that it has the full right, power and authority to enter and perform this *Amendment No. 1 to Memorandum Of Understanding / Interlocal Agreement Among Participating Local Governments For Criminal Justice Information Sharing via Dallas County Prosecutor* in accordance with all of the terms and conditions, and that the execution and delivery of this Amendment has been made by an authorized representative of each Party to validly and legally bind the same Party to all terms, performances and provisions set forth in this Amendment.

**COUNTY OF DALLAS**

**DALLAS COUNTY  
DISTRICT ATTORNEY**

\_\_\_\_\_  
Name: Clay Lewis Jenkins  
Title: Dallas County Judge  
Date: \_\_\_\_\_ / \_\_\_\_\_ / 20\_\_\_\_

\_\_\_\_\_  
Name: John Creuzot  
Title: Dallas County District Attorney  
Date: \_\_\_\_\_ / \_\_\_\_\_ /20\_\_\_\_

Contact Name & Address: John Creuzot  
Dallas County District Attorney  
133 N. Riverfront Blvd., LB 19  
Dallas, Texas 75207  
Phone: (214) 653-3600

APPROVED AS TO FORM\*:

JOHN CREUZOT  
DISTRICT ATTORNEY

  
\_\_\_\_\_  
Rebecca L. Lundberg  
Assistant District Attorney

**\*By law, the district attorney’s office may only advise or approve contracts or legal documents on behalf of its clients. It may not advise or approve a lease, contract, or legal document on behalf of other parties. Our review of this document was conducted solely from the legal perspective of our client. Our approval of this document was offered solely for the benefit of our client. Other parties should not rely on this approval, and should seek review and approval by their own respective attorney(s).**

**BINDING AGREEMENT, AUTHORITY, PARTIES BOUND**

By signing this page, each Participating Local Government or Party represents that it has the full right, power and authority to enter and perform this *Amendment No. 1 to Memorandum Of Understanding / Interlocal Agreement Among Participating Local Governments For Criminal Justice Information Sharing via Dallas County Prosecutor* in accordance with all of the terms and conditions, and that the execution and delivery of this Amendment has been made by an authorized representative of each Party to validly and legally bind the same Party to all terms, performances and provisions set forth in this Amendment.

**CITY/TOWN OF** \_\_\_\_\_

**ATTEST:**

\_\_\_\_\_

\_\_\_\_\_

Name: \_\_\_\_\_

\_\_\_\_\_

Title: \_\_\_\_\_

\_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

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**APPROVED AS TO FORM\*:**

\_\_\_\_\_  
Attorney for \_\_\_\_\_

Exhibit “A”

<u>Law Enforcement Agency</u>	<b>Fully Executed Agreement Date</b>		<b>Fully Executed Agreement Date</b>
Carrollton Police Department	2-17-2015	Seagoville Police Department	6-6-2017
Grand Prairie Police Department	6-16-2015	Parkland Police Department	4-4-2017
Cedar Hill Police Department	6-9-2015	Sachse Police Department	6-20-2017
Farmers Branch Police Department	6-9-2015	Dallas ISD Police Department	3-20-2018
Balch Springs Police Department	6-16-2015	Dallas College Police Department	2-6-2018
DART Police Department	6-16-2015	Wilmer Police Department	10-17-2017
Richardson Police Department	11-3-2015	Duncanville ISD Police Department	10-16-2018
Duncanville Police Department	6-30-2015	Texas Department of Public Safety (DPS)	8-20-2019
Desoto Police Department	6-30-2015	Baylor Scott & White Hospital Police	3-19-2019
Garland Police Department	11-3-2015	Methodist Hospital Police	2-19-2019
Mesquite Police Department	1-19-2016	TX Comptroller of Public Accounts	9-1-2020
Irving Police Department	4-19-2016	Sunnyvale Police Department	10-20-2020
Lancaster Police Department	4-19-2016	Cockrell Hill Police Department	10-17-2017
Dallas Police Department	11-3-2015	Cockrell Hill Fire Marshal	5-18-2021
Coppell Police Department	5-26-2015	VA Hospital	4-6-2021
Hutchins Police Department	6-9-2015	Union Pacific RR Police Department	12-15-2020
Addison Police Department	4-19-2016	A+ Charter Schools Police Department	6-21-2022
University Park Police Department	11-3-2015	Cedar Hill ISD Police Department	6-21-2022
SMU Police Department	9-6-2016	Texas Workforce Commission	8-2-2022
Glenn Heights Police Department	10-4-2016		
Rowlett Police Department	6-7-2016		
Highland Park Police Department	10-4-2016		
TABC	11-3-2015		
UT Southwestern Police Department	9-6-2016		
UT Dallas Police Department	10-4-2016		

STATE OF TEXAS                   §  
  §  
COUNTY OF DALLAS           §

**AMENDMENT NO. 2 to**

**MEMORANDUM OF UNDERSTANDING  
WITH PARTICIPATING LOCAL GOVERNMENTS AND  
DALLAS COUNTY TO PARTICIPATE IN  
DALLAS COUNTY JUVENILE CASE MANGEMENT SYSTEM**

This AMENDMENT NO. 2 is made to the certain Memorandum of Understanding between Dallas County, Texas (“County”) and the undersigned Participating Local Governments of the State of Texas (“Participating Local Government(s)”), executed by the parties under the authority of Dallas County Commissioners Court Order No. 2013-0898, adopted on May 21, 2013 (the “MOU”). Techshare.Juvenile shall no longer be directed under the Texas Conference of Urban Counties. Techshare.Juvenile shall be renamed “Dallas County Juvenile Case Management System” and managed as a Dallas County in-house technology application. This AMENDMENT NO. 2 evidences the following:

1. The MOU is hereby amended as follows:

Any reference to TechShare.Juvenile is hereby replaced with “Dallas County Juvenile Case Management System” throughout this MOU in its entirety.

Section II “Recitals,” paragraphs 1, 2, and 3 are deleted in their entirety and replaced with the following amended language:

**II.  
RECITALS**

**WHEREAS**, Participating Local Governments desire to enter into this Agreement for the Participants’ participation in the Dallas County Juvenile Case Management System, an extended case management system that will allow participating agencies within Dallas County to view juvenile information;

**WHEREAS**, The Participating Local Governments will have access to the Dallas County Juvenile Case Management System in order to file cases electronically, perform countywide juvenile record searches, and perform other functions as allowed by statutes and role based permissions;

**WHEREAS**, The Participating Local Governments will be required to have either a site-to-site Virtual Private Network (VPN) connection between the agency network and Dallas County or provide Public IP addresses to Dallas County for which the agency stipulates to having exclusive control for Dallas County to provide IP whitelist access for agency to access the Dallas County Juvenile Case Management System. The basic equipment needed by the Participating Local Governments to establish the VPN connection is a site-to-site capable firewall and a circuit. The agency must inform Dallas County in the event they

change Public IP addresses. If using a VPN, the agency firewall must be capable of supporting a minimum of AES-256 encryption capability and IPSec security protocols. Further, the encryption standards must be compliant with the federal data encryption standard of FIPS-140-2. Additionally, a 3Mb circuit is recommended. Dallas County has provided each Participating local Governments with firewall cost approximations for agencies whose current infrastructure may not currently support VPN connectivity. Due to laws governing circuit location and the range of costs between providers, Participating Local Governments should contact their telecommunication service provider to determine circuit costs.

2. All other terms, provisions, conditions, and obligations of the MOU between the Participating Local Government(s) and County shall remain in full force and effect, and said MOU along with this Amendment No. 2 shall be construed together as a single MOU agreement.

**[SIGNATORY PAGES SHALL FOLLOW]**

**BINDING AGREEMENT, AUTHORITY, PARTIES BOUND**

By signing this page, each Participating Local Government or Party represents that it has the full right, power and authority to enter and perform this *Amendment No. 2 to MOU Among Participating Local Governments and Dallas County to Participate in Dallas County Juvenile Case Management System* in accordance with all of the terms and conditions, and that the execution and delivery of this Amendment has been made by an authorized representative of each Party to validly and legally bind the same Party to all terms, performances and provisions set forth in this Amendment.

**DALLAS COUNTY, TEXAS**

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**APPROVED AS TO FORM\*:**

**JOHN CREUZOT  
DISTRICT ATTORNEY**

  
\_\_\_\_\_  
Rebecca L. Lundberg  
Assistant District Attorney  
Civil Division

**\*By law, the District Attorney's Office may only advise or approve contracts or agreements or legal documents on behalf of its clients. It may not advise or approve a contract or agreement or legal document on behalf of other parties. Our review of this document was conducted solely from the legal perspective of our client. Our approval of this document was offered solely for the benefit of our client. Other parties should not rely on this approval, and should seek review and approval by their own respective attorney(s).**

**BINDING AGREEMENT, AUTHORITY, PARTIES BOUND**

By signing this page, each Participating Local Government or Party represents that it has the full right, power and authority to enter and perform this *Amendment No. 2 to MOU Among Participating Local Governments and Dallas County to Participate in Dallas County Juvenile Case Management System* in accordance with all of the terms and conditions, and that the execution and delivery of this Amendment has been made by an authorized representative of each Party to validly and legally bind the same Party to all terms, performances and provisions set forth in this Amendment.

**ATTEST:**

\_\_\_\_\_

\_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Address: \_\_\_\_\_

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\_\_\_\_\_

**APPROVED AS TO FORM\*:**

\_\_\_\_\_  
Attorney for \_\_\_\_\_



## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. f.

**Meeting Date:** January 9, 2023  
**Item Title:** Hazard Mitigation Action Plan Adoption Resolution  
**Submitted By:** Mistie Gardner, Emergency Management Director  
**Strategic Focus Areas:** Safe Community

---

### ISSUE

It is requested that Council consider adoption of the City of Garland updated Hazard Mitigation Action Plan. This plan was developed to implement hazard mitigation activities that will result in a more sustainable community by saving lives and properties from disaster situations. This plan will also allow the City of Garland to become eligible for grant-funded mitigation projects that are not currently available.

### OPTIONS

1. Adopt the Hazard Mitigation Action Plan
2. Reject the Hazard Mitigation Action Plan

### RECOMMENDATION

Staff recommends “Option 1,” adopting the City of Garland Hazard Mitigation Action Plan. This item is scheduled for formal consideration at the January 10, 2023 Regular Meeting.

### BACKGROUND

The City of Garland Hazard Mitigation Action Plan (HazMAP) is designed to meet the planning requirements set forth by the Texas Division of Emergency Management (TDEM), and the planning requirements set forth by the Federal Emergency Management Agency (FEMA). Local governments are required to develop a hazard mitigation action plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act (DMA) of 2000, provides the legal basis for state, local, and tribal governments to undertake a risk-based approach to reduce risks from hazards through mitigation planning. The requirements and procedures for State, Tribal and Local Mitigation Actions Plans are found in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201 (44 CFR Part 201). Appendix A is reserved for the City Council Resolution, formally adopting the City of Garland Hazard Mitigation Action Plan.

The City of Garland Hazard Mitigation Action Plan is divided into nine sections. Each section

is designed to address the planning requirements set forth by state and federal agencies tasked with oversight of DMA 2000. The City of Garland Hazard Mitigation Action Plan sections are identified below:

- Section One describes the purpose and authority of the Hazard Mitigation Action Plan and its organization.
- Section Two provides a description of the planning process the City of Garland followed to prepare the Hazard Mitigation Action Plan.
- Section Three describes the profile of the City of Garland and is a helpful tool in understanding how to best mitigate local hazards.
- Section Four provides detail on the hazard identification analysis and risk assessment, and shows how the Risk Summary (Table 4.5) was developed and hazard ranking.
- Section Five contains the hazard profiles that pose the greatest risk to the City of Garland. Each hazard profile contains: the location, severity, previous occurrences, probability of future events, impacts and vulnerability of those hazards.
- Section Six outlines the City of Garland's mitigation strategy, goals and objectives, reports progress on previous mitigation actions and addresses prioritizing mitigation actions.
- Section Seven outlines mitigation actions for the identified hazards.
- Section Eight describes the plan maintenance process for how the plan will be monitored, evaluated, incorporated and updated.
- Section Nine is the Appendix which provides additional information referenced in the plan.

The City of Garland Hazard Mitigation Action Plan provides a better understanding to local officials and citizens on what hazards are present within the community, how those hazards might affect the community and proposed strategies to minimize the risk of identified hazards.

The plan has been reviewed and approved by both the Federal Emergency Management Agency and Texas Division of Emergency Management, pending adoption by the local government.

## **CONSIDERATION**

Adoption of the Hazard Mitigation Action Plan would make the City of Garland eligible to apply federal mitigation funding to prevent disasters within the local community.

Election not to adopt the Hazard Mitigation Action Plan would prevent the City of Garland from applying for grant funding for disaster mitigation projects.

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## **Attachments**

Reso \_\_\_\_\_ COG EOC HazMap\_Resolution 2022 FY2023

Federal Emergency Management Agency (FEMA) Hazard Mitigation Action Plan Approval  
Pending Adoption Letter-City of Garland Plan  
City of Garland Updated Hazard Mitigation Action Plan

---

RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GARLAND, TEXAS ADOPTING THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) APPROVED AND REVISED HAZARD MITIGATION ACTION PLAN; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, natural hazards in the City of Garland, Texas historically have caused significant disasters with losses of life and property;

**WHEREAS**, the Federal Disaster Mitigation Act of 2000 and the Federal Emergency Management Agency ("FEMA") require communities to adopt a Hazard Mitigation Action Plan to be eligible for the full range of pre-disaster and post-disaster federal funding for mitigation purposes;

**WHEREAS**, FEMA requires that communities update their Hazard Mitigation Action Plans every five years in order to be eligible for the full range of pre-disaster federal funding for mitigation purposes;

**WHEREAS**, the City of Garland has assessed the community's potential risks and hazards and is committed to planning for a sustainable community and reducing the long-term consequences of natural and man-caused hazards;

**WHEREAS**, the City of Garland's updated and revised Hazard Mitigation Action Plan outlines a mitigation vision, goals, and objectives; assesses risks from a range of hazards; and identifies risk reduction strategies and actions for hazards that threaten the community; and

**WHEREAS**, the City of Garland has received notification that the City's updated and revised Hazard Mitigation Action Plan has been approved by the FEMA pending adoption.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GARLAND, TEXAS THAT:**

**Section 1**

The Garland City Council hereby adopts the City of Garland's updated and revised Hazard Mitigation Action Plan.

**Section 2**

This Resolution shall be and become effective immediately upon and after its adoption and approval.

**PASSED AND APPROVED** this the \_\_\_\_ day of \_\_\_\_\_, 2023.

**CITY OF GARLAND, TEXAS**

\_\_\_\_\_  
Mayor

**ATTEST:**

\_\_\_\_\_  
City Secretary



December 16, 2022

The Honorable Scott Lemay  
Mayor, City of Garland  
[Slemay@garlandtx.gov](mailto:Slemay@garlandtx.gov)  
200 N 5<sup>th</sup> St,  
Garland, Texas 75040

RE: Approvable Pending Adoption of the City of Garland, Texas Hazard Mitigation Plan (HMP)

Funding Source: n/a

Mayor Lemay:

Congratulations! FEMA has concluded the review of the City of Garland, Texas HMP, and the plan is found to be approvable pending adoption. For this plan to receive final FEMA approval, the jurisdictions must adopt this plan and submit the complete adoption package to the state within 90 days (March 16, 2023). The plan update timeline will begin on the date of the FEMA approval letter. Please e-mail the complete adoption package to [HM-Plans@tdem.texas.gov](mailto:HM-Plans@tdem.texas.gov) as follows:

- The final plan formatted as a single document
  - Plan must be dated to match the date of the FEMA approval letter.
  - Remove track changes, strikethroughs, and highlights.
- All signed resolutions as a separate single document

The previous review tool may contain recommendations to be applied to your next update. DO NOT make any further changes to your plan until it has been approved. If you have any questions concerning this procedure, please do not hesitate to contact me at [jim.guin@tdem.texas.gov](mailto:jim.guin@tdem.texas.gov). We commend you for your commitment to mitigation.

Respectfully,

A handwritten signature in black ink that reads "Jim Guin". The signature is written in a cursive, flowing style.

Jim Guin  
Hazard Mitigation Supervisor  
Hazard Mitigation Division  
Texas Division of Emergency Management

Cc: Bradley Kavanaugh, [BKavanaugh@garlandtx.gov](mailto:BKavanaugh@garlandtx.gov)  
Zoie Venable, [zoie.venable@tdem.texas.gov](mailto:zoie.venable@tdem.texas.gov)  
Kevin Enoch, [kevin.enoch@tdem.texas.gov](mailto:kevin.enoch@tdem.texas.gov)  
Sarah Haak, [Sarah.Haak@tdem.texas.gov](mailto:Sarah.Haak@tdem.texas.gov)

# HAZARD MITIGATION ACTION PLAN



2022

Office of Emergency Management



## GARLAND

FEMA Approval: December 16, 2022

For more information, visit our website at:

[GarlandTX.gov/oem](http://GarlandTX.gov/oem)

Written comments should be forwarded to:

Office of Emergency Management (OEM)

P.O. Box 469002

Garland, TX 75040

[OEM@GarlandTX.gov](mailto:OEM@GarlandTX.gov)

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### Purpose

The City of Garland’s Hazard Mitigation Action Plan (HazMAP) is designed to meet the planning requirements for State, Tribal and Local Mitigation Plans found in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201 (44 CFR Part 201). Local governments are required to develop a hazard mitigation plan as a condition for receiving certain types of non-emergency disaster assistance, including funding for mitigation projects. The Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended, May 2019, provides the legal basis for state, local, and tribal governments to develop and submit a mitigation plan to reduce the impacts from identified natural hazards, risks and vulnerabilities. Appendix A is reserved for the City Council Resolution, formally adopting the City of Garland Hazard Mitigation Action Plan, which occurs after FEMA’s conditional approval.

### Organization

The City of Garland Hazard Mitigation Action Plan is divided into nine sections. Each section is necessary to meet the planning requirements. The City of Garland Hazard Mitigation Action Plan sections include:

1. **Introduction:** Describes the purpose and authority of the Hazard Mitigation Action Plan and its organization.
2. **Planning Process:** Provides a description of the planning process the City of Garland followed to develop the Hazard Mitigation Action Plan.
3. **Community Profile:** Describes the profile of the City of Garland and is a helpful tool in understanding how to best mitigate local hazards.
4. **Risk Overview:** Provides detail on the hazard identification analysis and risk assessment, and shows how the Risk Summary (Table 4.5) was developed and hazard ranking.
5. **Hazard Profiles:** Contains the hazard profiles that pose the greatest risk to the City of Garland. Each hazard profile contains the location, severity, previous occurrences, probability of future events, impacts and vulnerability of those hazards.
6. **Hazard Mitigation Strategy:** Outlines the City of Garland’s mitigation strategy, goals and objectives, reports progress on previous mitigation actions and addresses prioritizing mitigation actions.
7. **Hazard Mitigation Actions:** Outlines mitigation actions for the identified hazards.
8. **Plan Maintenance:** Describes the plan maintenance process for how the plan will be monitored, evaluated, incorporated and updated.
9. **Appendix:** Includes the appendix that provides additional information referenced in the plan.

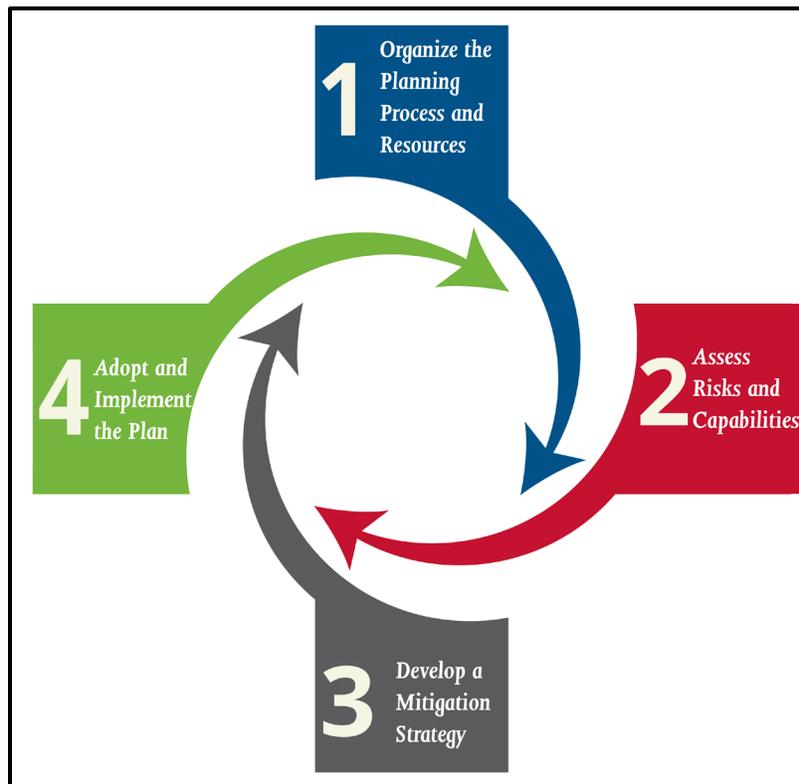


The City of Garland’s Hazard Mitigation Action Plan was developed based on guidelines published by FEMA and includes four phases depicted in Figure 2.1 below.

At the onset of the planning process, numerous organizations and interested parties were invited to participate in the HazMAP efforts. These partners included local, regional and state agencies, private residents, and community based associations. Involving a variety of planning partners helped ensure a strong foundation for the Hazard Mitigation Action Plan.

Meetings were held with the Hazard Mitigation Planning Team, where risks were assessed and mitigation goals and actions created. Local and regional contacts also provided information directly to the Planning Team, which was an important aspect to the planning process.

**Figure 2.1**



*Source: Federal Emergency Management Agency*

## Planning Team

The Planning Team members were identified based on their expertise and authority to implement the mitigation actions. The following are the members of Garland's Hazard Mitigation Action Planning Team:

- Building Inspection - *Building Official*
- Emergency Management - *Director*
- Emergency Management – *Preparedness and Resilience Coordinator*
- Engineering - *Director*
- Facilities - *Physical Security Program Manager*
- Fire Department - *Assistant Fire Chief*
- Garland Power & Light (GP&L) - *Chief Operations Officer*
- Public Health - *Environmental Health Manager*
- Neighborhood Vitality - *Administrator*
- Community Development, Housing Agency, Library and Neighborhood Vitality - *Managing Director*
- Parks and Recreation and Cultural Arts - *Parks Director*
- Police Department - *Captain*
- Water Department - *Wastewater Treatment Director*

## Kickoff and Subsequent Meetings

The kickoff meeting was held virtually on November 17, 2021. This initial meeting was an opportunity to inform key department heads and Planning Team members about how the planning process pertained to their distinct roles and responsibilities. Progress of past mitigation activities were discussed and the new hazard identification process began.

The Planning Team participated in additional meetings and did work outside of the group meetings. The Planning Team performed the following activities: identified hazards, conducted risk assessments, ranked hazards, developed a public outreach strategy, planned implementation of mitigation actions, assisted in research and gathering information to include in the plan and participated in the draft plan review. The Team will also monitor progress of the updated mitigation actions and will assist with plan updates as needed. The summary of planning meetings is outlined in Table 2.2 and meeting documentation is found in Appendix B.

**Table 2.2 - Meeting Summaries**

Date	Purpose
November 17, 2021	<ul style="list-style-type: none"> <li>• Kickoff meeting</li> <li>• Discussion about the purpose of mitigation and planning process</li> <li>• Reviewed Previous Mitigation Goal Progress and Implementation</li> <li>• Hazard Mitigation Survey Explained</li> </ul>
December 15, 2021	<ul style="list-style-type: none"> <li>• Hazard Mitigation Survey Results (Identified Hazards)</li> <li>• Planning Team Impact Assessment</li> <li>• Review/Discuss edits or changes</li> <li>• Project list from 2017 – Additions/Status</li> </ul>
January 26, 2022	<ul style="list-style-type: none"> <li>• Planning Team Impact Assessment Review</li> <li>• Review/Discuss edits or changes</li> <li>• Project Lists from 2017 – Additions/Status</li> <li>• Discuss Climate Change acknowledgement</li> </ul>
March 2, 2022	<ul style="list-style-type: none"> <li>• Review/Discuss edits or changes</li> <li>• Finalize Mitigation strategies</li> <li>• Summarize/Review of HazMAP Public Meetings</li> <li>• Discuss final steps/final review</li> </ul>

## Mitigation Review and Development

The Planning Team developed the 2022-2027 mitigation strategy. During the initial kickoff meeting, the Planning Team gave progress reports on all mitigation actions listed in the 2017 Plan. After initial reports were given the Planning Team completed department updates with additional details regarding 2022 mitigation actions and information. Planning Team members reported accomplishments, obstacles, delays, and revisions of the 2022 mitigation actions and updated information, images, data and statistics that related to each mitigation action and HazMAP as a whole. Development of the mitigation actions for the 2022 HazMAP was ongoing throughout the planning process. An educational component was conducted at the January 26, 2022 and the March 2, 2022 meetings to ensure Planning Team members were actively considering all mitigation actions for HazMAP. The City’s Capital Improvement Plan and department budgets were reviewed to determine possible mitigation actions. Planning Team members identified proposed actions, hazard(s) addressed, costs and benefits, the responsible parties, effects on new and existing structures, implementation schedules and potential funding sources. All Mitigation actions identified during the process were made available to the Planning Team for review. In addition, the draft Plan was made available for public review and comment on the City of Garland’s website, through the City Secretaries Office and through open public meetings.

## **Review of Existing Plans, Plan Integration and Implementation**

A variety of existing studies, plans, reports, and technical information were reviewed as part of the planning process. Sources of the information included FEMA, TDEM, Dallas County, and the City of Garland.

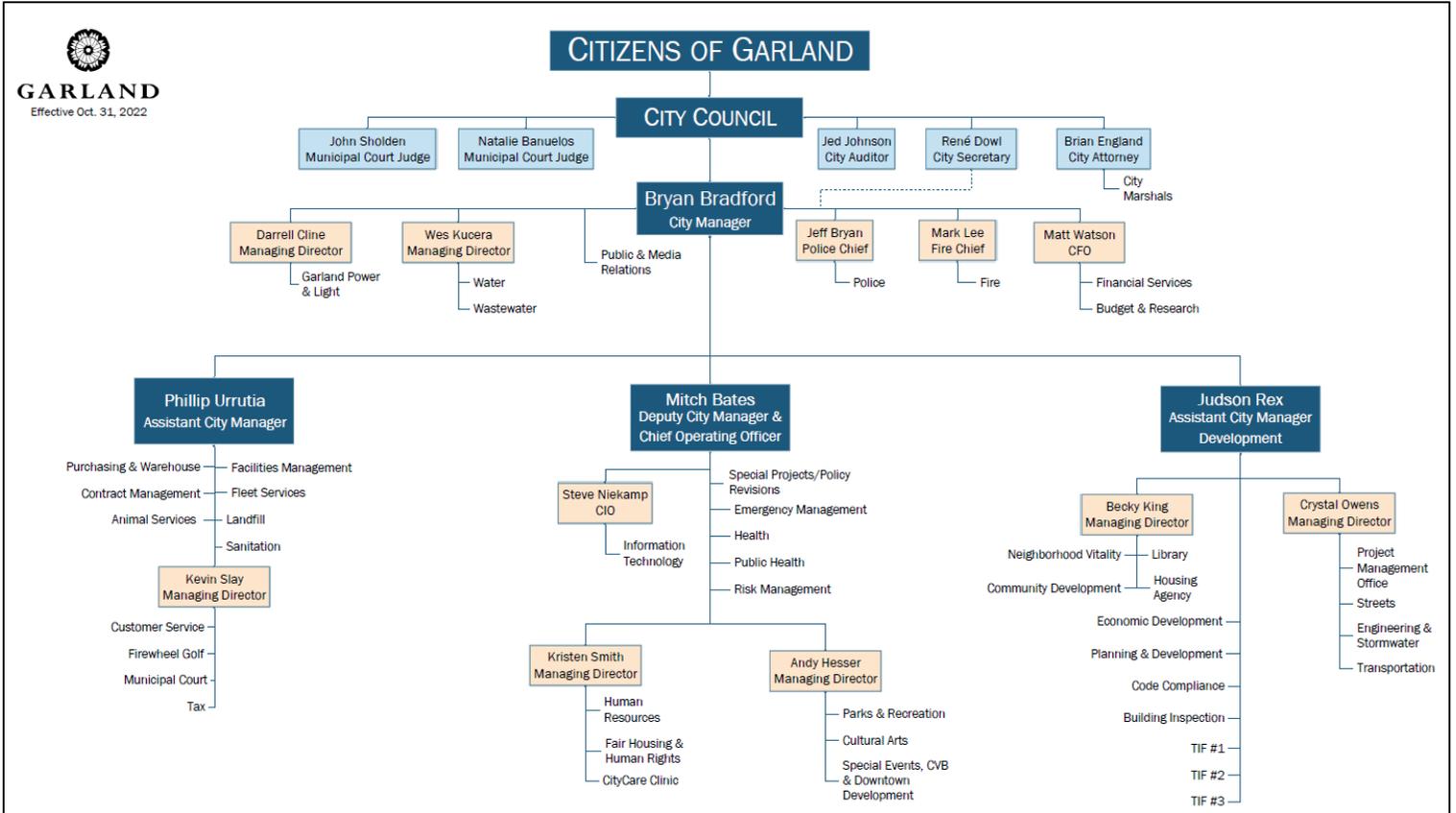
Other documents, including those from the National Oceanic and Atmospheric Administration (NOAA) that includes the National Climatic Data Center (NCDC), provided previous hazard occurrence data and descriptions of events in the area. Materials from FEMA and TDEM were reviewed for guidance on plan development requirements and utilized in the development of the Plan at all stages. The Dallas County HazMAP including multiple surrounding jurisdictions and the City of Dallas Local Mitigation Action Plan were reviewed to confirm consistency with methodology, hazard identification and prioritization relative to Garland's Plan update. Internally, the City of Garland's Capital Improvement Plan and Operating Budget were reviewed to identify what mitigating activities the City of Garland has currently budgeted to complete.

The annual budget review is an important tool in controlling and executing mitigation goals and objectives. It is this phase where identified mitigation actions may be locally funded. Each action has been assigned to a specific department that is responsible for tracking and implementing the mitigation actions explained in Section 7. A funding source and implementation timeline are included for department use. The timelines will be impacted and partially directed by the City's comprehensive planning process, Capital Improvement Plan, budgetary constraints, community needs and any additional funding sources obtained including grant funds

## **Capability Assessment**

The Planning Team identified current capabilities for completing and implementing hazard mitigation actions. Members verified all planning/regulatory, administrative/technical, financial and educational capabilities were included in the document for all City of Garland departments. The City of Garland organizational chart (Figure 2.3) presents departments who have roles in the hazard mitigation process. The Regulatory and Capabilities Tool Assessment (Figure 2.4) describes policies, programs, resources, codes and ordinances to accomplish hazard mitigation through the listed departments.

Figure 2.3 - City of Garland Organizational Chart



**Figure 2.4 – Regulatory and Capabilities Tool Assessment**

<b>Regulatory Tools (Ordinances, Codes, Plans)</b>	<b>Additional Information</b>
Comprehensive / Master Plan	<ul style="list-style-type: none"> <li>• 2030 Envision Garland</li> </ul>
Capital Improvements Plan	<ul style="list-style-type: none"> <li>• 2021 CIP Plan Adopted</li> </ul>
Economic Development Plans	<ul style="list-style-type: none"> <li>• Economic Development Department</li> <li>• 2030 Envision Garland</li> <li>• Garland Economic Development Partnership (Garland Independent School District (GISD), City of Garland and Chamber of Commerce)</li> </ul>
Local Emergency Operations Plans	<ul style="list-style-type: none"> <li>• City of Garland Emergency Operations Plan</li> </ul>
Continuity of Operations Plans	<ul style="list-style-type: none"> <li>• Citywide Continuity of Operations (COOP) Plan</li> </ul>
Transportation Plan	<ul style="list-style-type: none"> <li>• Thoroughfare Plan, Comprehensive Corridor Plan SH-78</li> <li>• Strategic Transportation Enhancement Plan (STEP)</li> </ul>
Building Code	<ul style="list-style-type: none"> <li>• Adopted 2015 International Building Code</li> </ul>
Fire Department ISO Rating	<ul style="list-style-type: none"> <li>• ISO Rating 1 (Highest rating)</li> </ul>
Site Plan Review Requirements	<ul style="list-style-type: none"> <li>• Approved by the City Engineering Department as part of the Site Permit</li> </ul>
Zoning Ordinance	<ul style="list-style-type: none"> <li>• Comprehensive Zoning List 4647, includes the zoning districts, land use permissibility, definitions, parking requirements, and development standards</li> </ul>
Subdivision Ordinance	<ul style="list-style-type: none"> <li>• Garland Development Code</li> </ul>
Flood Insurance Rate Maps	<ul style="list-style-type: none"> <li>• Engineering: Floodplain and Drainage - FEMA has published Flood Insurance Rate Maps (FIRMs) graphically showing the extents of approximately 2,400 acres in the 100-year floodplain in Garland</li> <li>• Passive recreational and park uses are encouraged while encroachments and obstructions are prohibited</li> </ul>
Growth Management Ordinances	<ul style="list-style-type: none"> <li>• Garland Development Code</li> </ul>
Drought Management	<ul style="list-style-type: none"> <li>• Water Conservation Plan</li> <li>• Drought Contingency Response Plan</li> </ul>

Regulatory Tools (Ordinances, Codes, Plans)	Additional Information
Planning Commission	<ul style="list-style-type: none"> <li>Composed of nine members appointed by the City Council. One member is appointed to represent each of the eight Council districts, and one member is appointed at-large</li> </ul>
Mutual Aid Agreements	<ul style="list-style-type: none"> <li>Dallas County mutual aid agreement, Inter-local agreements with Wylie, Farmersville, Brownsville, Greenville, Jasper, Newton, Bryan, Denton, Rowlett and Sachse</li> </ul>
Maintenance Programs to Reduce Risk	<ul style="list-style-type: none"> <li>Code Compliance: Single Family Rental Program (requires properties to be permitted), Code Cares (tree trimming, fence maintenance, trash/debris removal)</li> <li>GP&amp;L: Annual tree trimming/vegetation management program</li> </ul>
NFIP Participation	<ul style="list-style-type: none"> <li>Engineering: Floodplain and Drainage – 100-year floodplains are near Duck Creek, Rowlett Creek, Spring Creek, and their tributaries</li> <li>All new development projects are reviewed for compliance with the flood prevention ordinance</li> </ul>
Chief Building Official	<ul style="list-style-type: none"> <li>Full Time - Building Inspection, Brita Van Horne</li> </ul>
Emergency Management	<ul style="list-style-type: none"> <li>Full Time – Director of Emergency Management, Mistie Gardner</li> <li>Full Time – Office of Emergency Management Preparedness and Resilience Coordinator, Brad Kavanaugh</li> </ul>
Floodplain Administrator	<ul style="list-style-type: none"> <li>Full Time – Engineering, Michael C. Polocek, P.E.</li> </ul>
Community Planner	<ul style="list-style-type: none"> <li>Full Time – Planning &amp; Community Development</li> </ul>
Drainage and Development Engineer	<ul style="list-style-type: none"> <li>Full Time – Jake Fisher, P.E.</li> </ul>
Surveyors	<ul style="list-style-type: none"> <li>Engineering - land surveying, easements, platting and right-of-way</li> </ul>
Warning Systems/Services	<ul style="list-style-type: none"> <li>Garland Alert System</li> <li>Outdoor Warning System</li> <li>Integrated Public Alert &amp; Warning System through the National Weather Service and the State of Texas</li> </ul>

## Expanding and Improving

The City of Garland is progressive and forward thinking, continually expanding and improving existing policies and programs for the wellbeing of the community. New Federal regulations and best practices are adopted through various ordinances to strengthen current policies. The City Council and City Manager address the budget, policies, regulations and codes, hire staff, approve plans and determine the direction of the city overall. Ability to implement and approve mitigation actions, expand existing mitigation actions and integrate mitigation into existing policies and programs is function of this group. Additional positions will be considered for staffing the Office of Emergency Management, as there are currently gaps in local capacity regarding preparedness, mitigation, response and recovery. Funding constraints make increased staffing a challenge.

## Stakeholder and Public Involvement

Stakeholders provide an essential service in hazard mitigation planning. Therefore, throughout the planning process, local government, members of community groups and local businesses were encouraged to participate in surveys and public meetings. In addition to the public outreach campaign, the City of Garland sought input on the HazMAP from its neighboring jurisdictions, county emergency management office and regional Council of Government. The table below lists the individuals contacted and method of contact. All input received was implemented into the plan.

<b>Organization</b>	<b>Name and Title</b>	<b>Contact Method</b>
City of Richardson	Alisha Gimbel - Emergency Management Director	Email
City of Mesquite	Jason Block - Emergency Management Coordinator	Email
City of Plano	Carrie Little - Emergency Management Coordinator	Email
Dallas County	Denisse Martinez - Emergency Planner & Volunteer Coordinator	Email
City of Dallas	Travis Houston - Assistant Emergency Management Coordinator	Email
City of Rowlett	Ed Balderas - Emergency Management Coordinator	Email
City of Sachse	Marty Wade - Fire Chief	Email
Garland ISD	Mark Quinn - Director of Security	Email
North Central Texas Council of Governments	Maribel Martinez - Emergency Preparedness Director	Email

Input from individual residents representing the whole community provided the Planning Team with a greater understanding of local concerns and increases the likelihood of successfully implementing mitigation actions. The City of Garland incorporated several methods to engage the public throughout the planning process, prior to official Plan approval and adoption. These methods included a public survey, posting information to the city's website, designated point of contact for HazMAP questions and comments, open public meetings, open access to plan for review during all city business hours during the planning process and inclusion of the public on the Planning Team.

In September 2021, the Office of Emergency Management developed an informational flyer explaining how to participate with plan review and complete the survey. This flyer was inserted into the month of September's utility bills and mailed to every Garland residence. This provided information to each household on multiple ways to provide hazard mitigation input. A QR code was placed on the flyer that allowed citizens to scan the code to be automatically redirected to the survey. This allowed survey results to be electronically recorded and geographic data would be made available. In addition to mailing flyers, the survey was circulated to a wide audience through all available channels that included:

- Distribution of the survey and mitigation information electronically via City of Garland's Facebook, Twitter, Instagram, LinkedIn and Nextdoor social media platforms.
- Paper copies were made available at six City Recreation Centers, four City Libraries and one City Senior Center in English, Spanish and Vietnamese providing a manual process for feedback and input.
- Residents were also able to access the survey at all four public libraries' computers and could request a paper copy of the survey from the HazMAP point of contact, information provided via all channels.

The survey solicited public feedback on the hazards residents felt had the greatest impact on Garland. Residents were asked to review the list of hazards identified by the City's Planning Team and rank those hazards in order of importance and of greatest impact. The survey included 15 questions and was available in English, Spanish and Vietnamese. 149 surveys were completed; the survey and results are included in Appendix D.

The purpose of the survey was to obtain public input during the planning process, confirm the Planning Teams findings with the public input, and determine any other areas of concern.

During hazard analysis it was determined that the Public ranked hazards based on their personal capabilities and experiences while the Planning Team ranked hazards according to the City of Garland capabilities to respond to each hazard.

After the initial public survey results were analyzed, Garland OEM further surveyed and interviewed residents regarding hazard ranking and the rationale behind their ranking decisions. These public conversations occurred at City of Garland's Public Hazard Mitigation Meetings held on February 17, 2022 and February 26, 2022, which confirmed what the original survey had unveiled. The Public ranks hazards based on personal experiences. Statements regarding ranking were made such as:

- "I have lived in Garland for 45 days. I have not experienced any concerns to date."

- “Let residents know if their neighborhood is in a high risk area for potential hazards and damages.”
- “Make electrical power more resistant to extreme heat and cold temperatures, to avoid power outages that last for days.”

Closing this perception gap will require public education. Instructing individuals to see beyond themselves and understand the whole community concept of hazard mitigation required continuous outreach and public education, which is already offered by Garland OEM and other relevant City departments.

Throughout the process of creating the Hazard Mitigation Action Plan, updates were made to the City of Garland Office of Emergency Management website ([GarlandTX.gov/oem](http://GarlandTX.gov/oem)). The information posted on the website included.

- Hazard Mitigation Definition
- Why Garland Needs a Plan
- Mitigation Action Examples
- Explanation of the Planning Process
- Hazards Identified by the Planning Team
- HazMAP Point of Contact

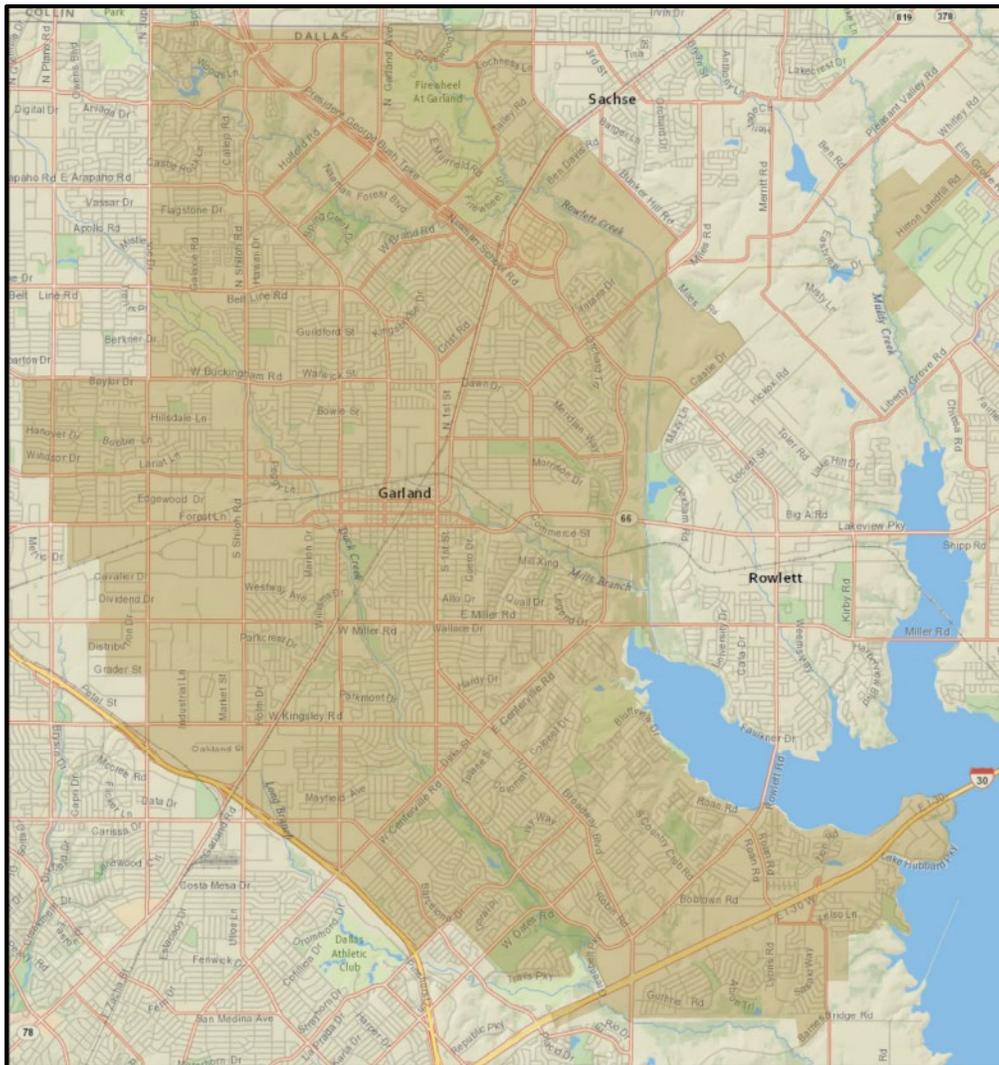
The Plan was uploaded to the Office of Emergency Management’s website and a physical copy was placed in the City Secretary’s Office for public comment and review on March 1, 2022. Outreach efforts were made to notify citizens of the opportunity for review through physical mailings, public education presentations, social media and the Office of Emergency Management’s website. A point of contact was also provided for residents to send additional comments privately.

Public outreach documentation located in Appendix C.



The planning area for this Hazard Mitigation Action Plan includes the City of Garland incorporated areas. The planning area is indicated by the darker tan shading in Figure 3.1. The City of Garland is primarily located in northeast Dallas County, although a small portion of the city extends into Collin County. Garland shares common boundaries with the City of Dallas, Richardson, Mesquite, Rowlett, Sachse, and Sunnyvale. The City of Garland covers a land area of 57.1 square miles, six percent of the total area of Dallas County.

**Figure 3.1 - City of Garland Incorporated Area**



Source: City of Garland GIS Department

## Population

The City of Garland, like many other Dallas-Fort Worth communities, continues to grow significantly each year. Much of Garland's population growth occurred during the 1960's, 1970's, and 1980's. The City of Garland is the second largest city in Dallas County, and is home to an estimated 242,035 residents (2021 Census estimate). Table 3.2 represents the City of Garland's population change from 1990 to July 2021.

**Table 3.2 – City of Garland Population**

Year	1990	2000	2009	2015	2021
<b>Population</b>	180,650	215,768	228,858	236,897	242,035

Source: United States Census Bureau, 2020 Decennial Census

## Community Features and Considerations

### Building Stock

The Dallas County Appraisal District Estimated Values Report for the City of Garland will be used in order to establish an accurate inventory of the types of buildings within the City of Garland. Table 3.3 shows the amount of parcels, estimated market value, and taxable value for commercial property, business personal property, residential property, and the combined totals for all three separate categories.

The City of Garland owns 144 property sites with an estimated value of \$1,685,532,783. Garland Independent School District (GISD) owns 100 property sites with an estimated value of \$1,600,000,000. Both City of Garland and GISD properties are tax-exempt; therefore, these properties are not reflected in the taxable or market values shown in Table 3.3.

**Table 3.3 - Certified Estimated Values Report (EVR)  
July 22, 2021 for tax year 2021**

Type of Building	Parcels	Market Value	Taxable Value
Commercial	4,519	\$6,410,767,420	\$5,010,058,007
Business Personal Property	5,925	\$2,336,194,130	\$2,017,522,860
Residential	64,814	\$13,327,520,650	\$10,937,825,133
Grand Total	75,258	\$22,074,482,200	\$17,965,406,000

Source: Dallas Central Appraisal District (DCAD), 07/22/2021

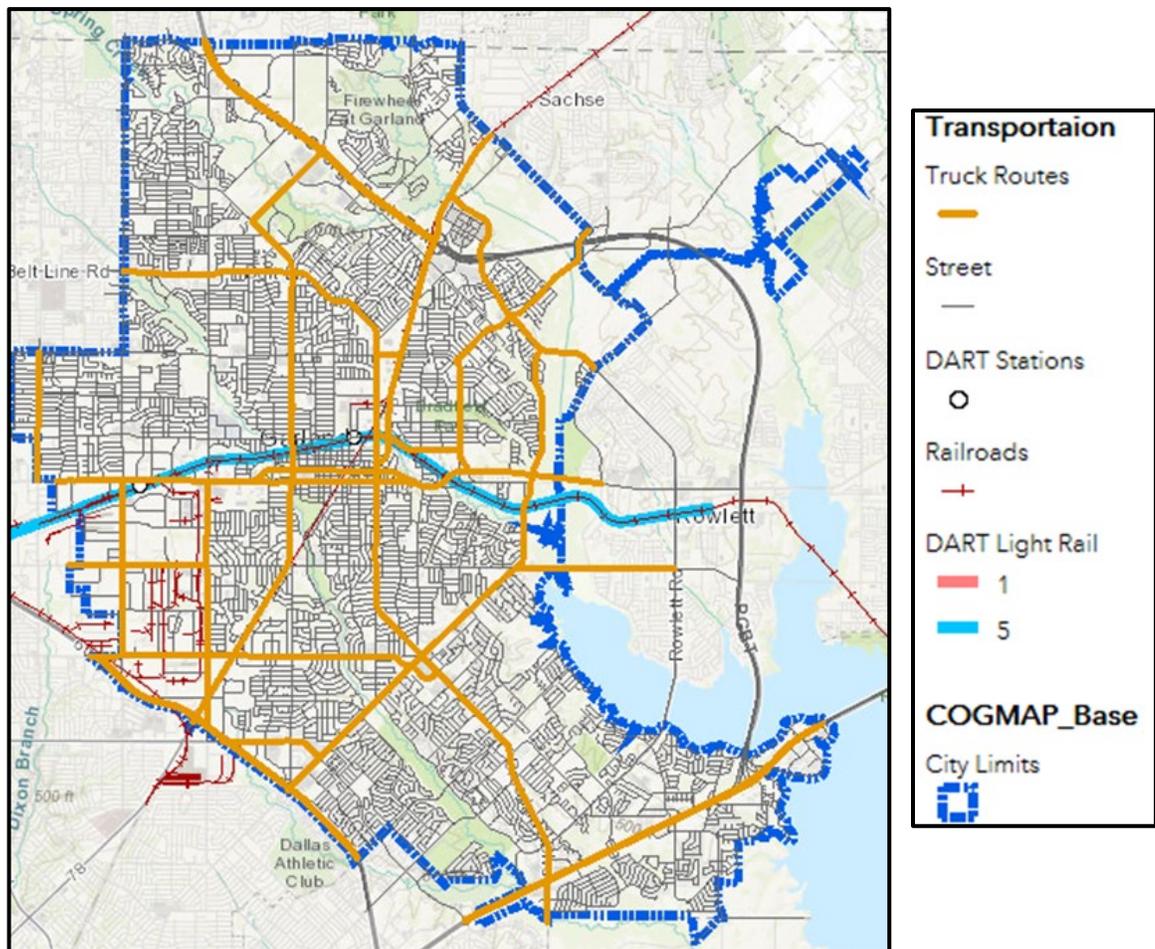
## Transportation

The City of Garland offers many transportation opportunities. Active transportation options include the Dallas Area Rapid Transit (DART) light rail system, railroads, highways, and a heliport.

There are five highways and thoroughfares that serve the City of Garland: Lyndon Baines Johnson (LBJ) Freeway (IH-635), President George Bush Turnpike (SH 190), IH-30, State Highway 78 and State Highway 66. LBJ Freeway, IH-30, State Highway 66, and the President George Bush Turnpike run primarily east to west. State Highway 78 runs primarily north to south.

In addition to the highway routes that pass through the City, several major transportation arteries cross through the City. Figure 3.4 identifies the transportation routes.

**Figure 3.4 - Transportation Routes**

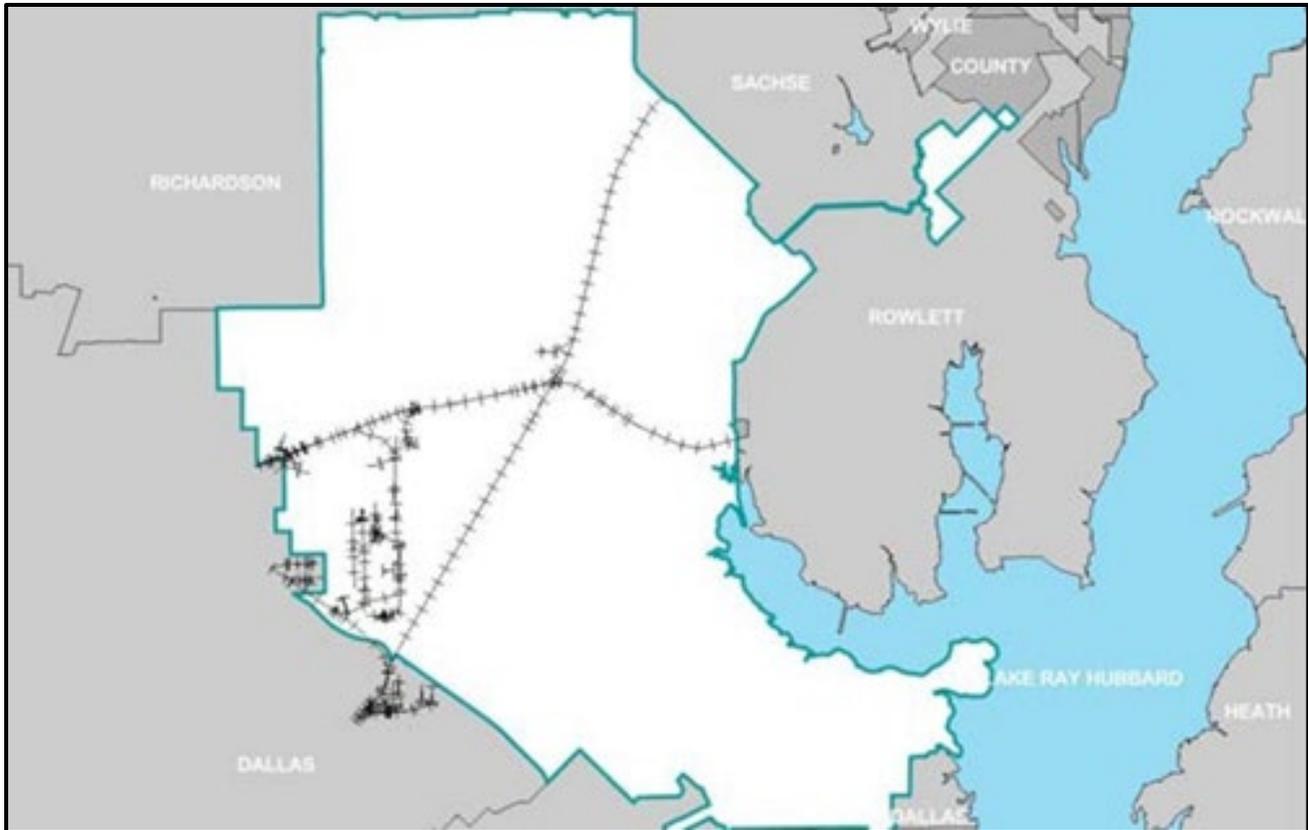


Source: City of Garland GIS Department

Two freight rail lines serve the City of Garland. Dallas Garland and Northeastern Railroad (DGNR) and Kansas City Southern Railroads pass through the city limits. Figure 3.5 depicts the rail systems in Garland.

The freight rail lines intersect with the DART passenger light rail system in central Garland. The DART light rail system is a public transportation system that links downtown Garland to the rest of the Dallas-Fort Worth area and extends east into Rowlett.

**Figure 3.5 – Railroad**



*Source: City of Garland GIS Department*

## Lifeline Utility Systems

The City of Garland owns and operates two state-of-the-art advanced biological wastewater treatment facilities. Wastewater is collected for each facility in two separate drainage basins, the Duck Creek Basin and the Rowlett Creek Basin. Wastewater is then received and treated at two separate facilities, the Rowlett Creek and Duck Creek Wastewater Treatment Centers. The Duck Creek Treatment Plant receives wastewater from the west side of Garland, and from portions of the cities of Dallas, Richardson and the Town of Sunnyvale. The Rowlett Creek Treatment Plant serves the east side of Garland including the cities of Rowlett and Sachse

Since 1923, the City of Garland has been providing electric service to its residents through Garland Power & Light (GP&L), a locally owned and controlled not-for-profit municipal utility. With more than 72,000 customers, GP&L is the fourth largest municipal utility in Texas and the 43<sup>rd</sup> largest in the nation.

GP&L's diverse energy portfolio includes power from natural gas, wind, solar and hydroelectric resources. The utility owns natural gas and hydroelectric generation facilities, and has power purchase contracts for wind and solar energy.

GP&L's electric distribution system has 387 linear miles of overhead lines and 613 linear miles of underground lines. The transmission system consists of 28 substations and 200 linear miles of transmission lines. The utility's peak load for 2021 was 467 megawatts, with annual operating revenues of \$298 million. The other 15% of Garland residents are served by ONCOR, a transmission and distribution provider that serves much of north Texas.

## Economic Elements

The labor force within the City of Garland stands at 121,323 according to the City of Garland's Workforce Profile. The unemployment rate for the City as of December 2021 is 3.7%. The Garland Independent School District is the largest employer within the City, employing 7,211. The top ten major employers are listed in Table 3.6.

**Table 3.6 - Top Ten Major Employers**

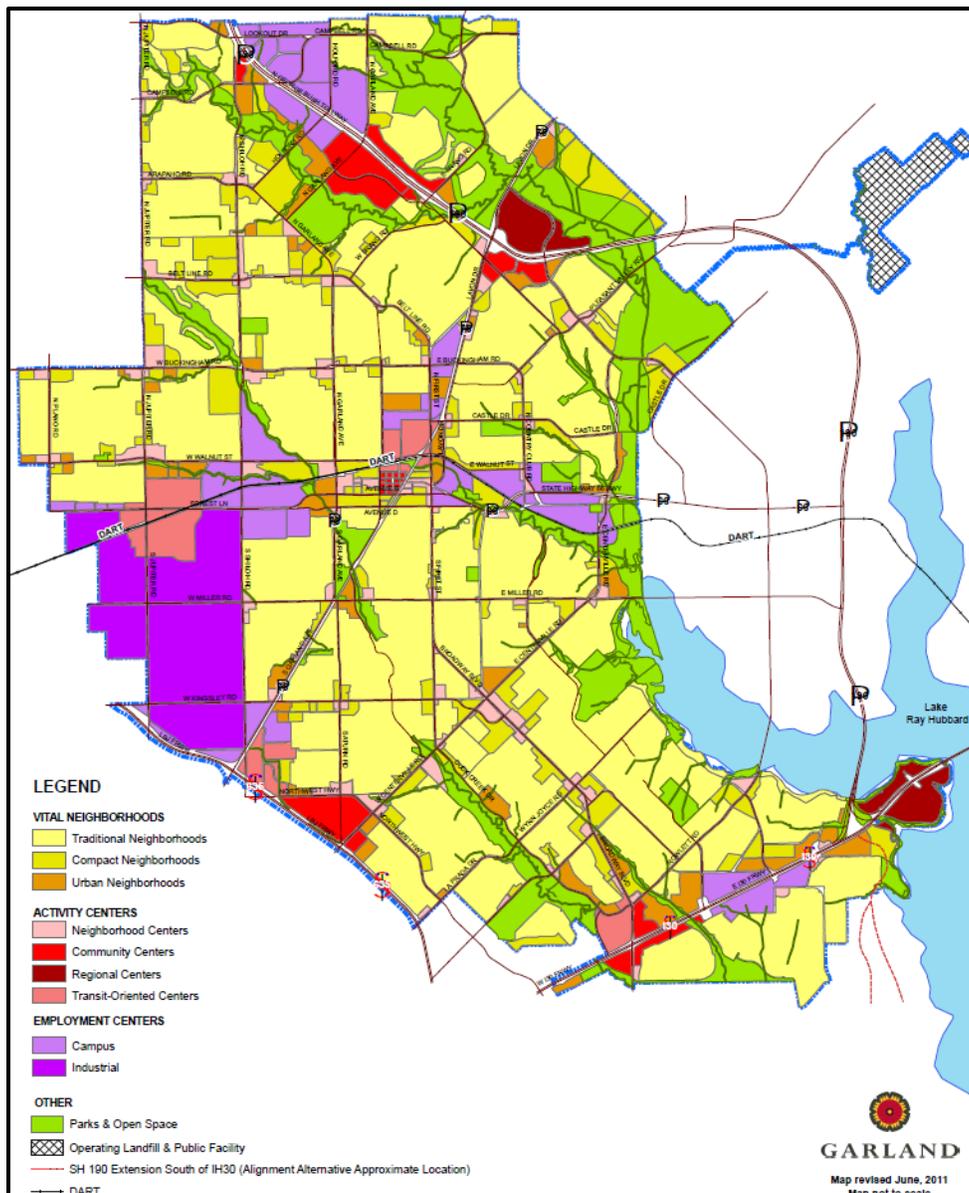
<b>Employer</b>	<b>Number of Employees</b>
Garland ISD	7,211
City of Garland	2,046
Kraft Heinz Company	1,222
Sherwin Williams	636
Epiroc Drilling Solutions	525
U.S. Food Service	520
Anderson Windows	425
Arrow Fabricated Windows	340
General Dynamics OTS	329
Bass Pro Shops	300

*Source: City of Garland Economic Development*

## Future Development Consideration

The City of Garland is legally required to have and maintain a comprehensive plan. Garland's first comprehensive plan was developed in the 1960's. A second plan was developed in the 1980s and was periodically updated. Envision Garland is the current comprehensive plan that addresses the community's future through 2030. This HazMAP has been extensively revised to reflect not only infrastructure and residence development, which has been minimal but also reflects the changes in hazards that now greatly affect the City. No significant changes in development have occurred in the past five years in Garland. Therefore, the vulnerability to all hazards is unchanged.

Figure 3.7 - Future Land Use





### Future Development Consideration

This section begins the risk assessment. The purpose of this section is to provide background information for the hazard identification and risk analysis process. Section five provides a hazard profile for each of the Planning Team’s identified hazards for the City of Garland. Each hazard profile includes a description of the hazard, location, severity, previous occurrences, probability of those hazards occurring in the future, impacts and summary of vulnerability to each hazard.

The City of Garland Planning Team initially reviewed the full range of natural hazards suggested under FEMA planning guidance. The team also considered the State of Texas Hazard Mitigation Plan identified hazards, Dallas County Hazard Mitigation Action Plan identified hazards, and other neighboring jurisdiction’s hazards and risk assessments. Based on this analysis and historical occurrences that have impacted Garland, the Team identified 31 natural and human-caused hazards that pose risk to Garland, Texas. Those hazards are listed below.

Active Shooter	Hazardous Materials Release (Fixed and Transport)
Aircraft Incident	Information Systems Failure
Biological Event	Lightning
Bomb Threat	Plant Explosion
Civil Disturbance	Power Outages
Communications Failure	Railroad Incidents
Dam Failure	Severe Winter Weather
Drought	Sewer and Treatment Plant Failure
Earthquake	Subsidence
Erosion	Terrorism
Expansive Soil	Tornado
Extreme Cold	VIP Situation
Extreme Heat	Water Failure
Flood	Wildfire
Fuel Shortage	Wind
Hail	

Those 31 potential hazards were included in the hazard assessment (Appendix E). The hazard assessment identified high-risk hazards, provided justification for resources spent and ensured risk and mitigation actions aligned. Because the City of Garland has limited funding, the Planning Team prioritized the hazards that have the greatest risk and impact to the City. As additional funding becomes available, the Planning Team will reassess the list of hazards. The Hazard Assessment used a formula that accounted for Geographic Area Affected, Probability of Future Events in the Next Year, Possibility of Death or Injury,

Interruption of Business Services, Preparedness, Response Time, and Effectiveness and Resources Available. Each member of the Planning Team completed a Hazard Assessment and assigned a percentage to all 31 previously identified hazards for each parameter to determine the risk for each hazard for Garland. The results of the hazard assessment determined Garland's top hazards that were then further evaluated in the Community Risk and Impact Assessment.

### **Acknowledgement: Climate Change**

Climate change includes both global warming and its impacts on Earth's weather patterns. Climate change has the potential to impact citizens due to increased flooding, extreme heat, more disease, and economic loss. With increasing global surface temperatures, the possibility of more droughts and increased intensity of storms will likely occur. Mitigation strategies include retrofitting buildings to make them more energy efficient; adopting renewable energy sources like solar, wind and small hydro; helping cities develop more sustainable transport such as bus rapid transit, electric vehicles, and biofuels; and promoting more sustainable uses of land and forests.

### **Hazard Ranking**

Listed are 14 hazards that were identified from the result of the hazard assessment. These are the hazards that will be addressed in the Hazard Mitigation Action Plan. FEMA “recognizes that a comprehensive strategy to mitigate the nation’s hazards cannot address natural hazards alone” and “that natural events can trigger technological disasters.” Technological hazards are distinct from natural hazards primarily in that they originate from human activity.

Biological Event	Extreme Heat
Communications Failure/Infrastructure Failure	Flood
Destructive Hail	Power Outages
Drought	Severe Thunderstorms/Damaging Winds
Earthquake	Severe Winter Weather
Erosion	Tornado
Expansive Soils	

Each member of the Planning Team completed a Hazard and Vulnerability Assessment, located in Appendix E. This assessment estimated the potential impact each hazard would have on specific areas of the community. These areas include Location, Probability, Human Impact, Business Impact, Preparedness, Internal Repose and External Response.

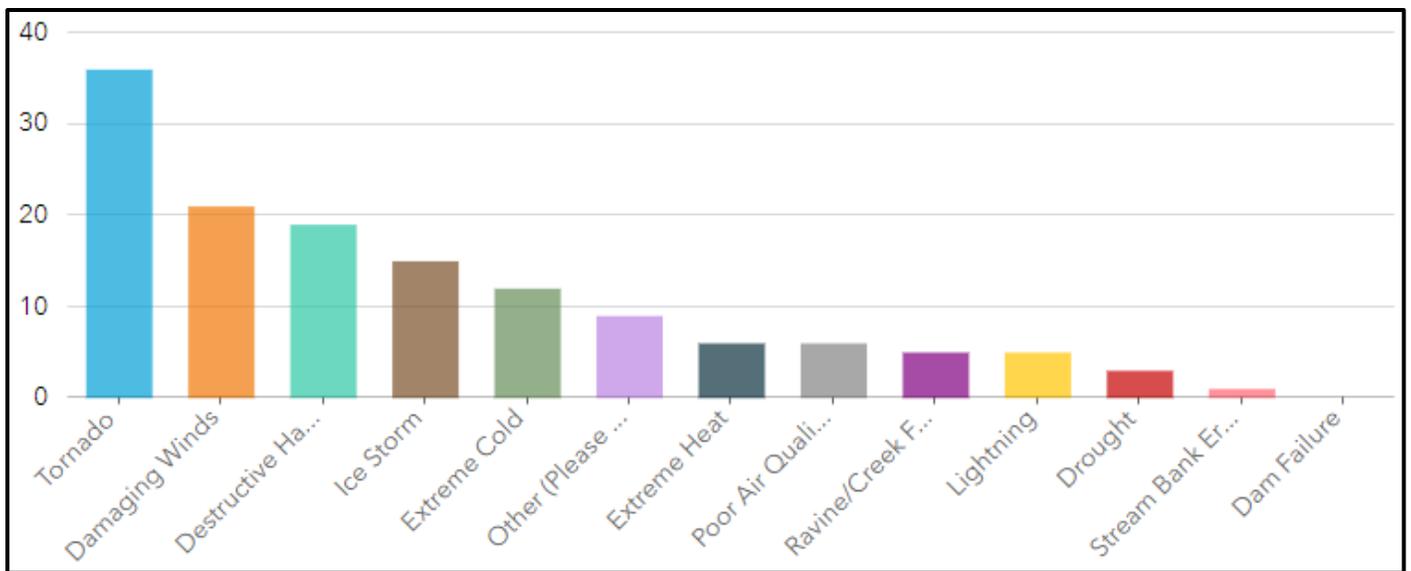
Each Planning Team member was asked to base their responses on their experience. Definitions of the parameters were provided for each impact type and level. These definitions are also located in Appendix E.

- A collective risk score was calculated using the Community Risk and Impact Assessment for each hazard based on the given definitions. The higher the score the higher the collective risk to the City of Garland.
- The Community Risk and Impact Assessment also assessed the Severity of Impact each hazard may have on the City of Garland and further prioritized the hazards to develop relevant mitigation actions.
- The Public Ranking represented in the Risk Summary table was derived from the results of the public survey (Figure 4.1).

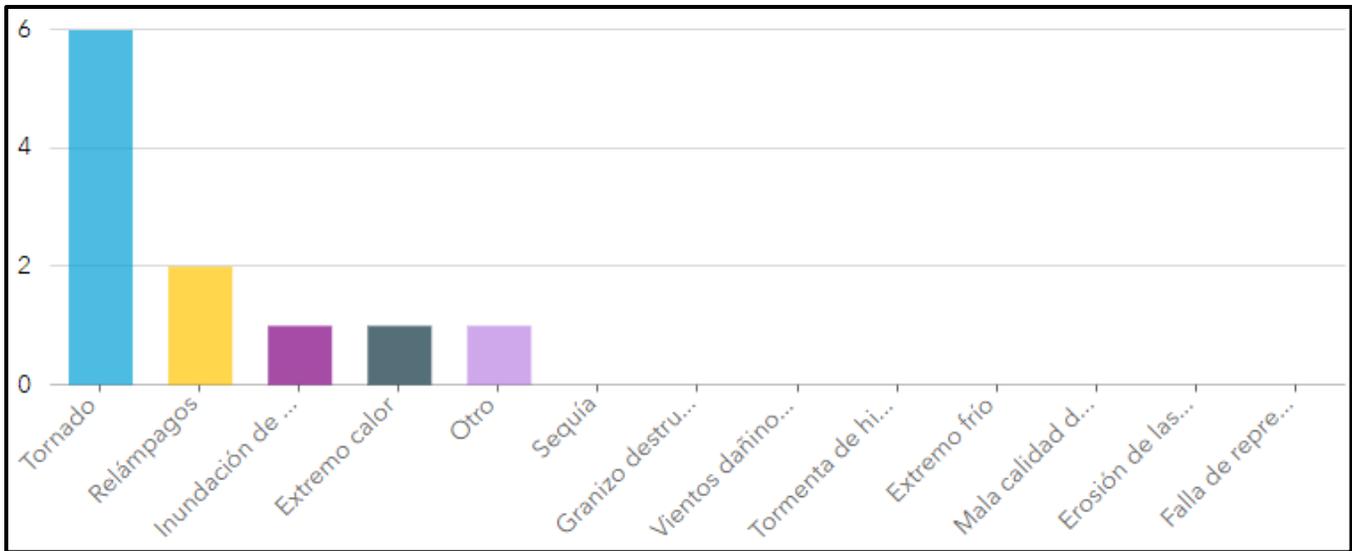
The combined analysis is shown in the Hazard Risk Summary in Table 4.5 (Frequency, Severity of Impact, Risk Score, Planning Team Risk Ranking and Public Ranking)

**Figure 4.1 - Public Survey Question**

*Please select the natural hazard that you think is the highest threat to your neighborhood (Select one):*



*English Survey Results*



Spanish Survey Results

**Table 4.2 - Public Survey Hazard Ranking**

Hazard	Combined Total
Tornado	42
Damaging Winds	21
Destructive Hail	19
Ice Storms	15
Extreme Cold	12
Other	10
Lightning	7
Extreme Heat	7
Ravine/Creek Flooding	6
Poor Air Quality	6
Drought	3
Stream Bank Erosion	1
Dam Failure	0

**Table 4.3 - Hazard Frequency Ranking**

<b>Frequency</b>	<b>Calculation</b>	<b>Probability Definition</b>
Highly Likely	NCDC Data Calculations > .8 Or continuous hazards	Event is probable in the next year.
Likely	NCDC Data Calculations > .4	Event is probable in the next 3 years.
Occasional	Previous Occurrence	Event is probable in the next 6 years.
Unlikely	No unlikely hazards in HazMAP	Event is probable in the next 10 years.

**Table 4.4 - Severity of Impact**

<b>Substantial</b>	Multiple deaths or complete shutdown of critical facilities and services for 1 week or more or more than 50% of property or residents impacted
<b>Major</b>	Multiple injuries and/or illnesses or complete shutdown of critical facilities/services for at least one or more days but less than a week or more than 25% of property or residents impacted
<b>Minor</b>	Injuries and/or illnesses do not result in permanent disability or critical facilities and services modified or more than 10 percent of property or residents impacted
<b>Limited</b>	Injuries and/or illnesses that are treatable with first aid or; Minor quality of life lost or no shutdown of critical facilities and services less than 5% of property or residents impacted

**Table 4.5 - Hazard Risk Summary**

<b>Hazard</b>	<b>Frequency</b>	<b>Severity of Impact</b>	<b>Risk Score</b>	<b>Risk Ranking</b>	<b>Public Ranking</b>
Tornado	Highly Likely	Substantial	54.4	High	High
Power Outages	Highly Likely	Substantial	48.53	High	High
Severe Winter Weather/Extreme Cold	Highly Likely	Substantial	48	High	High
Drought	Highly Likely	Substantial	41.5	High	High
Communications Failure/Infrastructure Failure	Highly Likely	Substantial	41.07	High	High
Flood	Highly Likely	Major	35.97	High	Moderate
Extreme Heat	Likely	Major	35.93	Moderate	Moderate
Severe Thunderstorms/Damaging Winds	Highly Likely	Minor	26.8	High	Moderate
Erosion	Likely	Minor	26.6	Moderate	Moderate
Expansive Soil	Highly Likely	Minor	26	High	Moderate
Biological Event	Highly Likely	Limited	22.2	High	Low
Destructive Hail	Highly Likely	Limited	20.17	High	Low
Earthquake	Occasionally	Limited	17.73	Low	Low

## Tornado

### Hazard Description

A tornado is defined as a rapidly rotating vortex or funnel of air extending ground ward from a cumulonimbus cloud. Most of the time, vortices remain suspended in the atmosphere. Spawned from powerful thunderstorms, tornadoes can cause fatalities and devastate neighborhoods in seconds. A tornado appears as a rotating, funnel-shaped cloud that extends from a thunderstorm to the ground with winds that can reach 300 miles per hour. According to the National Weather Service, the City of Garland is issued an average of 9-10 tornado watches per year.

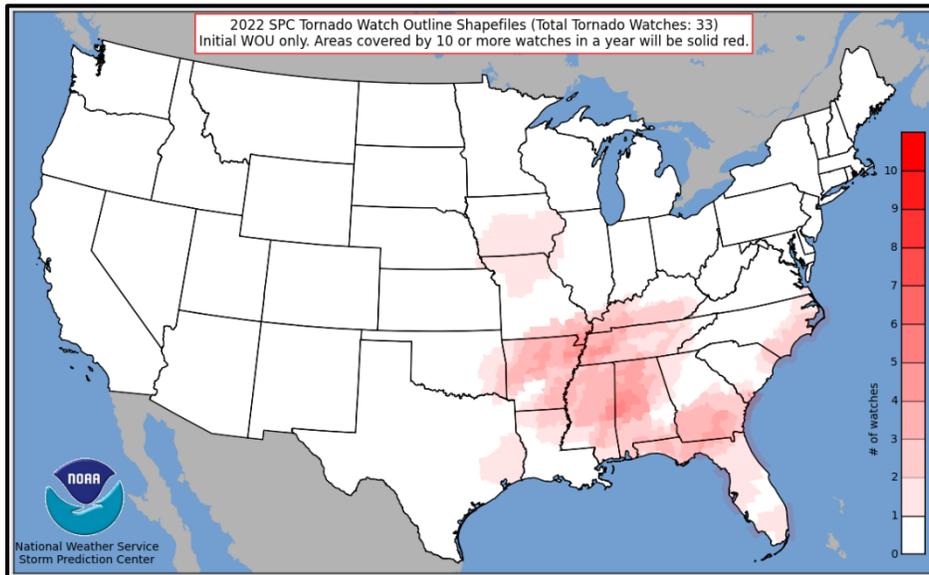
### Location

Due to the unpredictable nature of tornadoes, it is impossible to determine the exact area of future tornado occurrences. The entire planning area, the City of Garland, is equally vulnerable to tornadoes.

### Severity

The severity of a tornado can be determined by the Enhanced Fujita Scale. The Enhanced Fujita Scale rates tornadoes within the United States by estimating the amount of damage they cause. Table 5.2 provides a better understanding of the possible magnitude of tornado events. The table correlates the Enhanced Fujita Rating with the wind speed and severity of damage tornadoes may cause. An EF-4 tornado has impacted Dallas County before and it is expected that an EF-5 will occur in Garland sometime in the future.

**Figure 5.1 - NOAA’s Storm Prediction Center (2022)**



**Table 5.2 - Enhanced Fujita Scale**

F Scale	Character	Estimated Winds	Description
Zero (F0)	Weak	40-72 mph	<b>Light Damage.</b> Some damage to chimneys; branches broken off trees, shallow-rooted trees uprooted, signboards damaged.
One (F1)	Weak	73-112 mph	<b>Moderate damage.</b> Roof surfaces peeled off; mobile homes pushed foundations or overturned; moving autos pushed off road.
Two (F2)	Strong	113-157 mph	<b>Considerable damage.</b> Roofs torn from frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light objects become projectiles.
Three (F3)	Strong	158-206 mph	<b>Severe damage.</b> Roofs and some walls torn from well-constructed houses; trains overturned; most trees in forested area uprooted; heavy cars lifted and thrown.
Four (F4)	Violent	207-260 mph	<b>Devastating damage.</b> Well-constructed houses leveled; structures with weak foundation blown some distance; cars thrown; large missiles generated.
Five (F5)	Violent	260-318 mph	<b>Incredible damage.</b> Strong frame houses lifted off foundations, carried considerable distances, and disintegrated; auto-sized missiles airborne for several hundred feet or more; trees debarked.

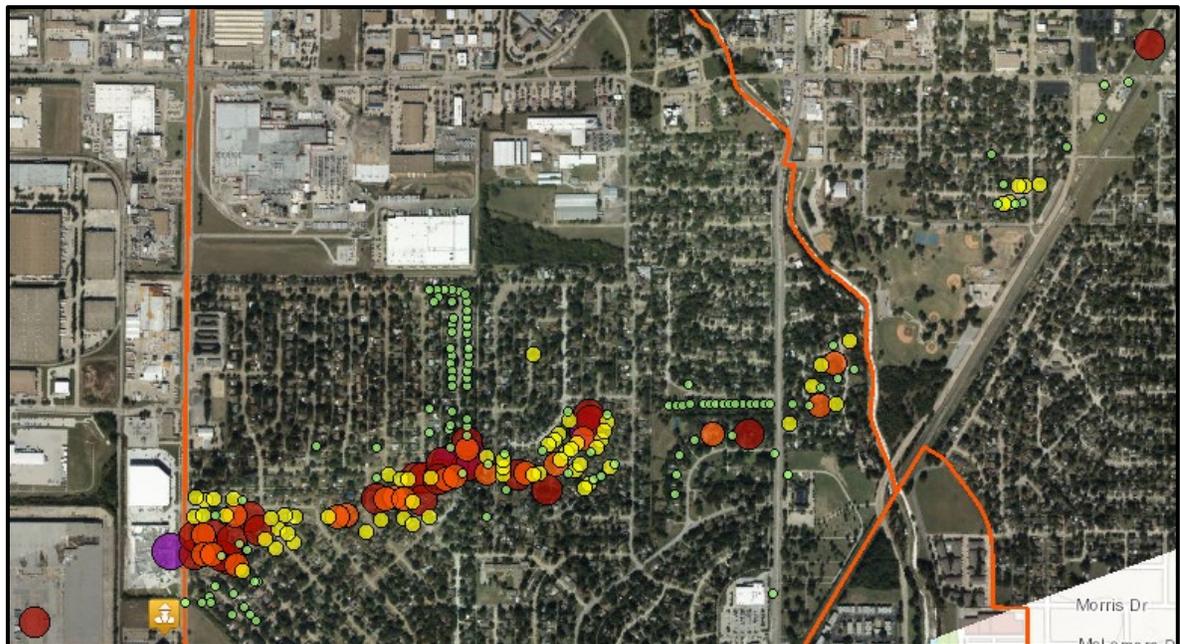
Source: [www.weather.gov/oun/efscale](http://www.weather.gov/oun/efscale)

### Previous Occurrences

On December 26, 2015, an EF-4 tornado with wind speeds of 180 mph impacted the City of Garland. The tornado left a 13-mile long and 550-yard wide path of destruction. The tornado caused nine fatalities on the George Bush Turnpike and caused damage to 440 single-family homes, 753 apartment units, 17 commercial buildings and 2 churches. About 48,000 cubic yards of debris had to be removed from the impacted area and 26 animals rescued. This tornado cost the City of Garland roughly \$1,703,320.00.

Additionally, on October 20, 2019, an EF-2 tornado with wind speeds reaching 135 mph impacted the City of Garland. The tornado left a 2.48-mile long path of destruction. This tornado struck and damaged several Sears-complex buildings and destroyed a 225,000 square-foot building at 1801 South Shiloh, before it traveled east-northeast for six minutes through central Garland, damaging a total of 174 homes and businesses. Waste Services and the Parks Department collected over 1646 tons of debris from affected areas, without outside support or the need to activate contracts. Parks cleared and an additional 39 tons of debris from Central Park. This tornado cost the City of Garland roughly \$2,766,073.43 in public property damages.

**Figure 5.3 - Tornado Path**

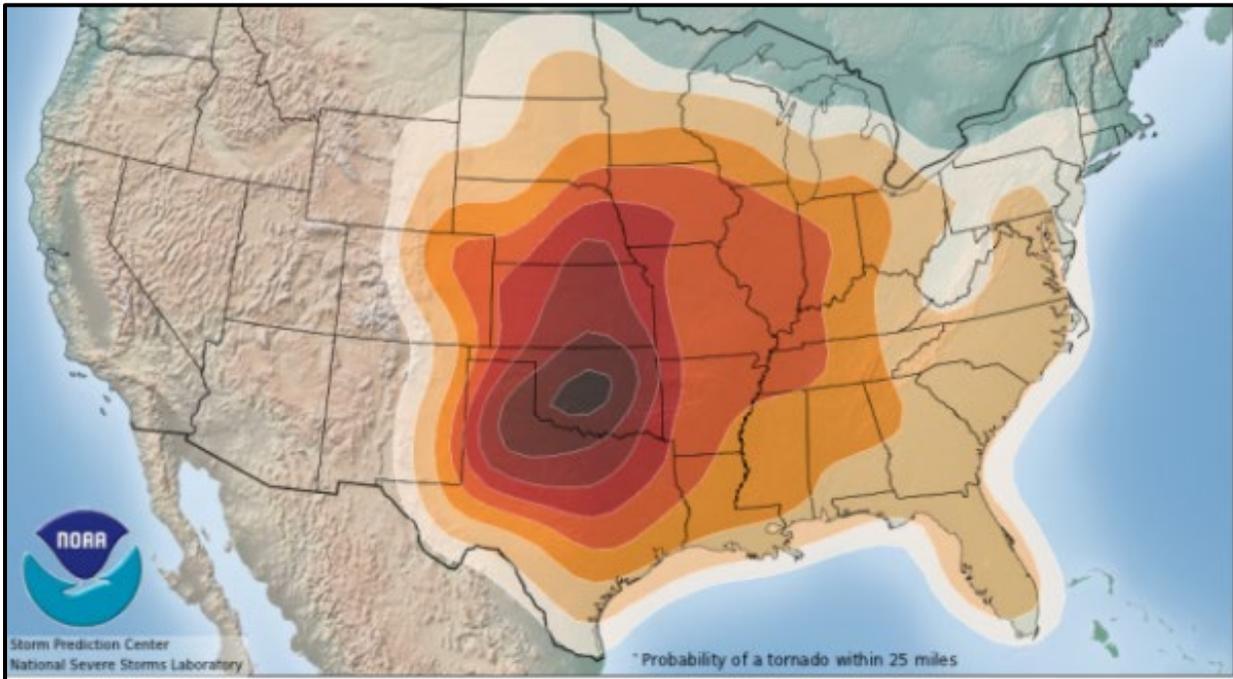


*Source: City of Garland GIS Department*

### Probability of Future Events

The City of Garland sits in “Tornado Alley,” and has a high vulnerability to tornadoes. Previous historical data in Table 5.5 shows ninety-seven tornadoes occurring within Dallas County since 1952. Data is not currently available specifically for the City of Garland. Calculations from this data suggests that a tornado will impact Dallas County 1.5 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely for a tornado to occur within Dallas County in the next year.

**Figure 5.4 – Tornado Probability**



Source: National Oceanic and Atmospheric Administration

### **Impact on Community**

A future event is obviously capable of doing substantial damage to the community. The city is the second largest in Dallas County with an estimated 246,018 residents as of April 1, 2020. Infrastructure within the region is also for the most part built out. This makes warning time critical. A large population of residents would have little time to react to such an event. A tornado of medium severity (EF-2 or EF-3) would be capable of doing great damage in such a heavily populated area.

Table 5.5 shows previous tornado occurrences from the National Climatic Data Center for all of Dallas County, Texas between 1/1/1952 and 12/31/2021. 106 tornadoes have been reported in Dallas County. They have caused 23 deaths, 836 injuries, and an estimated \$2,554,473,030 in damage. Regionally, tornadoes have accounted for \$70.1 million in losses since 1996.

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to tornados. A large tornado event is capable of producing winds that can reach 300 miles per hour. Damage paths can be in excess of one-mile-wide and 50 miles long. The Hazard Mitigation Planning Team has determined that the City of Garland is at high risk of substantial impacts from tornados due to the number of previous occurrences combined with the impacts of those occurrences. All residential neighborhoods, businesses, critical facilities, infrastructure and populations are vulnerable to tornados. In addition, there is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk from impact of a tornado.

**Table 5.5 – Tornado Historical Data**

<b>County</b>	<b>Dates</b>	<b>Event Type</b>	<b>EF Scale</b>	<b>Deaths</b>	<b>Injuries</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas	3/2/1952	Tornado	F0	0	0	2,500	0
Dallas	4/2/1957	Tornado	F3	10	200	2,500,000	0
Dallas	4/3/1957	Tornado	F0	0	0	250	0
Dallas	4/20/1957	Tornado		0	0	30	0
Dallas	6/12/1957	Tornado	F3	0	0	2,500	0
Dallas	8/12/1958	Tornado	F2	0	0	2,500	0
Dallas	10/4/1959	Tornado	F3	0	0	250,000	0
Dallas	5/5/1960	Tornado	F0	0	0	0	0
Dallas	5/5/1960	Tornado	F0	0	0	2,500	0
Dallas	4/11/1961	Tornado	F2	0	3	25,000	0
Dallas	5/27/1963	Tornado	F0	0	0	0	0
Dallas	5/29/1963	Tornado	F0	0	0	0	0
Dallas	9/5/1963	Tornado		0	0	0	0
Dallas	5/23/1966	Tornado	F2	0	0	25,000	0
Dallas	3/26/1967	Tornado	F0	0	0	0	0
Dallas	5/13/1968	Tornado	F1	0	0	250	0
Dallas	5/25/1968	Tornado	F0	0	1	25,000	0
Dallas	5/8/1969	Tornado	F0	0	0	0	0
Dallas	10/12/1969	Tornado	F3	0	2	2,500	0
Dallas	4/25/1970	Tornado	F2	0	12	2,500,000	0
Dallas	2/18/1971	Tornado	F1	0	0	2,500	0
Dallas	10/19/1971	Tornado	F1	0	2	250,000	0
Dallas	12/14/1971	Tornado	F1	0	1	2,500,000	0
Dallas	12/14/1971	Tornado	F1	0	1	25,000	0
Dallas	12/14/1971	Tornado	F1	0	0	250,000	0
Dallas	12/14/1971	Tornado	F2	0	4	2,500,000	0
Dallas	12/14/1971	Tornado	F1	0	4	2,500,000	0
Dallas	11/12/1972	Tornado	F1	0	0	25,000	0
Dallas	11/12/1972	Tornado	F1	0	0	250,000	0
Dallas	5/1/1973	Tornado	F1	0	0	25,000	0
Dallas	4/11/1974	Tornado	F2	0	0	250,000	0
Dallas	6/12/1974	Tornado		0	0	0	0
Dallas	6/8/1975	Tornado	F0	0	0	0	0
Dallas	7/25/1975	Tornado	F0	0	0	0	0
Dallas	3/26/1976	Tornado	F1	0	0	250	0
Dallas	5/26/1976	Tornado	F3	0	1	2,500,000	0
Dallas	7/4/1976	Tornado		0	0	2,500	0

Dallas	4/20/1977	Tornado	F2	0	0	25,000	0
Dallas	5/3/1979	Tornado	F1	0	0	25,000	0
Dallas	5/3/1979	Tornado	F1	0	0	25,000	0
Dallas	5/3/1979	Tornado	F2	0	5	25,000,000	0
Dallas	5/3/1979	Tornado	F0	0	0	250	0
Dallas	5/8/1981	Tornado	F2	0	0	25,000	0
Dallas	10/13/1981	Tornado	F1	0	0	0	0
Dallas	3/14/1982	Tornado	F1	0	0	250,000	0
Dallas	4/16/1982	Tornado	F0	0	0	0	0
Dallas	5/11/1982	Tornado	F1	0	1	250,000	0
Dallas	3/23/1984	Tornado	F1	0	0	25,000	0
Dallas	12/13/1984	Tornado	F3	0	0	25,000,000	0
Dallas	12/13/1984	Tornado	F3	0	28	25,000,000	0
Dallas	5/13/1985	Tornado	F2	0	16	2,500,000	0
Dallas	3/16/1987	Tornado	F0	0	0	0	0
Dallas	1/19/1990	Tornado	F2	0	1	2,500,000	0
Dallas	10/7/1992	Tornado	F0	0	0	2,500	0
Dallas	5/9/1993	Tornado	F1	0	1	5,000,000	0
Dallas	4/25/1994	Tornado	F0	0	0	50,000	0
Dallas	4/25/1994	Tornado	F2	0	7	50,000,000	0
Dallas	4/25/1994	Tornado	F4	3	48	500,000	0
Dallas	4/29/1994	Tornado	F0	0	0	0	0
Dallas	10/21/1994	Tornado	F0	0	0	0	0
Dallas	10/21/1994	Tornado	F0	0	0	0	0
Dallas	10/21/1994	Tornado	F0	0	0	0	0
Dallas	10/21/1994	Tornado	F0	0	0	0	0
Dallas	3/25/1995	Tornado	F0	0	0	0	0
Dallas	4/19/1995	Tornado	F0	0	0	0	0
Dallas	4/19/1995	Tornado	F1	0	8	6,000,000	0
Dallas	1/17/1996	Tornado	F1	0	1	750,000	0
Dallas	1/17/1996	Tornado	F2	0	0	750,000	0
Dallas	1/17/1996	Tornado	F1	0	0	0	0
Dallas	1/17/1996	Tornado	F1	0	0	0	0
Dallas	1/17/1996	Tornado	F0	0	0	0	0
Dallas	1/17/1996	Tornado	F0	0	0	0	0
Dallas	1/17/1996	Tornado	F1	0	0	0	0
Dallas	10/21/1996	Tornado	F1	0	7	3,000,000	0
Dallas	10/21/1996	Tornado	F0	0	1	120,000	0
Dallas	3/28/2000	Tornado	F2	0	0	0	0

Dallas	3/28/2000	Tornado	F0	0	0	0	0
Dallas	9/5/2001	Tornado	F1	0	0	125,000	0
Dallas	4/5/2003	Tornado	F0	0	0	1,000	0
Dallas	4/25/2005	Tornado	F0	0	0	0	0
Dallas	4/13/2007	Tornado	EF0	0	0	50,000	0
Dallas	6/26/2007	Tornado	EF0	0	0	60,000	0
Dallas	4/10/2008	Tornado	EF1	0	0	1,000,000	0
Dallas	9/8/2010	Tornado	EF1	0	0	200,000	0
Dallas	9/8/2010	Tornado	EF2	0	1	750,000	0
Dallas	5/24/2011	Tornado	EF1	0	0	150,000	0
Dallas	5/24/2011	Tornado	EF0	0	0	0	0
Dallas	4/3/2012	Tornado	EF2	0	10	400,000,000	3,000
Dallas	4/3/2012	Tornado	EF0	0	0	4,000	0
Dallas	4/3/2012	Tornado	EF0	0	0	100,000	0
Dallas	4/3/2012	Tornado	EF0	0	0	150,000	0
Dallas	4/3/2012	Tornado	EF0	0	2	300,000	0
Dallas	5/8/2014	Tornado	EF0	0	0	80,000	0
Dallas	5/24/2015	Tornado	EF1	0	0	100,000	0
Dallas	5/24/2015	Tornado	EF1	0	0	600,000	0
Dallas	12/26/2015	Tornado	EF3	0	0	1,370,000	0
Dallas	12/26/2015	Tornado	EF4	10	468	26,000,000	0
Dallas	1/15/2017	Tornado	EF0	0	0	120,000	0
Dallas	3/9/2019	Tornado	EF0	0	0	10,000	0
Dallas	6/16/2019	Tornado	EF0	0	0	20,000	0
Dallas	10/20/2019	Tornado	EF3	0	0	1,550,000,000	0
Dallas	10/20/2019	Tornado	EF2	0	0	400,000,000	0
Dallas	10/20/2019	Tornado	EF1	0	0	10,000,000	0
Dallas	1/10/2020	Tornado	EF0	0	0	15,000	0
Dallas	5/16/2021	Tornado	EF0	0	0	2,000	0
Dallas	5/16/2021	Tornado	EF1	0	0	50,000	0

Source: NOAA Storm Events Database

## Severe Winter Weather/Extreme Cold

### Hazard Description

Severe winter weather can be a variety of precipitation that forms at low temperatures such as heavy snowfall, sleet or ice. Many winter depressions give rise to exceptionally heavy rain and widespread flooding. Conditions worsen if the precipitation is frozen.

### Location

Due to the unpredictable nature of winter storms, it is impossible to determine the exact area of their future occurrences. The entire planning area, City of Garland, is equally subject to severe winter weather.

### Severity

Table 5-10 shows the National Weather Service Wind Chill Temperature (WCT) index. It uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. The index:

- Calculates wind speed at an average height of five feet
- Incorporates heat transfer theory which is heat loss from the body to its surroundings during cold windy days
- Lowers the calm wind threshold to 3 mph
- Uses a consistent standard for skin tissue resistance
- Assumes no impact from the sun (i.e., clear night sky)

The lowest temperature recorded in Garland was 2 ° in 1949; 0.8 inches of snow fell as well. Although temperatures are increasing, severe winter weather remains a threat to Garland and it is possible that temperatures could reach record lows again in the future.

Table 5.6

**NWS Windchill Chart**

		Temperature (°F)																		
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (mph)	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	
	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98		

Frostbite Times: 30 minutes (light blue), 10 minutes (medium blue), 5 minutes (dark blue)

**Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V<sup>0.16</sup>) + 0.4275T(V<sup>0.16</sup>)**  
 Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01

## **Previous Occurrences**

Several major severe winter weather events have impacted Garland over the past few years. Most recently, a cold front moved into the Dallas area beginning February 10, 2021. With this cold air in place, lingering precipitation the following day fell as sleet and freezing rain across the northwestern counties. Freezing drizzle occurred across much of the region, which led to a thin coating of nearly invisible ice on many roadways. School districts were closed for the duration of the event and most municipal courts and solid waste services had to be cancelled or postponed.

In 2013, Winter Storm Cleon delivered snow, sleet, and freezing rain in Dallas County from December 1, 2013 through the morning of December 7, 2013. Garland had the following impacts from this winter weather event: approximately 200 reports of downed trees, 3,500 power outages, 7 house fires, City facility walkways iced over, one fire station could not take calls due to affected power lines, City services and staffing levels were modified, Garland Independent School District closed early, Dallas Area Rapid Transit (DART) light rails were not operational and major increases of vehicle accidents.

## **Probability of Future Events**

Severe winter weather within Dallas County occurs several times a year, although the severity of impact varies. Previous historical data in Table 5.7 shows 67 severe winter weather events have occurred within Dallas County since 1996. Data is not currently available specifically for the City of Garland. Calculations from this data suggests that a severe winter weather event will impact Dallas County 2.58 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely for a severe winter weather event to occur within the next year.

## **Impact on Community**

City of Garland residents are generally unfamiliar with snow, ice and freezing temperatures. When temperatures fall below freezing this kills tender vegetation, such as flowering plants and citrus fruit crops. Wet snow and ice rapidly accumulates on trees with leaves, causing the branches to snap under the load. Motorists are unaccustomed to driving on slick roads and accidents increase exponentially. Some buildings are poorly insulated or lack heat altogether, forcing residents to live in freezing temperatures. While snowstorms are not frequent in Texas, ice storms create dangerous driving conditions causing an increase in accidents. Pipes freeze and leave residents without water and damage to their homes. Power lines and trees snap due to the weight of the ice on them leaving residents unable to run the heater in their homes. Because more than half of residents are impacted by large severe winter weather, the Planning Team has determined that impacts are substantial.

The biggest concern with severe winter weather is the previously stated nature of residents being unaccustomed to it. Although Dallas County is impacted by some form of severe winter weather several times a year, large incidents are not as frequent. This brings up safety concerns, as some are not educated on how to properly deal with large amounts of snow and ice. According to the National Climatic Data Center, 58 severe winter weather events have been reported in Dallas County, Texas between 1/1/1996 and 12/31/2021. They have caused three deaths, and caused an estimated \$20,280,000 in property damage. Regionally, winter weather has accounted for \$16.7 million in losses since 1996.

**Table 5.7 – Winter Weather Historical Data**

<b>County</b>	<b>Date</b>	<b>Event Type</b>	<b>Deaths</b>	<b>Property Damage</b>
Dallas	2/1/1996	Heavy Snow	0	0
Dallas	11/24/1996	Winter Storm	0	0
Dallas	1/6/1997	Heavy Snow	0	0
Dallas	1/12/1997	Winter Weather	0	0
Dallas	1/14/1997	Winter Weather	0	0
Dallas	12/22/1998	Ice Storm	0	0
Dallas	1/25/2000	Winter Storm	1	0
Dallas	12/12/2000	Winter Storm	0	0
Dallas	12/25/2000	Winter Storm	0	0
Dallas	12/31/2000	Winter Storm	0	0
Dallas	1/1/2001	Heavy Snow	0	0
Dallas	11/28/2001	Ice Storm	0	0
Dallas	2/5/2002	Winter Storm	0	0
Dallas	3/2/2002	Winter Storm	0	0
Dallas	2/24/2003	Winter Storm	0	0
Dallas	2/14/2004	Heavy Snow	0	0
Dallas	12/22/2004	Winter Weather	0	0
Dallas	12/7/2005	Winter Storm	0	0
Dallas	2/18/2006	Winter Weather	0	0
Dallas	11/30/2006	Winter Storm	0	20,000
Dallas	1/13/2007	Ice Storm	0	50,000
Dallas	1/17/2007	Winter Weather	0	20,000
Dallas	2/1/2007	Winter Weather	0	0
Dallas	12/15/2008	Winter Weather	0	0
Dallas	12/23/2008	Winter Weather	0	0
Dallas	1/5/2009	Winter Weather	0	35,000
Dallas	1/27/2009	Ice Storm	1	300,000
Dallas	12/24/2009	Winter Weather	0	250,000
Dallas	1/7/2010	Winter Weather	0	700,000
Dallas	2/11/2010	Heavy Snow	0	16,000,000
Dallas	3/20/2010	Winter Weather	0	100,000
Dallas	2/1/2011	Ice Storm	0	500,000
Dallas	2/3/2011	Heavy Snow	0	150,000
Dallas	12/5/2013	Winter Storm	0	2,000,000
Dallas	2/10/2014	Winter Weather	0	0
Dallas	2/22/2015	Winter Storm	0	25,000
Dallas	3/4/2015	Winter Weather	0	0
Dallas	3/4/2015	Sleet	0	0
Dallas	3/4/2015	Sleet	0	0
Dallas	3/4/2015	Heavy Snow	0	0
Dallas	3/5/2015	Winter Weather	0	0

Dallas	3/5/2015	Winter Weather	0	0
Dallas	3/5/2015	Sleet	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	3/5/2015	Heavy Snow	0	0
Dallas	12/7/2017	Winter Weather	0	0
Dallas	12/31/2017	Winter Weather	0	10,000
Dallas	1/16/2018	Winter Weather	0	0
Dallas	2/11/2018	Winter Weather	0	0
Dallas	2/28/2019	Winter Weather	0	10,000
Dallas	2/28/2019	Winter Weather	0	0
Dallas	2/10/2021	Winter Weather	0	100,000
Dallas	2/11/2021	Winter Weather	0	10,000
Dallas	2/13/2021	Winter Storm	1	0

**Summary of Vulnerability**

The entire planning area is equally vulnerable to severe winter weather. The Planning Team has determined that the City is at high risk of substantial impact from severe winter weather. The biggest concern to the planning area is maintaining power to structures, as winter weather may cause disruptions. The other concern is the citizen’s inexperience in preparing for the highly likely severe winter weather events. Severe winter weather has an increased impact on vulnerable populations and properties, including the elderly, transients and those in homes without adequate heating capabilities. These storms would also have an increase vulnerability on all overhead utility lines, streets and highways, especially overpasses. Electric services may be interrupted due to impacted overhead utility lines being damaged. In addition, there is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from severe winter weather.

## Biological Event

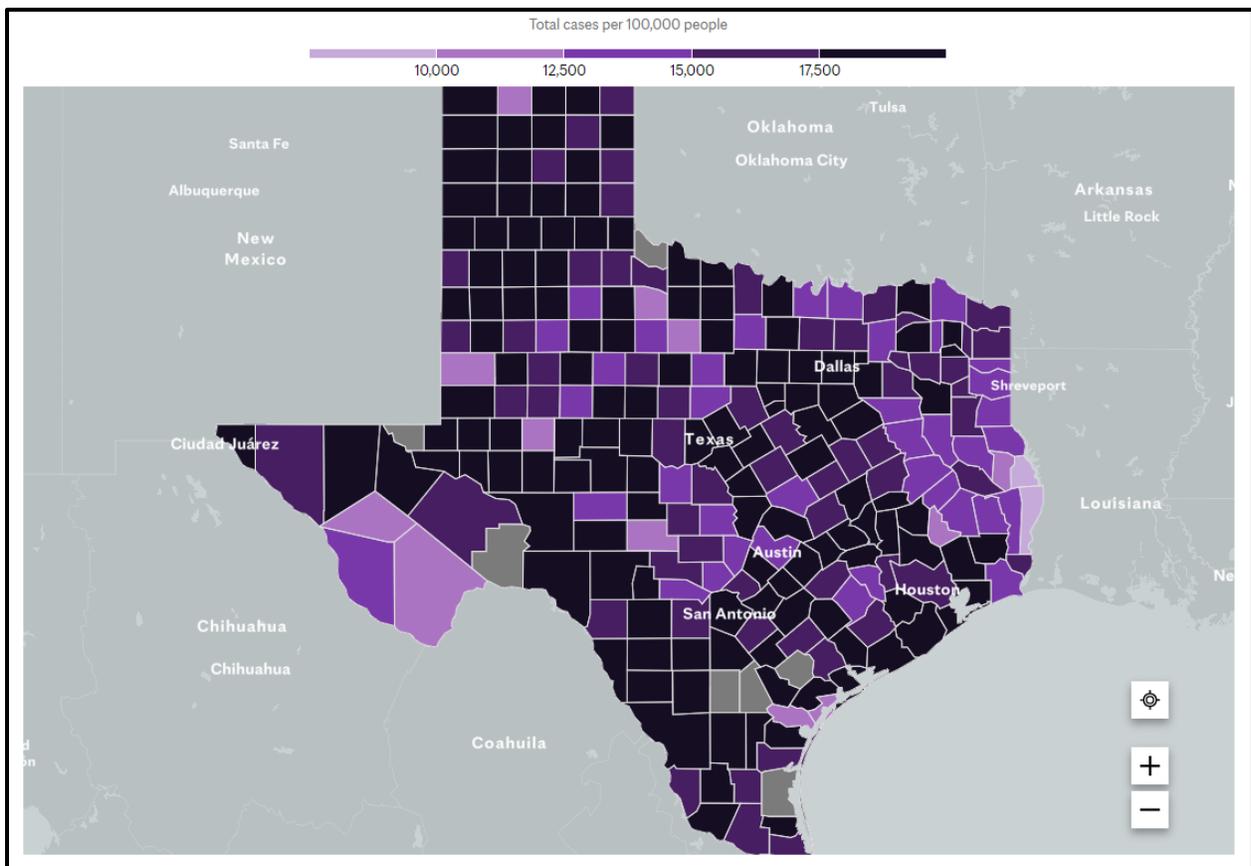
### Hazard Description

In this section, biological hazards refer to an accidental or naturally occurring disease outbreak of known or unknown origin that poses a threat to the health of living organisms, primarily that of humans. This definition also includes those biological agents found in the environment, or diagnosed in animals, that have the potential for transmission to humans. Examples of biological events include but are not limited to: COVID-19, Zika, H1N1, Ebola, and West Nile.

### Location

Because of the mobile nature of populations, it is impossible to map the location of biological events. The City of Garland is equally subject to biological events.

Figure 5.9

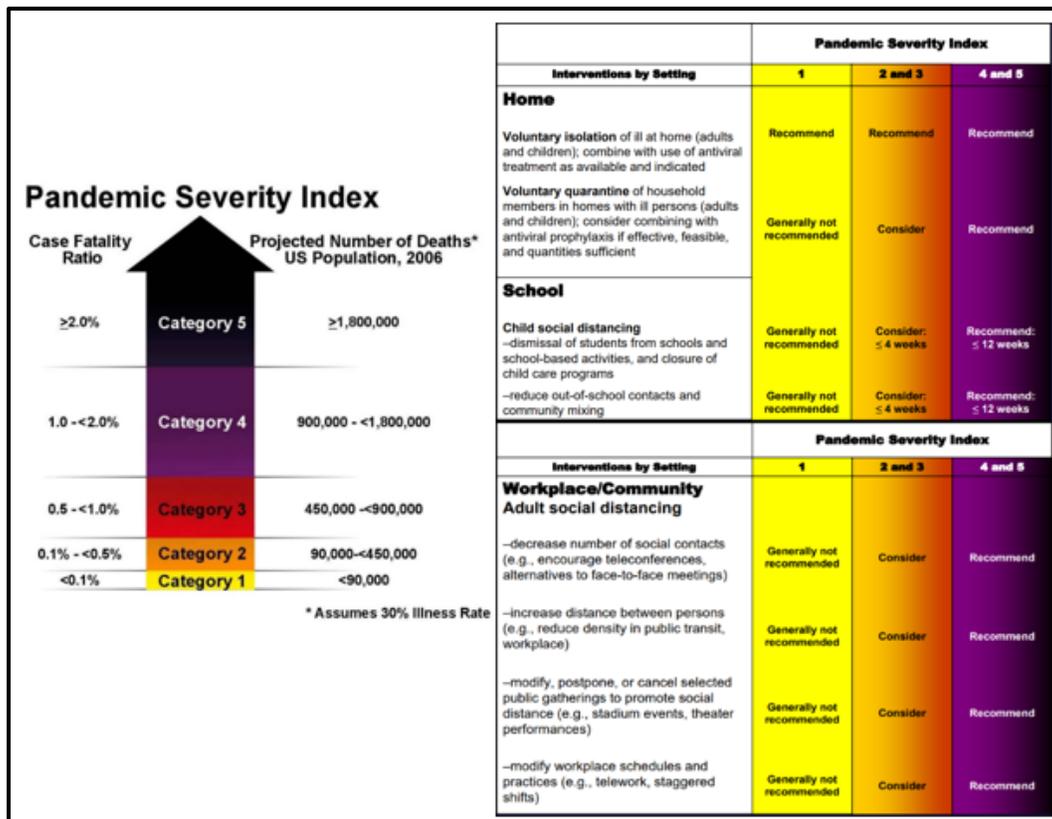


Source: Mayo Clinic

## Severity

The Center for Disease Control and Prevention (CDC) determines the severity of pandemics and communicable disease outbreaks based on a measurement system known as the Pandemic Severity Index. The main criteria used to measure pandemic severity will be the case-fatality ratio (CFR), the percentage of deaths out of the total reported cases of the disease. Accompanying the Pandemic Severity Index is the Interventions by setting table that can be used as a guide for mitigation actions during a biological event. In Table 5.31 below, these tools are illustrated. Several biological events have affected Garland and it is expected that another will occur in the future.

Table 5.10



Source: [www.cdc.gov/media/pdf/MitigationSlides.pdf](http://www.cdc.gov/media/pdf/MitigationSlides.pdf)

## Previous Occurrences

Texas Governor Greg Abbott issued a disaster proclamation on March 13, 2020, certifying under Section 418.014 of the Texas Government Code that the novel coronavirus (COVID-19) poses an imminent threat of disaster for all counties in the State of Texas. As of March 14, 2022, the City of Garland has confirmed 60,095 positive COVID-19 cases. Of those cases, 59,123 have recovered and 743 have died. COVID-19 is an ongoing issue worldwide.

On October 17, 2014, the City of Garland Public Health Department reported that three cases of Ebola had been confirmed in Dallas County since September 28. At least five contacts in Garland were monitored by Dallas County Health and Human Services. These contacts were on an airplane with a nurse that tested positive for the virus. One of the contacts in Garland was asked by Dallas County Health to stay home for 21 days, was monitored twice a day by phone, and was told not to travel. The four additional Garland contacts were considered extremely low risk. They self-monitored twice a day by phone. Approximately 177 people in the Dallas area fell under some type of quarantine.

### **Probability of Future Events**

The occurrence of a biological event is largely impossible to predict, due to the mobile nature of humans and the speed at which a pathogen can spread and mutate. Three biological events have occurred within Dallas County, with a direct impact on the City of Garland, since 2009. Calculations from this data suggests that a biological event will occur in Dallas County and subsequently the City of Garland, 0.4 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely a biological event will occur in Garland within the next three years.

### **Impact on Community**

The potential impact of loss of life and illness from a large biological event is major. Government service levels could potentially be modified to prevent the spread of illness.

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to biological events. The probability of a biological event occurring in Garland to some extent within the next three years is highly likely. This type of hazard has the potential to cause major impacts to the lives of Garland residents. These factors make a biological hazard a high risk for the City of Garland. The most vulnerable individuals to biological agents would be those who live and work in areas with frequent interpersonal contact, those with compromised immune systems, the young, the elderly, and individuals who travel frequently. There is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from biological event.

# Flood

## Hazard Description

Floods are the most prevalent hazard in the United States. A flood is defined as two or more acres of dry land or two or more properties that are covered by water temporarily. There are three types of flooding that occur in Garland: river, inland and flash flooding. Two types of floods that do not affect Garland are coastal floods and storm surges.

A river flood occurs when water levels rise over the top of riverbanks due to excessive rain or persistent thunderstorms over the same area for extended periods.

Inland flooding occurs when moderate precipitation accumulates over several days where intense precipitation falls over a short period.

A flash flood is caused by heavy or excessive rainfall in a short period, generally less than six hours. Flash floods are usually characterized by raging torrents after heavy rains that rip through riverbeds and urban streets. They can occur within minutes or a few hours of excessive rainfall. They can also occur when no rain has fallen in the area or after a levee or dam has failed. Figure 5.11 shows one of six high water crossing areas in the City of Garland. This particular location is the Holford Road Bridge, which is at high risk for flash flooding when the City of Plano experiences a high rate of rain in a short period. Thus, this is an example of a location in Garland at risk for flash flooding even when the area itself does not get rainfall. Flash floods are particularly dangerous in urban areas and cause the greatest damage. As more farmlands and wooded areas are converted to urban and suburban areas, the amount of surface area available for water infiltration into the soils decrease. Home sites, parking lots, buildings, and roadways all decrease the surface area of soil on the Earth's surface.

**Figure 5.11**



*Holford Road, Garland, TX – 2021*

## Location

Figure 5.12 shows the City of Garland in relation to the 100 and 500-year floodplains. FEMA has published Flood Insurance Rate Maps (FIRM's) showing approximately 2,400 acres of the 100-year floodplain primarily along Duck Creek, Rowlett Creek, Spring Creek, Mills Branch and their tributaries.

The City of Garland has experienced numerous floods during the last hundred years. Rowlett Creek and its tributaries drain the northeast part of the City. Duck Creek and its tributaries drain the southwest portion of the City. Duck Creek has a watershed of approximately 45 square miles. The most intense and damaging flood events occur along Duck Creek.

Most of the development in Garland lies in the central portion of the City. Residential development has occurred in the upper and lower Duck Creek watershed and in the Spring Creek watershed. Commercial and industrial developments are established in west-central Garland.

### *Duck Creek*

The principal flood problem in the City of Garland is the low-lying area adjacent to Duck Creek. Damaging flood events occurred on Duck Creek in 1949, 1957, 1962, 1966, 1969, 1971, 1977, 1981, 1989, 1990, and 1991. These floods caused considerable damage and loss of lives. The flood occurring April of 1990 was the greatest event since the flood of 1949. Damages from the flood in April of 1990 totaled approximately \$7.6 million. More than 300 homes, duplexes, multi-family units and businesses were damaged. The flood in April of 1990 is the greatest flood event in Garland since homes and businesses have been constructed along Duck Creek. The April 1990 flood was estimated at about a 40-year frequency event. In April 1991, flooding damages totaled \$3.5 million. More than 100 homes, duplexes, multi-family units and businesses were damaged in this flood.

The Duck Creek watershed is approximately 96 percent developed with only a small portion of the watershed available for future development. The US Army Corps of Engineers (USACE) considers existing and future urbanization conditions to remain the same for the Duck Creek basin.

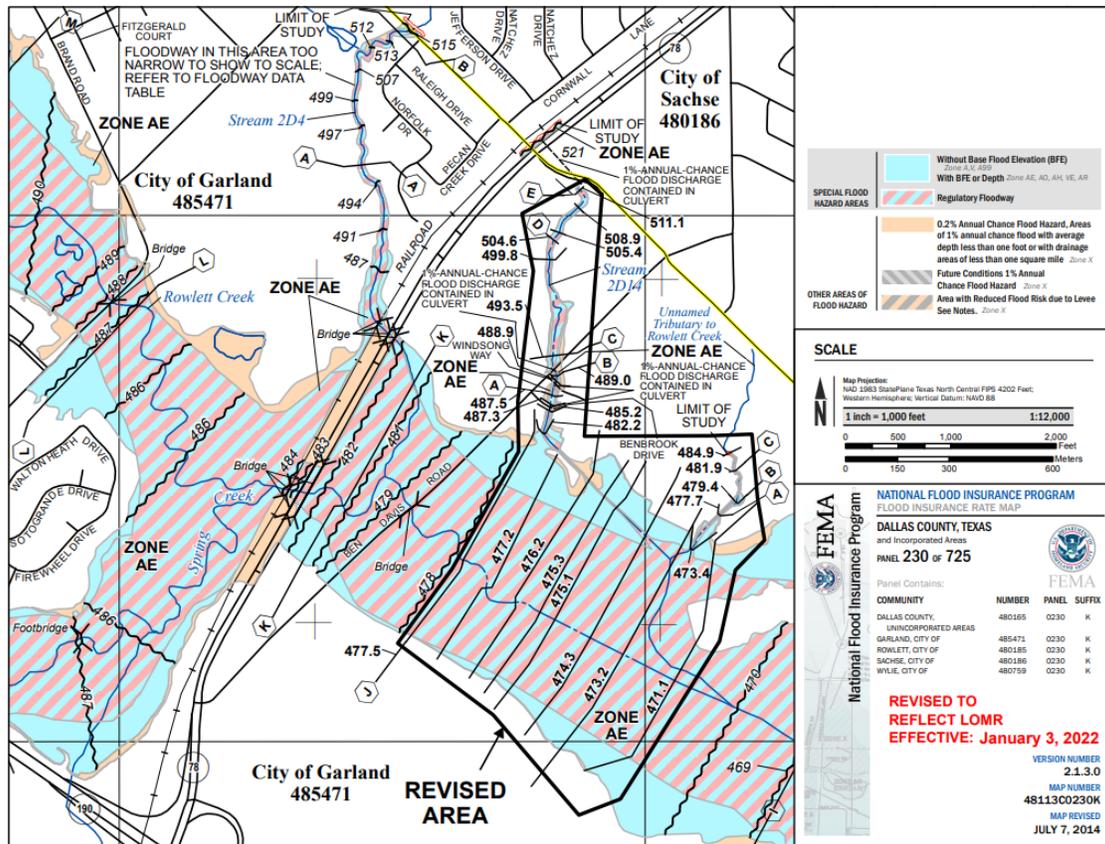
Following the flooding events of 1990 and 1991, the City of Garland collaborated with the USACE to complete a channel improvement project for Duck Creek. This project was substantially complete in 1998; as a result, the base flood elevation was lowered to a level where 514 structures have the lowest floor situated above the base flood elevation. The Letter of Map Revision (LOMR) indicating this change was finalized on February 5, 2003.

### *Rowlett and Spring Creek*

Large floods are known to have occurred on Rowlett and Spring Creeks. The largest flood occurred in 1942, with a recurrence interval of approximately once in one hundred years. Flood events also occurred in 1964, 1966, and 1967. The City of Garland has experienced few flood problems since that time in the Rowlett and Spring Creek watersheds. This is due in part to the strict land use controls in place for development within the area.

Development within the area of Rowlett and Spring Creek must adhere to the following criteria: Base flood elevations (BFE) for the one-hundred-year flood that reflect ultimate development land use throughout the watershed shall be used for design and planning of floodplain development. Development within the floodplain shall be permitted only if it can be demonstrated there will be no rise in the base flood elevation. Excavation volumes to preserve overall valley storage within the floodplain shall balance fill volumes. Areas excavated shall be landscaped to restore natural cover. The bed and banks of Rowlett Creek shall be left in a natural state to control erosive velocities, prevent excessive downstream discharges, and preserve the natural effect of the stream. Exceptions are permitted for major bridge crossings, public welfare, and safety. Increases to existing average velocities shall be allowed to a maximum average velocity for no greater than six (6) feet per second. Significant stands of trees and other environmental features within the floodplain shall be preserved.

Figure 5.12



Source: FEMA Flood Map Service Center

### Severity

Flood severities are determined by Federal Emergency Management Agency (FEMA) flood zone designations. Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk. These zones are depicted on a community's Flood Insurance Rate Map (FIRM) or Flood Hazard City of Garland | Hazard Mitigation Action Plan | Page 44

Boundary Map. Each zone reflects the severity of impact or type of flooding in the area. Only a few small areas within the City of Garland are in Zone A. Historically, the worst flood Garland has seen was in 1990 and 1991 when water levels rose to 3 feet. The City is subject to riverine flooding from Duck Creek, Rowlett Creek, Spring Creek, Mills Branch, and numerous other streams. The area is subject to intense local thunderstorms of short duration and general storms extending over periods of several days. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely a flood event will occur in Garland within the next three years.

**Table 5.13 - FEMA Flood Zones**

**Moderate to Low Risk**

<b>Zone</b>	<b>Description</b>
B and X	Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than a foot or drainage areas less than one square mile.
C and X	Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that do not warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.

**High Risk Areas**

<b>Zone</b>	<b>Description</b>
A	Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas. No depths or base flood elevations are shown within these zones.
AE	The base floodplain where base flood elevations are provided. AE Zones are now used on new format FIRMs instead of A1-A30 Zones.
A1-30	These are known as numbered A Zones (e.g., A7 or A14). This is the base floodplain where the FIRM shows a BFE (old format).
AH	Areas with a 1% annual chance of shallow flooding, usually in the form of a pond, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

AO	River or stream flood hazard areas and areas with a 1% or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from 1 to 3 feet. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Average flood depths are shown within these zones.
AR	Areas with a temporarily increased flood risk due to the building or restoration of a flood control system (such as a levee or a dam). Mandatory flood insurance purchase requirements will apply, but rates will not exceed the rates for unnumbered A zones if the structure is built or restored in compliance with Zone AR floodplain management regulations.
A99	Areas with a 1% annual chance of flooding that will be protected by a Federal flood control system where construction has reached specified legal requirements. No depths or base flood elevations are shown within these zones.

**High Risk – Coastal Areas**

Zone	Description
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. No base flood elevations are shown within these zones.
VE, V1-30	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 26% chance of flooding over the life of a 30-year mortgage. Base flood elevations derived from detailed analyses are shown at selected intervals within these zones.

**Undetermined Risk Areas**

Zone	Description
D	Areas with possible but undetermined flood hazards. A flood hazard analysis has not been conducted. Insurance rates are commensurate with the uncertainty of the risk.

Source: FEMA

### Previous Occurrences

Since 2017, the City of Garland’s Street Department has responded to 97 calls for service regarding flooding. Damaging flood events occurred on Duck Creek in 1949, 1957, 1962, 1966, 1969, 1971, 1977, 1981, 1989, 1990, 1991, 2015 and 2021. These floods caused considerable damage. Following the flooding events of 1990 and 1991, the City of Garland collaborated with the United States Army Corps of Engineers to complete a channel improvement project for Duck Creek. This project was complete in 1998. As a result, the base flood elevation was lowered to a level where 514 structures now have the ground floor situated above the base flood elevation. The Letter of Map Revision (LOMR) indicates this change and was finalized on February 5, 2003. Since this improvement to Duck Creek, flood events have lowered dramatically, until 2015 when two flood incidents took the life of one person attempting to cross a flooded road. This was a result of an estimated 100-year flood. However, damage would have been much greater had the Army Corps of Engineers channel improvement project not been completed. Since the 2015 incidents, locking floodgates have been installed across frequently flooded roadways to minimize future loss of life to residents and increase safety.

### Probability of Future Events

The City of Garland is subject to flooding from Duck Creek, Rowlett Creek, Spring Creek, Mills Branch, and their tributaries. The planning area is subject to intense local thunderstorms of short duration and general storms extending over periods of several days. Flooding results primarily from stream overflow caused by rainfall runoff, ponding, and sheet flow. Most of the flooding events occur in the spring and summer months. However, severe flooding can be produced by rainfall at any time. Previous historical data in Table 5.14 shows 16 flood events have occurred within Garland since 1998. Calculations from this data suggests that a flood event will impact Garland 0.67 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking it is highly likely for a flood event to occur within the next year.

### Impact on Community

A flood of the same magnitude as that of the 1991 Duck Creek flooding event would cause significantly less damage than it did before the channel-widening project. Table 5.14 shows previous flood occurrence data from the NCDC. Sixteen flood events have been reported in Garland between 1/1/1998 and 12/31/2021. Those floods caused three deaths. The May 2015 flood caused an estimated \$8 million dollars in property damage impacting over 100 homes and caused \$884,506.19 of damage to City facilities and infrastructure. Regionally, riverine flooding has accounted for \$68.4 million in losses since 1996.

**Table 5.14 - Flood Historical Data**

County	City	Date	Event Type	Deaths	Property Damage	Crop Damage
Dallas	Garland	9/16/1998	Flash Flood	0	0	0
Dallas	Garland	12/4/1998	Flash Flood	1	0	0
Dallas	Garland	12/4/1998	Flash Flood	0	0	0

Dallas	Garland	6/11/2000	Flash Flood	0	0	0
Dallas	Garland	4/7/2002	Flash Flood	0	0	0
Dallas	Garland	10/18/2002	Flash Flood	0	0	0
Dallas	Garland	1/3/2005	Flash Flood	0	0	0
Dallas	Garland	6/26/2007	Flash Flood	1	0	0
Dallas	Garland	6/27/2007	Flash Flood	0	0	0
Dallas	Garland	9/9/2007	Flash Flood	0	25,000	0
Dallas	Garland	3/18/2008	Flash Flood	0	15,000	0
Dallas	Garland	5/29/2015	Flash Flood	0	0	0
DALLAS	Garland	5/29/2015	Flash Flood	0	8,884,506	0
DALLAS	Garland	5/30/2015	Flash Flood	0	0	0
DALLAS	Garland	6/6/2021	Flash Flood	1	0	0
DALLAS	Garland	6/7/2021	Flash Flood	0	0	0

**Summary of Vulnerability**

The principal flood problem in the City of Garland is the low-lying area adjacent to Duck Creek. The Duck Creek watershed is approximately 96% developed with only a small portion of the watershed available for future development. The United States Army Corps of Engineers (USACE) considers existing and future urbanization conditions to remain the same for the Duck Creek basin. The mitigation enhancements to the City include eight floodgates and an aggressive floodplain management program has lessened the impact of a flood event. The Hazard Mitigation Planning Team has determined that the City of Garland is at high risk of major impacts from floods due to the number of previous occurrences, combined with the impacts of those occurrences, severe thunderstorms the area sustains and heavy development surrounding Garland. There are 474 total flood loss claims (252 properties) in Garland valued at roughly \$10.1 million, which are the most vulnerable to flooding. In addition to these parcels, there is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from flooding.

## National Flood Insurance Program Overview

### Summary

Nearly 20,000 communities across the United States and its territories participate in the NFIP by adopting and enforcing floodplain management ordinances. In exchange, the NFIP makes federally backed flood insurance available to homeowners, renters, and business owners in these communities. Participation in the NFIP is voluntary.

Flood insurance is designed to provide an alternative to disaster assistance and reduce the costs of repairing damage to buildings and their contents caused by floods. Flood damage is reduced by nearly \$1 billion a year through communities implementing sound floodplain management requirements and property owners purchasing flood insurance. Additionally, buildings constructed in compliance with NFIP building standards suffer approximately 80 percent less damage annually than those not built in compliance.

### Local Participation in the NFIP

Based on TCEQ records, the City of Garland enrolled in the NFIP Emergency Program on August 8, 1970 and the Regular Program on April 16, 1971. As of March 2021, the City of Garland had 544 active flood insurance policies within the community. Between January 1, 1978 and March 1, 2021 the City of Garland had 474 total flood losses, damage valued roughly at \$10.1 million dollars. Table 5.16 shows all flood losses for the City of Garland. Through the Building Inspections and Engineering Department, Garland will continue to comply with NFIP. Garland will meet FEMA ordinances regarding new developments and will enforce ordinances and regulations in regards to existing developments.

Table 5.15

Federal Emergency Management Agency Loss Statistics from 1/1/1978 through 3/2/2022					
Community	Total	Closed	Open Losses	CWOP	Total
Garland	496	474	0	22	\$10,101,863

### Repetitive Loss Properties

- Two or more claims of more than \$1,000 paid by the NFIP within any 10-year period since 1978.

To focus resources on those properties that represent the best opportunities for mitigation, Congress defined a subset called “Severe Repetitive Loss Properties” defined below. Garland has 56 repetitive loss properties, three of which are commercial properties.

### Severe Repetitive Loss Properties

- Four or more claims of more the \$5,000; or
- Two to three claims that cumulatively exceed the building’s value

### Assessing Vulnerability: Addressing Repetitive Loss

The Federal Emergency Management Agency (FEMA) produces statistics on community flood losses. Losses are determined by claims made to the National Flood Insurance Program (NFIP). The following section is an assessment of claims to the NFIP, and properties within the City of Garland, which are designated as repetitive loss structures.

Table 5.16 provides a summary of residential repetitive flood insurance claims for individual streets in Garland that include repetitive loss properties. Address data about individual sites has been omitted for confidentiality. The loss history includes all flood claims paid on an insured property, regardless of any change of ownership. The data begins at the building's construction or back to 1978 if the building was constructed prior to 1978. The history includes the number of repetitive loss properties on each street, average total amount paid to each structure, date of the last loss, and the average estimated structure value.

**Table 5.16 - City of Garland Repetitive Loss Properties**

Street Name	Number of Properties with Losses	Total Number of Losses	Date of Last Loss	Average Amount Paid Per Structure	Average Structure Value
Ridgedale Dr.	13	37	04/16/1990	\$29,004.62	\$205,084
Forest Lane	3	9	05/28/2015	\$29,592.44	\$118,278
Rock Creek	3	6	04/12/1991	\$17,588.75	\$385,918
Pleasant Valley Rd.	1	21	09/22/2018	\$28,001.28	\$300,702
University Dr.	2	5	04/12/1991	\$4,032.67	\$101,250
Frances Dr.	1	3	05/29/2015	\$27,455.59	\$204,669
St. George	1	2	04/15/1990	\$2,860.99	\$73,600
W. Centerville Rd.	1	4	06/11/2000	\$7,690.44	\$46,170
Iroquois	1	2	05/05/1995	\$3,611.98	\$121,000
Rollingridge Ln.	1	2	05/29/2015	\$33,590.57	\$149,310
Fieldside Dr.	1	2	05/29/2015	\$58,612.13	\$186,206
Carroll Dr.	1	5	06/21/2000	\$10,354.15	\$4,216,875
Newcastle Dr.	1	2	04/12/1991	\$10,083.27	\$54,000
Brookview Dr.	1	3	04/11/1991	\$8,589.00	\$83,200
Rainier Circle	3	6	04/11/1991	\$17,023.88	\$277,900
Glenbrook Dr.	25	99	06/13/2015	\$43,972.61	\$231,831

FEMA – Garland Repetitive Loss Properties 08-24-2021

# Earthquake

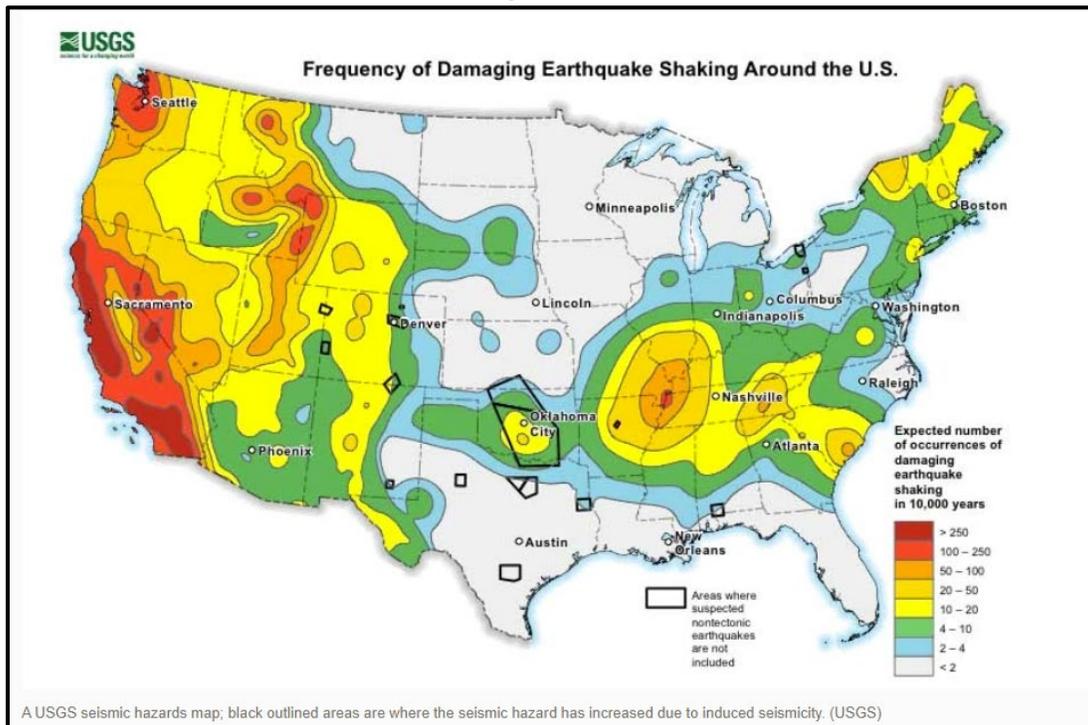
## Hazard Description

Earthquakes are sudden rolling or shaking events caused by movement under the earth’s surface. Earthquakes happen along cracks in the earth's surface, called fault lines, and can be felt over large areas. They usually last less than one minute but can cause substantial damage to infrastructure in a short amount of time.

## Location

All 50 states and five U.S. territories are at some risk for earthquakes and they can happen at any time of the year. The most significant hazards from induced seismicity are in six states, listed in order from highest to lowest potential hazard: Oklahoma, Kansas, Texas, Colorado, New Mexico and Arkansas. Oklahoma and Texas have the largest populations exposed to induced earthquakes. The City of Garland is equally subject to earthquakes.

Figure 5.17



## Severity

Texas earthquakes have not exceeded a magnitude of 6.0, and most have been fairly small and caused little to no damage. The largest one in Dallas County was a 3.6 on the Richter scale. Similar sized earthquakes are expected in the future. Table 5.18 combines the Mercalli and Richter scale, which allows planners to assess the impact earthquakes have.

**Table 5.18 - Mercalli and Richter scale**

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very strong	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.
VIII	Severe	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.
IX	Violent	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.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

**Previous Occurrences**

Earthquakes have only recently been recorded in the region. The strongest quake to rattle Dallas County occurred on January 6, 2015, and registered a magnitude of 3.6. To date, there have been no injuries, fatalities or major damage recorded. The magnitudes experienced in Dallas County are considered minor and only felt by humans but have not caused damage. Currently, there is not a significant amount of data for earthquakes in Dallas County.

**Probability of Future Events**

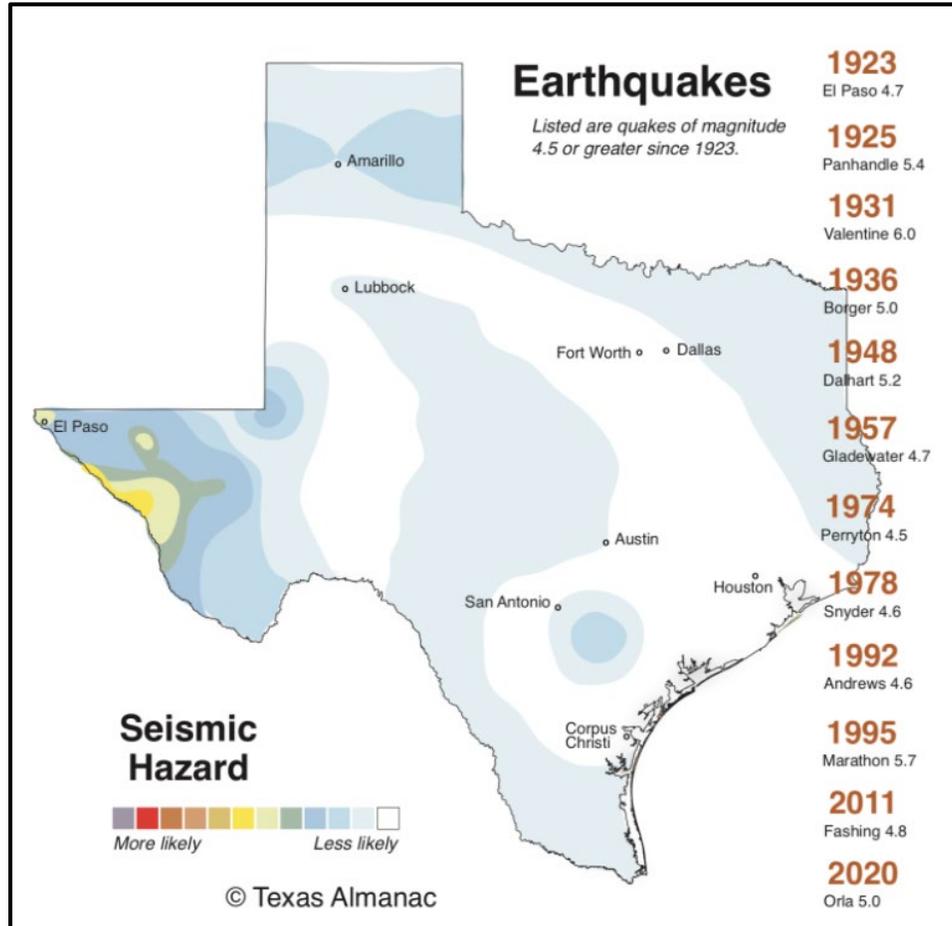
In 2015, there were 11 earthquakes in Dallas County. The strongest was measured at 3.6 magnitude. In 2017, two earthquakes occurred within weeks; a 3.1 magnitude quake on August 27 and a 2.7 quake on Sept. 1, 2017. Data is not currently available specifically for the City of Garland. Calculations from this data suggests that a similar sized earthquake will occur 0.4 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is not likely, or occasional, that an earthquake occurs within the next three years.

**Impact on Community**

A 6.0 earthquake, the largest recorded in Texas, if in the City of Garland would have limited impacts. Damage has occurred in at least twenty-five of the recorded earthquakes in Texas and one death has been attributed to a Texas quake. Because this hazard is new to the region, residents, businesses, built

infrastructure and first responders have not been educated nor are they prepared for this type of event. The tremors could cause hairline cracks in underground pipes, gas lines and in walls of buildings. The majority of the damages to the community would be the result of property and infrastructure damages. Major damage could potentially be caused to large overpasses at I-30 and the George Bush Turnpike.

Figure 5.19



**Vulnerability**

The entire planning area is equally vulnerable to earthquakes. The probability of a small earthquake occurring in Garland within the next three years is not likely, or occasional. Large-scale earthquakes are considered an isolated event, however would cause major damage due to a low risk of high magnitude earthquakes in this area. The unpredictability and unschooled population regarding earthquakes is a concern. Because the region as a whole has not faced infrastructure complications regarding earthquakes the impacts of a large earthquake would be major. Therefore, the risk of earthquakes to the City of Garland is low. Built environment including structures and overpasses would be the most vulnerable to an earthquake event. There is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from an earthquake.

## **Severe Thunderstorms/Damaging Winds**

### **Hazard Description**

The National Weather Service defines a severe thunderstorm as a storm that has winds of at least 58 mph (50 knots), and/or hail at least 1" in diameter. Severe thunderstorms also can be capable of producing a tornado. Structural wind damage may imply the occurrence of a severe thunderstorm. Straight-line winds are often responsible for wind damage associated with a severe thunderstorm. These winds are often confused with tornadoes because of similar damage and wind speeds. Downbursts or microbursts are examples of damaging straight-line winds. Wind speeds in some of the stronger downbursts can reach 100 to 150 miles per hour. Lightning is a characteristic of thunderstorms. Lightning is a giant spark of electricity in the atmosphere between clouds, the air, or the ground. Air acts as an insulator between the positive and negative charges in the cloud and between the cloud and the ground. When the opposite charges build up, the insulating capacity of the air breaks down and there is a rapid discharge of electricity that we know as lightning.

### **Location**

The greatest severe thunderstorm threat in the United States extends from Texas to southern Minnesota. No place in the United States is completely safe from the threat of severe thunderstorms. Due to the unpredictable nature of severe thunderstorms, it is impossible to determine the exact area of their future occurrences. The entire planning area, the City of Garland, is equally subject to severe thunderstorms.

### **Severity**

Table 5.20 shows the level of categorical risk of thunderstorms in Day 1-3 Convective Outlooks derived from probability forecasts of tornadoes, damaging winds and large hail. Table 5.21 shows The Beaufort Wind Scale. The Beaufort Wind Scale is representative of the damage from high winds this community may sustain. The Beaufort Wind Scale allows planners in the community to assess historical data and mitigate for future events. The highest winds to impact Garland in the past 20 years occurred in 2009 and 2011 when winds recorded exceeded 80 mph. This is not a rare occurrence in North Texas and it is expected that 80 mph winds or higher be expected in the future.

Table 5.20.

<h2 style="text-align: center;">Understanding Severe Thunderstorm Risk Categories</h2>					
<b>THUNDERSTORMS</b> (no label)	<b>1 - MARGINAL</b> (MRGL)	<b>2 - SLIGHT</b> (SLGT)	<b>3 - ENHANCED</b> (ENH)	<b>4 - MODERATE</b> (MDT)	<b>5 - HIGH</b> (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
					
<small>* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.</small>					
		<h3>National Weather Service</h3> <p><a href="http://www.spc.noaa.gov">www.spc.noaa.gov</a></p>			

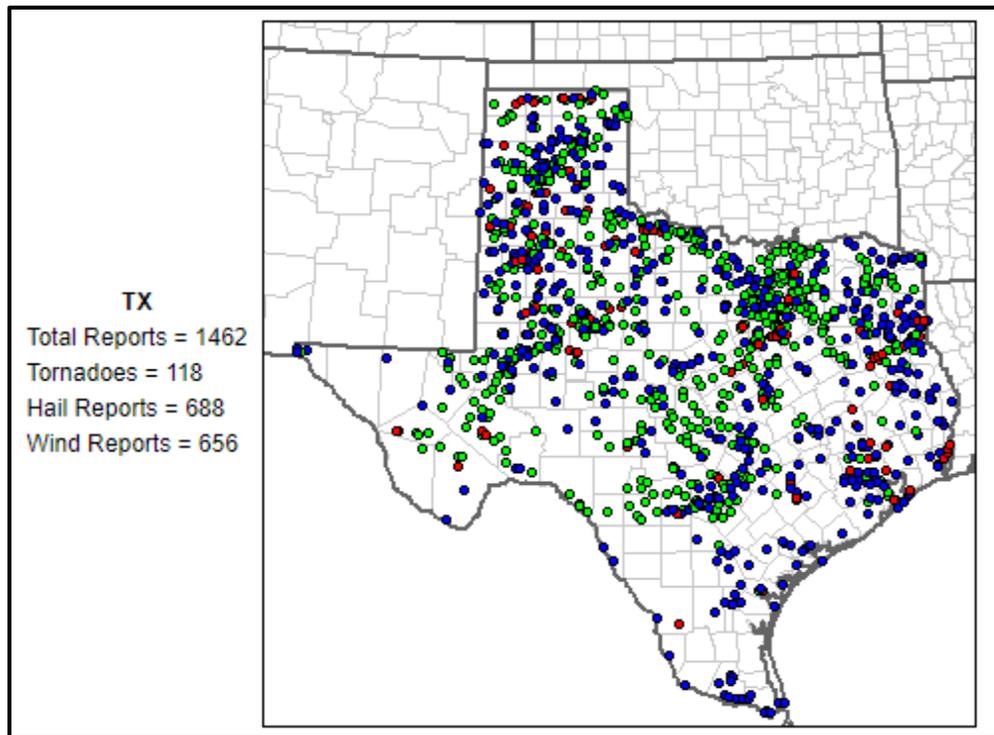
**Table 5.21 - Beaufort Wind Scale**

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.

**Previous Occurrences**

The National Weather Service’s Storm Prediction Center reported 1,344 severe thunderstorm events in Texas during 2021. This excludes tornadoes, as Garland’s HazMAP classifies tornadoes as a separate hazard. Narrowing occurrences to the defined planning area of Garland, the National Climatic Data Center reported 36 thunderstorms with high winds have been reported between 2/29/1994 and 12/31/2021.

**Figure 5.22 - Annual Severe Thunderstorm Report Summary - 2021**



### **Probability of Future Events**

Calculations from historical data suggests that a severe thunderstorm will impact Garland at least one time a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely that severe thunderstorms occur in the next year.

### **Impact on Community**

According to the National Climatic Data Center, 22 severe thunderstorms/thunderstorms with significant wind have caused an estimated \$200,000 in property damage. The most common impacts of severe thunderstorms are power outages and private property damage consisting of roof and vehicle damage from wind and hail. Because severe thunderstorms are such a common occurrence, residents are prepared and practiced in mitigating damage. Public education is also a focus through many different channels: The National Weather Service, media outlets and several City departments push severe thunderstorm messaging year round. The City of Garland and Garland Power & Light both have tree-trimming programs to help mitigate effects of severe thunderstorms. GP&L trims trees and other vegetation away from power lines to provide safe and reliable electric service. Because of this proactive vegetation management program, GP&L customers experience fewer outages than average as reported by the American Public Power Association (APPA). For these reasons, it has been determined that severe thunderstorm impacts that do occur are minor.

**Table 5.23 - Severe Thunderstorm Historical Data**

<b>City</b>	<b>Date</b>	<b>Event Type</b>	<b>Wind Speeds</b>	<b>Property Damage</b>
Garland	5/29/1994	Thunderstorm Wind	52	0
Garland	11/3/1994	Thunderstorm Wind	56	0
Garland	11/4/1994	Thunderstorm Wind	0	5000
Garland	4/19/1995	Thunderstorm Wind	0	2000
Garland	4/19/1996	Thunderstorm Wind		2000
Garland	6/15/1996	Thunderstorm Wind		0
Garland	6/15/1996	Thunderstorm Wind	61	2000
Garland	6/15/1996	Thunderstorm Wind		0
Garland	6/17/1996	Thunderstorm Wind		0
Garland	6/16/1997	Thunderstorm Wind	52	0
Garland	5/8/1998	Thunderstorm Wind		0
Garland	5/8/1998	Thunderstorm Wind		0
Garland	5/27/1998	Thunderstorm Wind		0
Garland	10/2/1998	Thunderstorm Wind	55	0
Garland	11/9/1998	Thunderstorm Wind	52	0
Garland	4/26/1999	Thunderstorm Wind		5000
Garland	2/9/2001	Thunderstorm Wind	52	0
Garland	6/14/2001	Thunderstorm Wind	52	0
Garland	6/14/2001	Thunderstorm Wind	52	0
Garland	4/7/2002	Thunderstorm Wind	52	0
Garland	8/8/2005	Thunderstorm Wind	50	20000
Garland	5/2/2007	Thunderstorm Wind	50	0
Garland	2/10/2009	Thunderstorm Wind	70	0
Garland	4/14/2011	Thunderstorm Wind	70	50000
Garland	4/14/2011	Thunderstorm Wind	56	50000
Garland	4/14/2011	Thunderstorm Wind	64	50000
Garland	10/23/2011	Thunderstorm Wind	61	10000
Garland	10/23/2011	Thunderstorm Wind	61	10000
Garland	5/21/2013	Thunderstorm Wind	50	10000
Garland	5/21/2013	Thunderstorm Wind	60	30000
Garland	8/13/2013	Thunderstorm Wind	43	3000
Garland	10/2/2014	Thunderstorm Wind	50	5000
Garland	3/8/2016	Thunderstorm Wind	60	10000
Garland	3/29/2017	Thunderstorm Wind	55	5000
Garland	3/29/2017	Thunderstorm Wind	55	1000
Garland	10/7/2018	Thunderstorm Wind	43	5000

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to severe thunderstorms. All structures and populations within the City are equally vulnerable to the effects of severe thunderstorms. In addition to these parcels, there is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from severe thunderstorms. The highly likelihood of severe thunderstorm is a concern but because the City of Garland is so accustomed to severe thunderstorms and have current mitigation programs the impacts are minor. Therefore, the risk of severe thunderstorms is minor.

## **Infrastructure and Communications Failure**

### **Hazard Description**

Infrastructure is the basic facilities and services needed for a community. The City of Garland infrastructure includes roads, wastewater treatment plants, water and wastewater pipes, power plants, electrical lines, bridges, an airport, railroads, and schools. Infrastructure also includes telecommunications equipment, which if impacted may cause a communications failure. A communications failure is the interruption or loss of communications systems including transmission lines, communications satellites, and associated hardware and software necessary for the communications system to function. It can include telecommunications, radio and information technology failures. A communications failure may be the result of an equipment failure, human act (deliberate or accidental) or the result of another hazard event.

### **Location**

Because of the large array of possible infrastructure and communications failures, it is impossible to map the location they would occur. The entire planning area, the City of Garland, is equally subject to infrastructure and communications failures.

### **Severity**

When an infrastructure/communications failure occurs, it can have a wide range of effects on a community. Deteriorating infrastructure is a problem all of America is facing. Every four years, the American Society of Civil Engineers Committee on America's Infrastructure provides a comprehensive assessment of the nation's 16 major infrastructure categories grading A to F. The components that are considered when grading include: capacity, condition, funding, future need, operation and maintenance, public safety and resilience.

### **Previous Occurrences**

Most past occurrences have been small incidents that were quickly addressed and to date there has not been a significant infrastructure failure within the City of Garland. There was however a communications failure. On March 8, 2017, there was a nationwide issue. AT&T cell phone were unable to call 911 for several hours.

### **Probability of Future Events**

The occurrence of an infrastructure/communications failure is largely impossible to predict. The likelihood of a large-scale extended communications failure is high. Additionally, small-scale failures with a short duration is not abnormal. Therefore, according to Table 4.3 Hazard Frequency Ranking the Planning Team has concluded that an infrastructure/communications failure is highly likely to occur in the City of Garland in the next six years.

### **Impact on Community**

Nearly every aspect of modern life is dependent on digital infrastructure. Critical infrastructure services, such as emergency services, utility services, water services and telecommunications can be impacted by a communications or infrastructure failure. Failures can result in a 911 or emergency warning system failure, a delay of response times by emergency service providers, and has the potential to impact the entire community.

Flooding typically damages the infrastructure of a community, including roads, bridges, power lines and plants. It can take a significant amount of time repair these facilities and infrastructure, depending on the nature of the damage and the resources available that can be dedicated.

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to infrastructure and communications failures. This type of failure will occasionally occur to some extent within the next six years. This type of hazard has historically caused substantial impacts to the City of Garland. These factors make infrastructure/communications failure a high risk for the City of Garland.

# Drought

## Hazard Description

Drought is a period without substantial rainfall that persists from one year to the next. Drought is a normal part of virtually all climatic regions, including areas with high and low average rainfall. Drought is the consequence of anticipated natural precipitation reduction over an extended period, usually a season or more in length. Droughts can be classified as meteorological, hydrologic, agricultural and socioeconomic.

- Meteorological drought is an interval of time, generally about months or years, during which the actual moisture supply at a given place consistently falls below the climatically appropriate moisture supply.
- Agricultural drought occurs when there is inadequate soil moisture to meet the needs of a particular crop at a particular time. Agricultural drought usually occurs after or during meteorological drought, but before hydrological drought and can affect livestock and other dry land agricultural operations.
- Hydrological drought refers to the deficiencies in surface and subsurface water supplies. It is measured as stream flow, snow pack, and as lake, reservoir and groundwater levels. There is usually a delay between lack of rain or snow and less measurable water in streams, lakes, and reservoirs. Therefore, hydrological measurement tends to lag behind other drought indicators.
- Socio-economic drought occurs when physical water shortages start to affect the health, well-being and quality of life of people, or when the drought starts to affect the supply and demand of an economic product.

Droughts are one of the most complex natural hazards, as it is difficult to determine their precise beginning or end. In addition, droughts can lead to other hazards such as extreme heat and wildfires. Their impact on wildlife and environment is enormous, often killing crops, grazing land, edible plants and trees.

## Location

Due to the unpredictable nature of a drought, it is impossible to determine the exact area of their future occurrences. The entire planning area, the City of Garland, is equally subject to drought.

## Severity

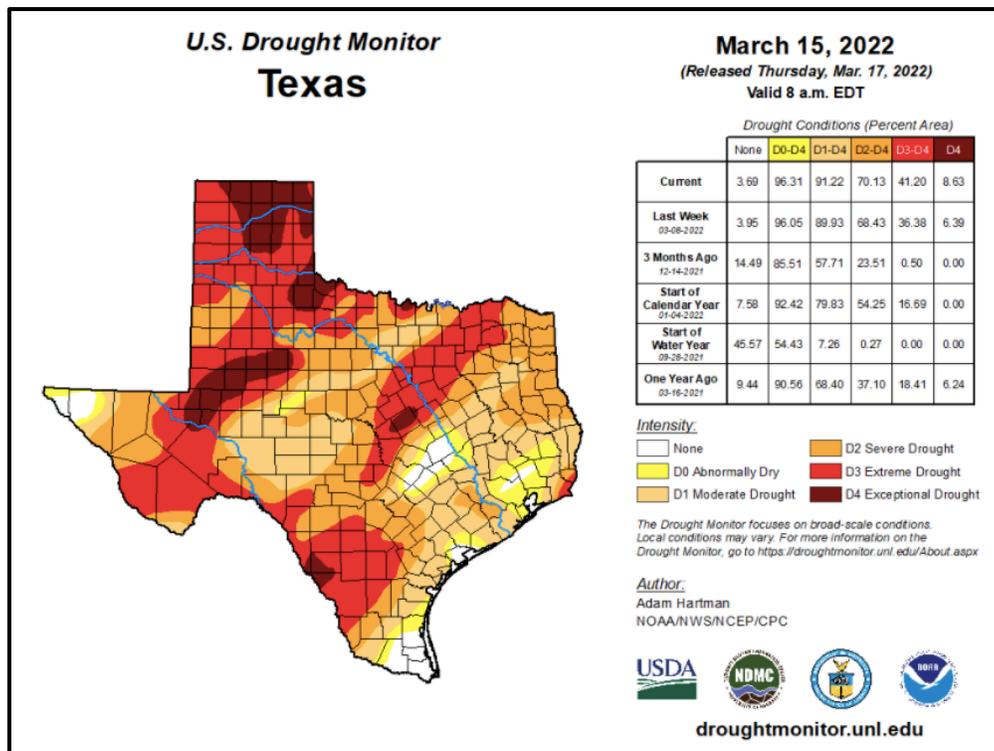
The Severity of drought periods is measured using the U.S. Drought Monitor (USDM) (Table 5.24). The USDM was developed by Mark Svoboda in 1999 and is produced through a partnership between the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. The USDM uses a process that synthesizes multiple indices, outlooks and local impacts, into an assessment that best represents current drought conditions and reflects observed precipitation. The outcome of each Drought Monitor map is a consensus of federal, state and academic scientists. Historically, the City of Garland has already

experienced exceptional (D4) drought conditions. Due to increasing temperatures, Garland could fall into the D4 drought category for much longer periods.

**Table 5.24 - Drought Severity Classification and Map**

Drought Severity	Return Period (years)	Description of Possible Impacts	Drought Monitoring Indices		
			Standardized Precipitation Index (SPI)	NDMC* Drought Category	Palmer Drought Index
Minor Drought	3 to 4	Going into drought; short-term dryness slowing growth of crops or pastures; fire risk above average. Coming out of drought; some lingering water deficits; pastures or crops not fully recovered.	-0.5 to -0.7	D0	-1.0 to -1.9
Moderate Drought	5 to 9	Some damage to crops or pastures; fire risk high; streams, reservoirs, or wells low, some water shortages developing or imminent, voluntary water use restrictions requested.	-0.8 to -1.2	D1	-2.0 to -2.9
Severe Drought	10 to 17	Crop or pasture losses likely; fire risk very high; water shortages common; water restrictions imposed.	-1.3 to -1.5	D2	-3.0 to -3.9
Extreme Drought	18 to 43	Major crop and pasture losses; extreme fire danger; widespread water shortages or restrictions.	-1.6 to -1.9	D3	-4.0 to -4.9
Exceptional Drought	44+	Exceptional and widespread crop and pasture losses; exceptional fire risk; shortages of water in reservoirs, streams, and wells creating water emergencies.	less than -2	D4	-5.0 or less

\*NDMC - National Drought Mitigation Center



## **Previous Occurrences**

According to the National Climatic Data Center, Dallas County, Texas was in a drought for 28 months during the last 20 years. This consisted of seven separate droughts that continued for multiple months. The longest of which was almost a full year and began in January 2006 through November 2006. Data is not currently available specifically for the City of Garland.

## **Probability of Future Events**

Drought events are not expected to occur every year, but are prevalent enough to be a concern. Previous historical data in Table 5.25 shows the drought events that have occurred within Garland since 1996. Calculations from this data suggests that a drought event will impact Garland 0.4 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely a drought will occur in the next three years.

## **Impact on Community**

The impact of a drought within the City of Garland is expected to be minor. This considers the large water supply available to the community. The major damages associated with droughts are typically on crops and livestock. However, Garland is a more urbanized area and contains very little agricultural land or livestock to cause major financial disruptions. For Garland, the financial burden of droughts is on structures. The primary causes of structural damage associated with drought are foundation issues. This is caused by expansive soil, resulting in structural repairs. Since 1996, droughts have caused \$512,000 dollars in structural damage and \$1,405,000 in crop damage within Dallas County. Regionally, droughts have accounted for \$39.8. million in losses since 1996.

The Water Conservation Plan and Drought Contingency Response Plan have been put into place in the City of Garland to negate the effects of drought. These consist of a strict seasonal water use schedule that goes into effect within the City between April and October. Details of this plan include: customers may water twice-per-week using an in-ground sprinkler system. November through March watering with sprinkler systems are limited to one day a week. Sprinkler system use is not allowed between 10 a.m. and 6 p.m. to prevent excessive evaporation. Newly planted landscape and/or sod requiring water more than one time a week, must request a variance. In stage 3 of a drought, no lawn watering at any time is allowed within the City. These actions make the community more resilient during drought events.

**Table 5.25 - Drought Historical Data**

<b>County</b>	<b>Date</b>	<b>Event Type</b>	<b>Property Damage</b>	<b>Crop Damage</b>
Dallas	5/1/1996	Drought	0	0
Dallas	8/1/1996	Drought	0	0
Dallas	7/1/1998	Drought	0	0
Dallas	8/1/2000	Drought	0	0
Dallas	9/1/2000	Drought	0	0
Dallas	6/1/2005	Drought	0	0
Dallas	7/1/2005	Drought	0	0
Dallas	8/1/2005	Drought	0	0
Dallas	9/1/2005	Drought	0	0
Dallas	10/1/2005	Drought	0	0
Dallas	11/1/2005	Drought	0	0
Dallas	12/1/2005	Drought	0	0
Dallas	1/1/2006	Drought	0	0
Dallas	2/1/2006	Drought	0	0
Dallas	3/1/2006	Drought	0	0
Dallas	4/1/2006	Drought	0	0
Dallas	5/1/2006	Drought	0	0
Dallas	6/6/2006	Drought	0	0
Dallas	7/1/2006	Drought	0	0
Dallas	8/1/2006	Drought	0	0
Dallas	9/1/2006	Drought	0	0
Dallas	10/1/2006	Drought	500,000	500,000
Dallas	11/1/2006	Drought	0	800,000
Dallas	4/1/2011	Drought	0	5,000
Dallas	8/1/2011	Drought	0	10,000
Dallas	9/1/2011	Drought	0	25,000
Dallas	10/1/2011	Drought	0	5,000
Dallas	8/7/2012	Drought	0	0
Dallas	12/1/2012	Drought	0	2,000
Dallas	1/1/2013	Drought	0	1,000
Dallas	4/1/2013	Drought	0	2,000
Dallas	6/25/2013	Drought	0	2,000
Dallas	7/1/2013	Drought	0	2,000
Dallas	8/1/2013	Drought	5,000	5,000
Dallas	9/1/2013	Drought	0	4,000
Dallas	2/25/2014	Drought	0	1,000

Dallas	3/1/2014	Drought	0	4,000
Dallas	4/1/2014	Drought	0	3,000
Dallas	5/1/2014	Drought	0	3,000
Dallas	6/1/2014	Drought	0	2,000
Dallas	7/1/2014	Drought	0	3,000
Dallas	8/1/2014	Drought	0	1,000
Dallas	9/1/2014	Drought	5,000	0
Dallas	10/1/2014	Drought	0	5,000
Dallas	11/1/2014	Drought	0	2,000
Dallas	12/1/2014	Drought	0	6,000
Dallas	1/1/2015	Drought	0	2,000
Dallas	2/1/2015	Drought	0	2,000
Dallas	3/1/2015	Drought	0	3,000
Dallas	4/1/2015	Drought	0	1,000
Dallas	8/25/2015	Drought	0	0
Dallas	9/1/2015	Drought	0	1,000
Dallas	10/1/2015	Drought	2,000	0
Dallas	12/1/2017	Drought	0	1,000
Dallas	7/1/2018	Drought	0	0
Dallas	8/1/2018	Drought	0	1,000
Dallas	9/24/2019	Drought	0	1,000
Dallas	10/1/2019	Drought	0	0
Dallas	11/24/2020	Drought	0	0
Dallas	12/1/2020	Drought	0	0

**Summary of Vulnerability**

The entire planning area is equally vulnerable to drought. Drought is of substantial risk to the community. Although it is a highly likely event, it has substantial impact on the City due to the low agricultural industry and ongoing mitigation actions taken by the City and residents. While there is no data to currently suggest an effect on any population, drought often coincides with Extreme Heat events, which impact elderly, low-income, and transient populations.

## Extreme Heat

### Hazard Description

Extreme heat is characterized by a combination of exceptionally high temperatures and humidity. When these conditions persist over a period, it is called a heat wave. Although heat can damage buildings and facilities, it presents a more significant threat to the safety and welfare of residents.

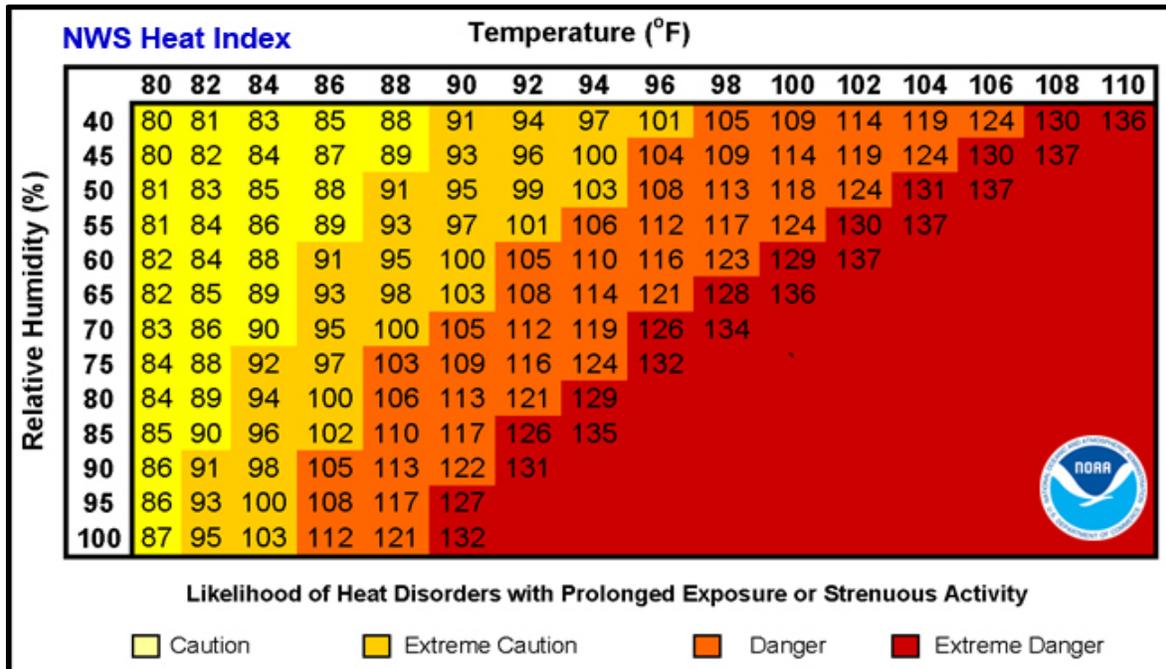
### Location

Due to the unpredictable nature of extreme heat, it is impossible to determine the exact area of their future occurrences. The entire planning area, the City of Garland, is equally subject to extreme heat.

### Severity

The danger of extreme heat is gauged by using the Extreme Heat Index (Figure 5.26). The Heat Index, as seen below, displays the relative danger in regards to Air Temperature and Relative Humidity. The record high temperature was recorded in Garland at 112 ° in 1980. With increasing temperatures, it is expected that by the end of this century, the average number of days where temperatures are above 95° will likely increase by as much as 14 times. This means that instead of having nine days per year of extreme heat at temperatures above 95, as we currently do, we can expect future number of days of extreme heat temperatures above 95 to rise as many as 123 days per year.

Figure 5.26 - Extreme Heat Index



Source: <https://www.weather.gov/ama/heatindex>

### Previous Occurrences

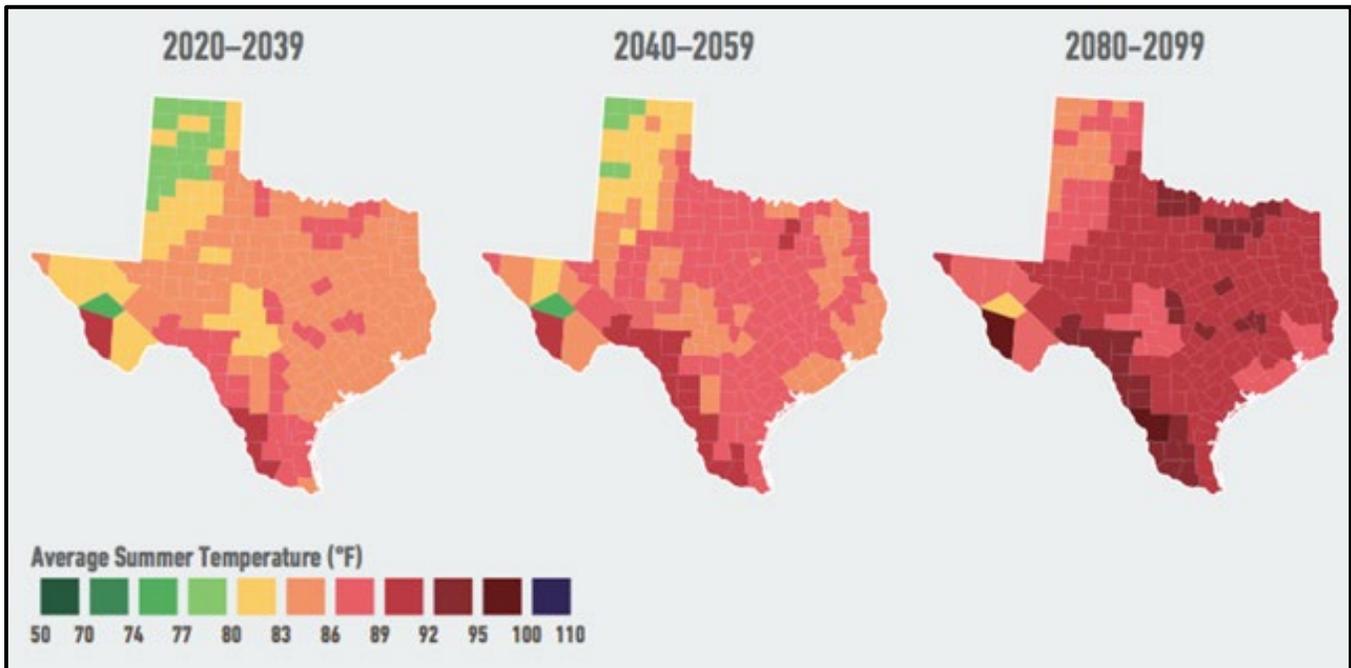
According to the National Climatic Data Center, 48 extreme heat events have been reported in Dallas County, Texas between 7/1/1996 and 12/31/2021.

### Probability of Future Events

Temperatures remain warm throughout the summer months and are relatively warmer throughout the year than other areas of the country. The occurrence of extreme heat events is likely within the area given the humidity levels and high summer temperatures. Previous historical data in Table 5.28 shows 48 extreme heat events have occurred in Dallas County since 1996. Data is not currently available specifically for the City of Garland. Calculations from this data suggest that an extreme heat event will impact Dallas County 1.85 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is likely for an extreme heat event to occur within the next year.

According to the Southeast Report released by the Risky Business Project, average temperatures are likely to increase across Texas due to climate change. The prospectus states dangerous levels of extreme heat are projected to threaten lives dramatically reduce labor productivity and increase energy demand and cost. The study predicts over the next 5 to 25 years, extreme heat will likely cause as many as 2,570 additional deaths per year.

**Figure 5.27 - Future Average Summer Temperatures in Texas**



## Impact on Community

The risks associated with extreme heat include: sunburn, dehydration, heatstroke, heat exhaustion, heat syncope, heat cramps and in severe cases death. The most at risk populations are outdoor laborers, the elderly, children, and the disabled who frequently live on low or fixed incomes and do not run air conditioning on a regular basis. These populations are sometimes isolated, with no immediate family or friends to look out for their well-being. The effects of extreme heat are always more pronounced in urbanized areas than in rural areas. According to the Journal of Applied Meteorology and Climatology, the problem is exacerbated in Garland by what is known as the heat island effect. The concrete and metal infrastructure absorbs radiant heat energy from the sun during the day and radiates that heat energy during the night. This cyclical process essentially “traps” the heat in the urbanized area and makes it as much as 5.4°C warmer. Since 1996 there have been 88 fatalities and 711 injuries caused by extreme heat in Dallas County. The Planning Team has determined that because of available cooling centers and programs in place to mitigate extreme heat the impacts of this hazard are limited.

**Table 5.28 - Extreme Heat Historical Data**

County	Date	Event Type	Deaths	Injuries
Dallas	7/1/1996	Heat	2	0
Dallas	7/19/1997	Heat	2	0
Dallas	6/1/1998	Heat	1	0
Dallas	7/1/1998	Heat	23	0
Dallas	8/3/1998	Heat	5	0
Dallas	8/1/1999	Heat	3	0
Dallas	7/1/2000	Heat	8	0
Dallas	8/1/2000	Heat	3	0
Dallas	9/1/2000	Heat	4	0
Dallas	7/14/2006	Heat	1	0
Dallas	7/27/2006	Heat	1	0
Dallas	8/10/2006	Heat	0	0
Dallas	6/23/2009	Heat	1	0
Dallas	4/29/2010	Heat	0	0
Dallas	6/20/2010	Heat	1	0
Dallas	6/13/2011	Heat	3	140

Dallas	7/1/2011	Heat	9	223
Dallas	8/6/2011	Heat	3	210
Dallas	6/15/2016	Heat	0	1
Dallas	6/16/2016	Heat	1	0
Dallas	6/16/2016	Heat	0	7
Dallas	7/18/2016	Heat	1	0
Dallas	7/24/2016	Heat	1	0
Dallas	7/8/2019	Heat	0	0
Dallas	7/16/2019	Heat	0	0
Dallas	8/7/2019	Heat	0	0
Dallas	8/17/2019	Heat	0	0
Dallas	8/26/2019	Heat	0	0
Dallas	7/9/2020	Heat	0	0
Dallas	8/12/2020	Heat	0	0
Dallas	8/30/2020	Heat	0	0
Dallas	9/1/2020	Heat	0	0
Dallas	7/25/2021	Heat	0	0
Dallas	7/29/2021	Heat	0	0
Dallas	8/1/2021	Heat	0	0
Dallas	8/9/2021	Heat	0	0
Dallas	9/1/2021	Heat	0	0
Dallas	8/13/2007	Excessive Heat	1	0
Dallas	7/23/2008	Excessive Heat	1	0
Dallas	7/28/2008	Excessive Heat	2	0
Dallas	8/1/2008	Excessive Heat	4	0
Dallas	8/1/2011	Excessive Heat	4	130
Dallas	7/20/2012	Excessive Heat	1	0
Dallas	5/17/2013	Excessive Heat	1	0
Dallas	7/18/2015	Excessive Heat	1	0
Dallas	6/20/2019	Excessive Heat	0	0
Dallas	8/13/2020	Excessive Heat	0	0
Dallas	8/28/2020	Excessive Heat	0	0

## **Summary of Vulnerability**

The entire planning area is equally vulnerable to extreme heat events. For now, extreme heat is considered a low risk to the City of Garland. Because extreme heat is a common occurrence, residents are prepared and practiced in mitigating damage. The City of Garland also has many faith-based communities that offer cooling centers during these times of extreme heat. Although heat events are very common to the area, they cause little damage to structures. The main concern with an extreme heat event is that it leads to other hazards, such as drought. The City of Garland is accustomed to long periods of hot weather as local summer temperatures often reach one hundred degrees Fahrenheit or more. Structure damage from extreme heat is likely. Garland has a hot and humid climate. Summers are hot, with temperatures approaching those of desert and semi-desert locations of similar latitude. The most vulnerable populations to extreme heat include the elderly, transients, and those in homes without adequate cooling capabilities.

# Power Outage

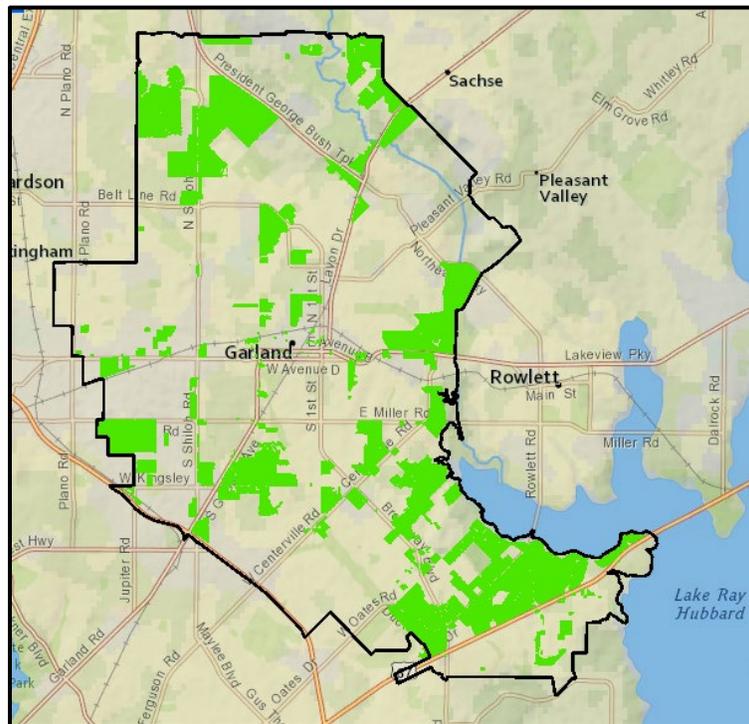
## Hazard Description

Power outage is defined as any interruption or loss of electrical service caused by disruption of power transmission, which may be the result of an accident, sabotage, natural hazards or equipment failure. A significant power failure is defined as any incident of a long duration, which would require the City of Garland to provide food, water, heating, cooling and/or shelter.

## Location

Power outages in the City of Garland are usually localized and are normally the result of a natural hazard involving high winds. The entire planning area, the City of Garland, is equally subject to power outages. However, the City of Garland has their own power provider, Garland Power & Light (GP&L), which serves approximately 85% of Garland. The other 15% of residents are served by ONCOR. Figure 5.29 below shows the areas in Garland that are not in the GP&L service area. When outages do occur, areas that are GP&L customers typically have power restored faster than those with other providers do.

**Figure 5.29 - Garland Power & Light Service Area**



Non-GP&L Service Area



## **Severity**

Power outages can range in duration and in the severity of impacts, from minor loss of communication systems at a facility, to loss of water and electricity. Power outages and interruptions usually occur because of severe thunderstorms, high winds, tornado, ice accumulation on lines, flooding or heavy demand on the electrical grid. Outages can also be caused by faulty equipment, human error and animals. Individuals who rely on power for health and/or life safety, such as those on life support systems, could be placed in jeopardy in the event of a power outage.

## **Previous Occurrences**

In February 2021, a severe winter weather event impacted North Texas. Due to power generators going offline across Texas and extremely high demand, power outages were increasing across the state. 1.1 million ONCOR customers were impacted by power outages due to this event in North Texas. Additionally, on December 26, 2015, an EF-4 tornado impacted the City of Garland. This tornado destroyed families, homes, vehicles and left about 3,000 residents without power. The tornado knocked down an estimated 40 power poles along the I-30 service road. In October 2014, severe storms left thousands without power causing several school districts to cancel classes. ONCOR reported more than 113,000 North Texas electricity customers without service. 65,977 residents were impacted in Dallas County.

## **Probability of Future Events**

According to Garland Power & Light, an average of 0.37 interruptions occur annually per customer for a duration of 15 minutes. There are number of hazards that occur often in Garland that result in power outages. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely for a power outage occur within the next year.

## **Impact on Community**

The United States Annual Blackout Tracker Report of 2014 ranked Texas as having the third most outages in the United States. Between 2008 and 2014, 335 outages occurred that affected 818,506 people. Because power outages average a short duration and Garland has its own power provider, the overall impact to the community is substantial. The greatest impact to the City of Garland occurs during summer outages when residents are unable to use air conditioning. This cascading event may then cause impacts from extreme heat as previously described

## **Summary of Vulnerability**

The entire planning area is equally vulnerable to power outages. The probability of a power outage less than half an hour occurring in Garland within the next year is highly likely and would cause substantial impacts to the community. As the days get warmer, temperatures rise as discussed in the extreme heat section. Demand for energy on the grid will increase, therefore increasing the vulnerability of the power providers in Garland.

## Expansive Soils

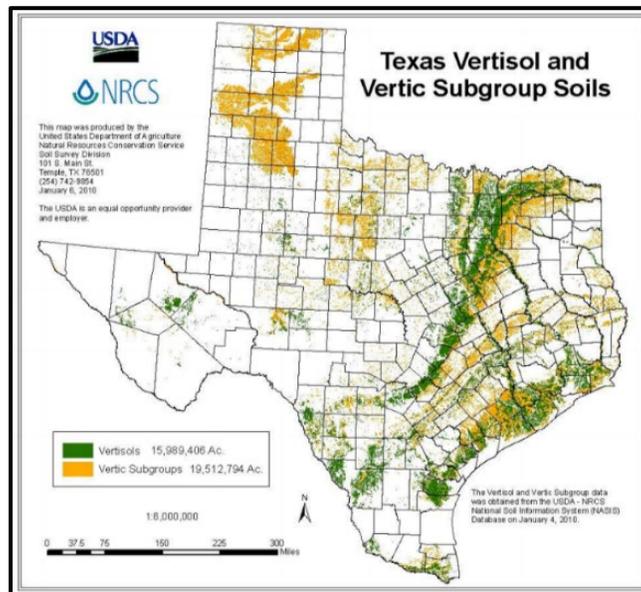
### Hazard Description

Expansive soils contain minerals such as smectite clays that are capable of absorbing water. When they absorb water, they increase in volume. The more water they absorb, the more their volume increases. Expansions of ten percent or more are common. This change in volume can exert enough force on a building or other structure to cause damage. Expansive soils will also shrink when they dry out. This shrinkage can remove support from buildings or other structures, and result in damaging subsidence. Fissures in the soil can also develop. These fissures can facilitate the deep penetration of water when moist conditions or runoff occurs. This produces a cycle of shrinkage and swelling that places repetitive stress on structures. Soils with this shrink-swell capacity fall under the soil order of Vertisols, which is how this hazard is referred to by the United States Department of Agriculture. Further naming of the soil in Garland is Blackland Prairie with characteristics of very high amounts of clay.

### Location

Changes in soil volume present a hazard for all of the City of Garland, as it is part of the Texas Blackland Prairie soils distinctive for extreme vertical shrink-swell features (see Figure 5.30 below). For clay soils under roadways, PVM from four to seven inches is not uncommon in Garland.

Figure 5.30 - USDA 2010



## Severity

Expansive clay is prevalent throughout the City of Garland and, if not mitigated, has significant impact on infrastructure. When Clay soil expands when wet and shrinks when dry, results in swell/potential vertical movement (PVM). This would result in pavement cracking and foundation settlement. However, City of Garland Technical Standard Manual (TSM) requires soil mitigations to reduce swell to less than 2% and PVM to less than 4.5 inches by either scarifying and re-compacting subgrade and treating the soil with lime and cement. Every infrastructure project requires its own geotechnical investigation to address either the Swell/PVM and its impact on roadway pavement or foundation settlement in buildings. Utility poles and roadways are often the victims of expansive soils, which causes over 2.3 billion dollars in damage each year nationwide. Figure 5.30, above also depicts the areas where expansive soil is prevalent. Vertisol soil is the makeup in Garland. According to the U. S. Department of Agriculture, Vertisol soil consists of at least 30% clay. Historically, expansive soil has damaged infrastructure and structure foundations in Garland. Due to increasing temperatures, it is anticipated that damage from expansive soils continue to rise in the future.

## Previous Occurrences

As expansive soils are a slow onset hazard that develops gradually and causes gradual and cumulative damage over long periods, data deficiency is a concern. Most “occurrences” are determined based on inferences rather than specific occurrence data. As such there is no dependable data source for information on previous occurrences for expansive soil in the City of Garland; continued research and study is expected to improve data quality and ability to mitigate the hazard in the future. Within the past five years, cumulative damage has caused the Streets Department to fund the seven street rehab and reconstruction projects below.

Broadway Blvd. - Street Rehabilitation
Commonwealth Dr. - Street Reconstruction
Firewheel Pkwy. - Street Rehabilitation
Nash St. - Street Reconstruction
Sunnybrook Ln. - Street Reconstruction
Vera Cruz Dr. - Asphalt Rehab/Overlay
E. Vista Dr. - Street Reconstruction

## Probability of Future Events

Expansive soils are a continuous hazard for the city of Garland. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely that expansive soils will occur in the next year. Predictions are not reliable because the location and time when water is available to the soil cannot be easily foreseen. Most associated structural distress can occur a few years after construction, but the effects may also not be observed for many years until some change occurs in the foundation conditions. Again, the lack of a reliable data source for information for both previous and future occurrences make

identification of future events a concern. While damage information can be collected, determining the actual cause as expansive soils is not dependable because there are too many variables to determine the specific cause of damage over time, causes range from expansive soil, freezing water, poor construction, other environmental weather impacts, etc.).

### **Impact on Community**

As development and city build-out occurs, the unforeseen consequences of dense construction activities on shrinking and swelling soil are constantly occurring. Soil expansion poses risks for existing and future infrastructure and homes. Transportation, utility public works, including electrical, communications and water infrastructure are all impacted, as well as residential housing. Many structural foundations are susceptible to damage by slow, continuous soil movements. This greatly impacts residents. Poor foundations lessen a family's greatest asset and can become a financial burden. Poor structural integrity of a home also poses a life threatening risk, especially when combined with other hazards like tornadoes, floods and earthquakes. The City of Garland and its residents have endured expansive soils for quite some time. Residents can take mitigating actions by simply watering the foundation of their homes during droughts. The severity of impact to the community from expansive soil is minor.

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to expansive soils. All built environment is vulnerable to expansive soils, especially buildings and overpasses. There is 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from expansive soils. The hazard is constantly occurring; the impact is minor. Therefore, the planning team considers expansive soil to be a high-risk hazard.

## **Destructive Hail**

### **Hazard Description**

Severe thunderstorms produce precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud. These balls of irregularly shaped ice fall with rain. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to warm air rising rapidly into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they have developed sufficient weight and fall as precipitation.

The size of hailstones is a direct correlation of the severity of impact and size of the storm. For example, penny size hail may cause damage to crops and vegetation. Ping-pong ball size hail will cause damage to windows in homes and vehicles. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth's surface. Higher temperature gradients relative to elevations above the surface result in increased suspension time and hailstone size.

### **Location**

Due to the unpredictable nature of hailstorms, it is impossible to determine the exact area of their future occurrences. The City of Garland is equally subject to hailstorms.

### **Severity**

Table 5.31 shows the Combined National Ocean and Atmospheric Administration's and the Tornado and Storm Research Organization's Hailstorm Intensity Scales. The Hailstorm Intensity Scale is representative of the damage from hailstorms this community has experienced in the past. The Hailstorm Intensity Scale allows planners to gauge past damage and mitigate for future expected damage. The worst hail that occurred was in 2016 when a storm produced hail 4.25 inches in diameter. That hail caused major damage. It is expected that that size or larger hail impact Garland in the future.

**Table 5.31 - Combined NOAA/TORRO Hailstorm Intensity Scales**

Intensity category	Typical hail diameter (mm)*	Probable kinetic energy J/m <sup>2</sup>	Typical damage impacts
H0 Hard Hail	5–7	0–20	No noticeable damage
H1 Potentially Damaging	5–15	20–100	Slight general damage to plants, crops
H2 Significant	10–20	100–300	Significant damage to fruit, crop, vegetation
H3 Severe	20–30	300–500	Severe damage to fruit and crops, damage to glass and plastics structures, paint and wood scored
H4 Severe	25–40	500–800	Widespread glass damage, vehicle bodywork damage
H5 Destructive	30–50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6 Destructive	40–60		Bodywork of grounded aircraft, bodywork dented, brick walls pitted
H7 Destructive	50–75		Severe roof damage, risk of serious injuries
H8 Destructive	60–90		Severe damage to aircraft bodywork
H9 Super Hailstorms	75–100		Extensive structural damage. Risk of severe or fatal injuries persons caught in the open
H10 Super Hailstorms	> 100		--

**Previous Occurrences**

On April 11, 2015, quarter-sized to softball-sized hail was reported in Collin and Rockwall counties. Wylie was among the hardest-hit areas with reports of softball sized hail (4.25-inch), reported by the National Weather Service. Classes were canceled for all Wylie ISD schools. The number of storm damage calls to Wylie 911 overwhelmed the system, tennis ball-sized hail flew through windows and the area experienced wind gusts up to 60 mph.

This major event is significant to the City of Garland as the impacted area is only a few miles away from Garland. This hail event alone caused \$300 million dollars in property damage. Regionally, hail has accounted for \$190.4 million in losses since 1996.

**Probability of Future Events**

The possibility of a hail occurrence is highly likely to happen every year based on historical data, although the severity of impacts will vary. Hail events are common in Garland, as the North Central Texas region is frequented by severe thunderstorms in the spring through summer months. Previous historical data Table 5.32 shows 20 hail events have occurred within Garland since 1994. Calculations from this data suggests that a hail event will impact Garland 0.9 times a year. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is highly likely for a hail event to occur within the next year.

**Impact on Community**

The severity of impact from hail in the City of Garland would be limited relative to their frequent occurrence. Property damage would be the biggest impact to the community. Broken windows, damaged vehicles, and roofing are all subject to damage from a severe hailstorm. According to the National Climatic Data Center, 20 hail events have been reported in Garland, Texas between 1/1/1994 and 12/31/2021. Hail has caused an estimated \$10,724,000 in property damage. The City is located in a very urbanized region making the loss of crops a minimal concern. Garland has recorded 35 hail events since 1994.

**Table 5.32 - Hail Historical Data**

<b>City</b>	<b>Date</b>	<b>Event Type</b>	<b>Size</b>	<b>Deaths</b>	<b>Property Damage</b>
Garland	5/2/1994	Hail	0.75	0	0
Garland	8/7/1994	Hail	0.75	0	0
Garland	10/21/1994	Hail	2	0	0
Garland	11/3/1994	Hail	0.75	0	0
Garland	3/25/1995	Hail	1.75	0	10,000,000
Garland	4/12/1996	Hail	1	0	0
Garland	5/28/1996	Hail	1.50	0	0
Garland	6/15/1996	Hail	0.75	0	0
Garland	1/21/1998	Hail	1	0	0
Garland	4/8/1998	Hail	0.75	0	0
Garland	5/2/1998	Hail	2	0	0
Garland	2/25/2000	Hail	3.75	0	0
Garland	6/29/2001	Hail	2	0	0
Garland	7/12/2002	Hail	0.75	0	0
Garland	5/24/2003	Hail	0.75	0	0
Garland	6/5/2004	Hail	1	0	0
Garland	4/5/2005	Hail	1.5	0	0
Garland	2/5/2008	Hail	1	0	0
Garland	7/19/2009	Hail	1.75	0	5,000
Garland	7/19/2009	Hail	1	0	0
Garland	4/14/2011	Hail	1.75	0	50,000
Garland	4/14/2011	Hail	0.88	0	0
Garland	4/14/2011	Hail	1.75	0	50,000
Garland	4/25/2011	Hail	1	0	0
Garland	9/18/2011	Hail	2	0	15,000
Garland	10/23/2011	Hail	1	0	0
Garland	10/23/2011	Hail	1	0	4,000
Garland	10/23/2011	Hail	0.88	0	0
Garland	4/3/2012	Hail	1.25	0	0
Garland	4/3/2012	Hail	1.75	0	600,000
Garland	6/6/2012	Hail	0.75	0	0
Garland	3/23/2016	Hail	1	0	0
Garland	4/26/2016	Hail	0.88	0	0
Garland	7/8/2017	Hail	1	0	0
Garland	6/9/2019	Hail	1.5	0	0

National Climatic Data Center

### **Summary of Vulnerability**

The entire planning area is equally vulnerable to hail events. If tennis ball size hail (2.5 inches) were to occur it would cause major impacts to the community, causing severe roof damage and serious risk of injuries. However, that type of impact is rare compared to how often hail occurs in the area. The Planning Team has determined that a hail incident for the City of Garland is low risk and has a limited impact due to the small hail size that usually occurs in Garland. Large hail that caused major damage has only occurred once since 1991. All roofing structures, vehicles and exposed equipment are the most vulnerable to hail. This includes Garland's 1 police station, 11 fire stations, 1 hospital, 4 DART Transit Centers, and 72 GISD schools at risk of impact from hail.

## **Erosion**

### **Hazard Description**

Erosion involves the wearing of rock and soil found along the riverbed and banks. Erosion also involves the breaking down of the rock particles being carried downstream by the river. Vertical erosion is the downward erosion, which deepens the channel, and lateral erosion is sideward erosion, which widens the channel.

There are four ways a river can erode a bed and bank:

- Hydraulic Action – The force of water flow that breaks rock and drags it away from the bed and the banks of the river.
- Corrosion/Abrasion – The grinding of the rock fragments carried by the river against the banks and bed of the channel. This grinding action widens and deepens the channel.
- Attrition – The knocking of rock fragments in the water against each other. The fragments are broken into smaller, smoother pebbles.
- Solution/Corrosion – The process of the water reacts chemically with soluble minerals in the rocks and dissolve them.

Water erosion is not the only type of erosion affecting soil in the area; wind erosion will also be considered in this section.

### **Location**

All of the creeks, streams and tributaries in the City of Garland are equally subject to erosion. The planning area also includes about eight miles of lakeshore that is subject to erosion. Duck Creek has had the greatest water erosion problems in the City of Garland. Figure 5.33 shows the location of the areas that may experience erosion. The droughts in Garland increase the effects of wind erosion on the entire planning area as well. When droughts occur, there is less vegetation to hold land in place.

### **Severity**

Of the 32 million acres of cropland in Texas, more than 12.8 million acres or 40 percent are classified as highly erodible. According to the Texas Environmental Almanac, Texas soil erosion rates is one of the eight highest in the country. Garland floods have scoured the silt banks near the concrete pedestrian and bike path at Duck Creek Greenbelt Park. In this area and throughout Garland the riverbanks erode approximately 2 inches a year. Creek bank erosion creates a loss of park, land and facilities leading to loss of park infrastructure. The potential for additional erosion is great because of increasing temperatures that will in turn cause longer periods of drought in Garland. This hazard threatens the Lake Ray Hubbard shoreline and creeks throughout the City. We expect to see the same amount of future erosion annually and increased erosion during flood events.

Figure 5.33 - Garland Creeks, Streams and Tributaries

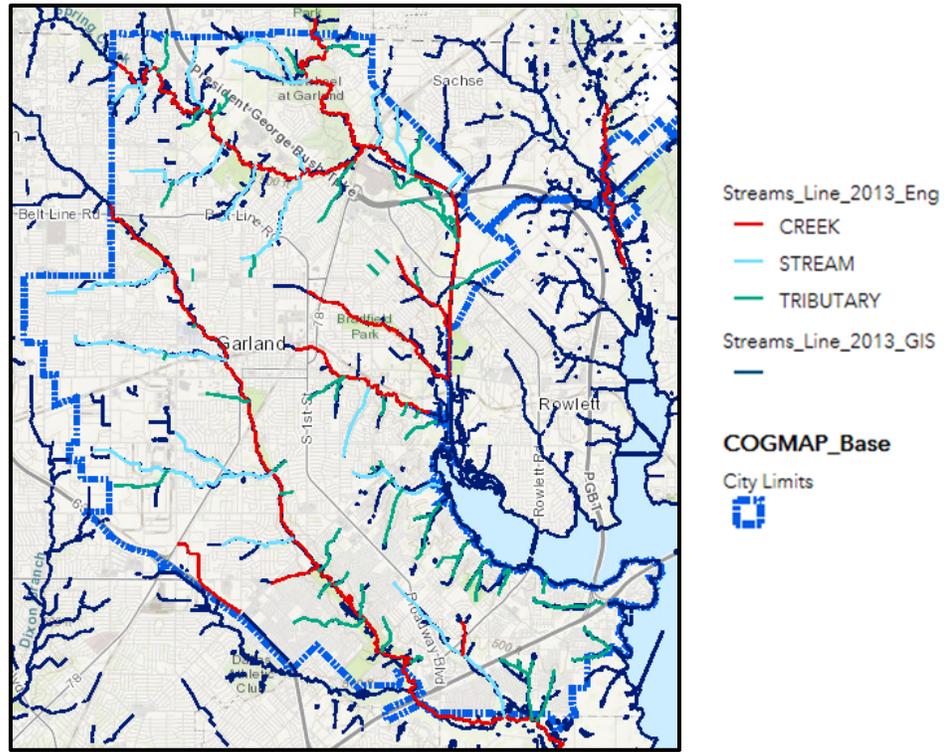
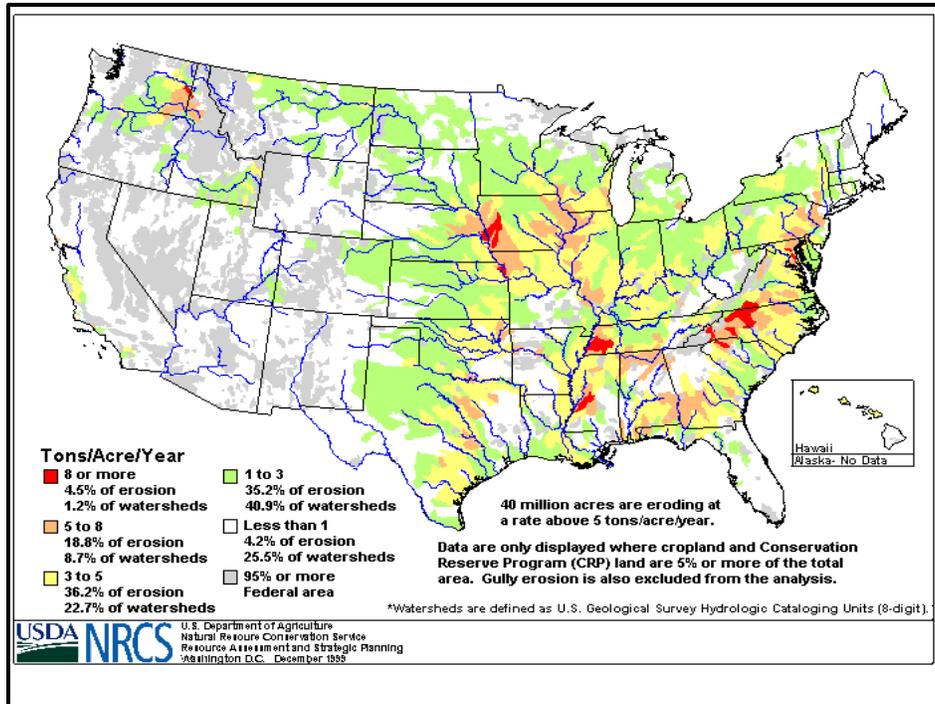


Figure 5.34 - Average Annual Soil Erosion by Wind and Water



### **Previous Occurrences**

Erosion is a slow process and is not sudden onset like many other hazards. Documentation of historical data is difficult to obtain because of this slow process. Each year the following areas have eroded by a minimum of 2 inches:

- Windsurf Bay Park
- Duck Creek
- Meadowcreek Branch Greenbelt
- Rowlett Creek
- Spring Creek

### **Probability of Future Events**

Erosion is a continuous hazard for the city. Therefore, according to Table 4.3 Hazard Frequency Ranking, it is likely that erosion will occur in the next year. Predictions are not reliable because the different variables that exacerbate erosion cannot be easily foreseen.

### **Impact on Community**

Erosion can affect many different areas of a community. Erosion can cause city parks, residents and business to lose property, and even structures. Another problem that can arise from erosion is sedimentation. The Texas Environmental Almanac states sedimentation is usually the result of the erosion process. When a soil particle is detached and transported by water to a new site of deposit, it is referred to as sediment. The soil particle might be temporarily deposited several times before it reaches its end destination. Sediment can fill reservoirs, clog waterways, reduce recreational use of waters, and increase operating costs of water-treatment facilities. Erosion also loosens soils and forms dust, leading to allergies, crop loss, desertification, and the spread of noxious weeds. There are wide ranges of impacts that erosion may have, however the severity of impact to the community is minor. Locally, land is eroding, shrinking outdoor recreation space and damaging paved sidewalks and facilities within the City of Garland at Windsurf Bay Park, Duck Creek and the Greenbelt. In addition, drainage systems throughout Garland are being damaged either from land eroding and bypassing drainage routes or by depositing soil-rendering drainage useless.

### **Summary of Vulnerability**

All of the creeks, streams and tributaries in the City of Garland are equally subject to erosion. Although the hazard is constantly occurring, the impact is minor. Therefore, the planning team considers erosion to be a moderate risk hazard. The land and built environment most vulnerable to erosion within Garland are in Windsurf Bay Park, Duck Creek, Rowlett Creek, Spring Creek and Meadowcreek Branch Greenbelt.



### **Local Hazard Mitigation Goals and Objectives**

The City of Garland has identified mitigation goals to help direct mitigation planning efforts within the community. These mitigation goals have changed based on the updated Hazard Assessment, Community Impact and Risk Assessment and Capabilities Assessment. The Hazard Mitigation Action Plan now includes additional hazards than the previously FEMA approved plan contained. These goals identify areas to which specific mitigation actions should be directed. They were developed to reduce or avoid vulnerabilities to identified hazards. Implementation of the following goals and objectives will help the community to reduce or eliminate the loss of life and property from the identified hazards.

**Goal 1:** Protect residents from the impacts of natural, technological and man-made disasters.

- Objective 1.1 - Reduce or eliminate hazards that may cause injuries, loss of life or severe risk.

**Goal 2:** Protect property, new and existing structures, from the impacts of natural, technological, and man-made disasters.

- Objective 2.1 - Reduce or eliminate hazards that cause property damage/repetitive loss.
- Objective 2.2 - Ensure compliance with the National Flood Insurance Program.
- Objective 2.3 - Implement training activities and regulations that provide the community with a more hazard resistant infrastructure.

**Goal 3:** Enhance public education, awareness and support for hazard mitigation.

- Objective 3.1 – Provide guidance to local businesses to lessen the economic impact when hazards occur.
- Objective 3.2 - Provide strategies for the public to apply mitigation within their own household.
- Objective 3.3 - Encourage public involvement in the emergency management process.
- Objective 3.4 - Identify agencies, personnel and resources available or needed to implement pre-disaster mitigation activities and initiatives.
- Objective 3.5 - Continue to assess and understand hazards to the community.

## Mitigation Action Report

Table 6.1 is a summary of project progress for hazard mitigation actions discussed in Garland’s previous FEMA approved HazMAP plan. The HazMAP’s previous identified hazards assisted departments to isolate projects and funding to focus on for the past five years.

**Table 6.1 - Mitigation Action Report**

<b>Mitigation Action</b>	<b>Description</b>	<b>Status</b>
Implement the “Texas Individual Safe Room Rebate Program”	The “Texas Individual Safe Room Rebate Program” will reimburse a homeowner or developer for half of the cost to install an individual safe room in an existing or planned home, up to a cap of \$3,000. Individuals may not apply directly to the State; their city or county must apply for funds on their behalf.	<b>Project Stopped</b> – Final list of Safe rooms that were installed in Garland because of the program has been received.
Adopt Wind Related Building Codes	Mitigate wind related hazards by adopting and implementing new building codes in order to enhance tornado and wind resistance of structures.	<b>New</b> <b>Timeline for Completion:</b> 3 years
Administer Desktop Security Training	Conduct Wombat Training to City employees on safe web browsing, mobile device security, identifying phishing and smishing attacks, password security, and safe URLs. Phishing emails are sent to employees to test response	<b>Project Completed:</b> Wombat has been replaced with KnowBe4 as our security awareness training provider. KnowBe4 is on the list off DIR approved vendors to comply with HB 3834 mandated training. Training will continue indefinitely.
Attain SWAT and EOD Team Equipment Enhancement	Enhancing the SWAT and EOD team response capabilities through the procurement of equipment needed to sustain NIMS Type 1 status.	<b>New</b> <b>Timeline for Completion:</b> 3 years  <b>Advancements:</b> <i>EOD:</i> Portable X-Ray Equipment, Improvised Explosive Device/Explosive Ordnance Disposal Ensemble.  <i>SWAT:</i> Tactical Communications equipment, Protective Ballistic Gear, Negotiations tactical device, Dual Tube Night Vision systems, Bounce Imaging Explorer tactical camera ball, and 2 Long-Range Acoustic Devices (LRAD’s) for Negotiators

Acquire Mosquito Trucks	This plan will help to minimize breeding sources in the City by the use of truck-mounted larvicide equipment and liquid larvicide. The one-time purchase of equipment plus the ongoing purchase of liquid biological larvicide is an alternative to using chemical adulticide, which can kill other beneficial insects.	<b>Project Complete</b>
Retrofit Backup Police and Fire Communications Center / Dispatch	The radio network will be connected with microwave and fiber. All 8 workstations and equipment in the 911 center will be on UPS and generator backup power. Structural retrofitting of the building to reduce or eliminate the risk of future hail damage.	<b>Project Completed:</b> Installed a UPS, the radio network is fed from both microwave and fiber, and connected to the building generator.
Bank Stabilization - Duck Creek Greenbelt Park Improvements	Installation of bank stabilization along sections of Duck Creek Greenbelt where flood events have scoured the silt banks near the concrete pedestrian and bike path. The bank has failed, sloughing-off to a point where this 8-ft wide concrete trail will need to be relocated because it is now too close to the edge of the bank. Project design will need to include topographic survey, hydraulic study of that segment, and an analysis of possible materials and methods for the most appropriate stabilization.	<b>New</b> <b>Timeline for Completion:</b> 3 years
Calcium Soil Stabilizer	Apply calcium soil stabilizer to areas around critical infrastructure.	<b>New</b> <b>Timeline for Completion:</b> 4 years
Keen Branch Channel Improvements	Channelization improvements to Keen Branch	<b>Project Delayed</b> - This project also has a BC ratio <1.
Provide Education on Mitigation Techniques	Provide education and mitigation techniques to residents and local businesses.	<b>Project Implemented</b> (with new OEM position) <b>Timeline for Completion:</b> Ongoing
Acquire Mitigation Coordinator	This new position within the Office of Emergency Management will focus on implementing City mitigation actions, educate the public on what they can do to mitigate hazards in their homes and how prepare for emergencies.	<b>Project Completed</b> – Planning and Preparedness Coordinator position created and filled. Position title updated to Preparedness and Resilience Coordinator, November 1, 2022.
Stream 2C3 and 2C4 Channel Improvements	Improvements/widening of the channels of streams 2C3 and 2C4 in Garland to reduce flooding risks to residents and businesses along said streams.	<b>Project Delayed</b> – Funding and property acquisition obstacles. This project also has a BC ratio <1.
Country Club Estates Storm Sewer Improvements	Storm sewer and channel improvements to increase their drainage capacity	<b>Project Update</b> – Project is in the design phase. Anticipated to start construction in late 2022.

Purchase and Install generators on Critical Infrastructure	Acquisition of generators at critical facilities	<p><b>New</b>  <b>Timeline for Completion:</b> Water and Wastewater is scheduled for completion in the next 4 years. One project is in construction and two are in design.</p> <p>PMO has initiated a study of existing fire stations (all except FS #5, which already has a backup generator) for the possible implementation of more capable emergency generators to fully power the entirety of the stations for continued daily operations. Study is anticipated to be completed 02/2022. Next step(s) are dependent upon review and subsequent decisions/directions by staff and City Council.</p>
Fleet Services Continuity of Operations	<p>Acquisition of generators at the two main City of Garland fuel sources, 2343 Forest Lane and Gasoline Alley, and a new mobile fuel truck for emergency operations</p> <p>Generators and a new fuel truck would ensure continuity of operations in a winter storm event as fuel would remain available to City vehicles</p>	<p><b>Project Completed</b> – Gasoline Alley generator has been completed.  <b>Project Progress</b> – The generator on Forest Lane will be incorporated with the new Water Department Building once built.  <b>Project Delayed</b> – Fuel Truck: Funding obstacles</p>
Acquire Recreation Center Generators	Power loss is often one of the results of many hazards; generators would maintain energy for these facilities, which the City uses as community shelters.	<p><b>Project Update</b>– The PMO has initiated a study of four rec centers (Audubon RC, Fields RC, Garland Senior AC, Hollabaugh RC) for the possible implementation of emergency generators. Study is anticipated to be completed 02/2022. Next step(s) are dependent upon review and subsequent decisions/directions by staff and then Council.  <b>Timeline for Completion:</b> 5 years</p>
West Pressure Plane Improvements	This project incorporates a phased approach to add additional capacity to the West Pressure Plane of the water distribution system. Phase one includes the expansion and rehabilitation of Wallace Pump Station to increase available water.	<b>Project Completed</b>
Drought Awareness Utility Bill Mailer	Design a utility bill mailer, which will inform Garland households about ways to mitigate drought impacts. This utility bill mailer will reach 69,000 households in the City of Garland.	<p><b>New:</b> Utility bill mailers are sent on a bi-annual basis</p> <p><b>Timeline for Completion:</b> 1-3 years</p>

Flood Buyout Program	Develop a City Ordinance to establish the terms and conditions of a Buyout Program for Floodplain Repetitive Loss Properties. Establish internal steps and procedures for proper implementation of the Flood Prone Property Buyout Program.	<b>Project on Schedule</b> <b>Timeline for Completion:</b> 1½ years.
Flood Warning System for High Water Areas	Collaborate with the TWDB / NWS / USGS to establish stream gauge stations at low water crossings throughout the City, producing real-time flood levels that can be used by an automated flood warning system.	<b>Project Update</b> – Coordination has begun between departments. Funding obstacles. <b>Timeline for Completion:</b> 5 years
Erosion Control: Multiple Locations	Volunteer drainage participation projects with various property owners to mitigate erosion along creek banks on private property. The City participates 50/50 with the private property owners.	<b>Project on Schedule</b> <b>Timeline for Completion:</b> Ongoing
Holford Section C – Bridge Redevelopment / Construction	Construction of a new bridge structure on Holford Road over Spring Creek. Elevating the bridge deck a minimum 2' above the 100-year base flood elevation established by FEMA.	<b>Project on Schedule</b> <b>Timeline for Completion:</b> 5 years
Early Flood Warning Systems	Monitor real-time rainfall and streamflow in at-risk areas such as areas with floodgates.	<b>New</b> <b>Timeline for Completion:</b> 3 years
Low-Flow Fixtures Installation	Provide low-flow fixtures to the public for water conservation	<b>New</b> <b>Timeline for Completion:</b> 2-5 years



The City of Garland Hazard Mitigation Planning Team identified the following mitigation actions in order to reduce the impact of local hazards. Each mitigation action was developed in conjunction with local mitigation goals and objectives. The mitigation actions identified below are organized by hazard. The actions are described along with the benefits of each action, the estimated cost, the organization responsible for completing the action, the effect on new and existing structures, timeline, and the potential funding sources.

### Tornado, Severe Winter Weather, Severe Thunderstorm and Hail Combined Mitigation Actions

Adopt Wind-Related Building Codes
<p><b>Description:</b> Mitigate wind related hazards by adopting and implementing new building codes in order to enhance tornado and wind resistance of structures.</p> <p><b>Hazard(s) Addressed:</b> Severe Thunderstorms, Tornado and Flood</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.1</p> <p><b>Lead Office:</b> Building Inspection</p> <p><b>Funding Source(s):</b> General Fund</p> <p><b>Effect on New Structures:</b> New structures will be more resilient to high wind and flood.</p> <p><b>Effect on Existing Structures:</b> Existing structures may be more resilient if remodeled.</p> <p><b>Timeline for Completion:</b> 3 years</p> <p><b>Costs (Estimated):</b> Staff time</p>
<p>Cost Effectiveness and Risk Reduction: Buildings that are more resilient withstand higher wind speeds, reducing loss during high wind events and saving on reconstruction costs along with more durable finishes, which should last longer.</p>

## Flood Mitigation Actions

<b>Stream 2C3 and 2C4 Channel Improvements</b>
<p><b>Description:</b> Improvements/widening of the channels of streams 2C3 and 2C4 in Garland to reduce flooding risks to residents and businesses along said streams.</p> <p><b>Hazard(s) Addressed:</b> Flooding</p> <p><b>Goals and objectives addressed:</b> 2.1, 3.1, 3.4</p> <p><b>Lead Office:</b> Engineering</p> <p><b>Funding Source(s):</b> To be proposed in a future budget; Mitigation grant funding</p> <p><b>New Structures:</b> Flood losses would be reduced in any new structures along the stream.</p> <p><b>Effect on Existing Structures:</b> Flood losses would be reduced in any existing structures along the stream.</p> <p><b>Timeline for Completion:</b> 5 years</p> <p><b>Costs (Estimated):</b> \$9,207,500</p>
<p>Cost Effectiveness and Risk Reduction: Homeowners along affected stream would save money on flood insurance premiums and possibly see an improvement in property values. Fewer insurance payments would be required under NFIP, and loss of life and property would be reduced.</p>

<b>Country Club Estates Storm Sewer Improvements</b>
<p><b>Description:</b> Storm sewer and channel improvements to increase their drainage capacity</p> <p><b>Hazard(s) Addressed:</b> Flooding, Erosion</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.1, 2.2, 3.1,3.4</p> <p><b>Lead Office:</b> Engineering</p> <p><b>Funding Source(s):</b> To be proposed in a future budget; Mitigation grant funding</p> <p><b>New Structures:</b> Elimination of some known cases of homes that are subject to Code “A” internal flooding; also, reduction of Code “C” bank erosion in new structures built in the Country Club Estates neighborhood.</p> <p><b>Effect on Existing Structures:</b> Elimination of some known cases of homes that are subject to Code “A” internal flooding; also, reduction of Code “C” bank erosion in existing structures in the Country Club Estates neighborhood.</p> <p><b>Timeline for Completion:</b> 5 years</p> <p><b>Costs (Estimated):</b> \$1,122,500</p>
<p>Cost Effectiveness and Risk Reduction: Homeowners in the Country Club Estates neighborhood would see a reduction or elimination of flood loss. Garland would reduce money spent on bank erosion repairs.</p>

<b>Keen Branch Channel Improvements</b>
<p><b>Description:</b> Channelization improvements to Keen Branch</p> <p><b>Hazard(s) Addressed:</b> Flooding</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.1, 2.2, 3.1, 3.4</p> <p><b>Lead Office:</b> Engineering</p> <p><b>Funding Source(s):</b> To be proposed in a future budget; Mitigation grant funding</p> <p><b>New Structures:</b> New structures built along Keen Branch would be less vulnerable to flood hazards</p> <p><b>Effect on Existing Structures:</b> Existing structures along Keen Branch would be less vulnerable to flood hazards</p> <p><b>Timeline for Completion:</b> 5 years</p> <p><b>Costs (Estimated):</b> \$7,073,750</p>
<p>Cost Effectiveness and Risk Reduction: Project would reduce flood claims for residential flood losses in structures along Keen Branch.</p>

**Drought Mitigation Actions**

<b>Drought Awareness Utility Bill Mailer</b>
<p><b>Description:</b> Design a utility bill mailer, which will inform Garland households about ways to mitigate drought impacts. This utility bill mailer will reach 69,000 households in the City of Garland</p> <p><b>Hazard(s) Addressed:</b> Drought</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.3, 3.4, 3.5</p> <p><b>Lead Office:</b> OEM</p> <p><b>Funding Source(s):</b> To be proposed in a future budget;</p> <p><b>Effect on New Structures:</b> N/A</p> <p><b>Effect on Existing Structures:</b> N/A</p> <p><b>Timeline for Completion:</b> 1-3 years</p> <p><b>Costs (Estimated):</b> \$1800</p>
<p>Cost Effectiveness and Risk Reduction: Project will increase public education and community resiliency regarding droughts, which will reduce the impacts and losses within the City of Garland.</p>

<b>Low-Flow Fixtures Installation</b>
<p><b>Description:</b> Provide low-flow fixtures to the public for water conservation</p> <p><b>Hazard(s) Addressed:</b> Drought</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.3, 3.4, 3.5</p> <p><b>Lead Office:</b> OEM, Water</p> <p><b>Funding Source(s):</b> To be proposed in a future budget; Mitigation grant funding</p> <p><b>Effect on New Structures:</b> N/A</p> <p><b>Effect on Existing Structures:</b> N/A</p> <p><b>Timeline for Completion:</b> 2-5 years</p> <p><b>Costs (Estimated):</b> \$5000</p>
<p>Cost Effectiveness and Risk Reduction: Project will increase water conservation efforts and provide efficient fixtures and appliances, which will reduce home water use.</p>

## Erosion and Expansive Soil Mitigation Actions

<b>Bank Stabilization - Duck Creek Greenbelt Park Improvements</b>
<p><b>Description:</b> Installation of bank stabilization along sections of Duck Creek Greenbelt where flood events have scoured the silt banks near the concrete pedestrian and bike path. The bank has failed, sluffing-off to a point where this 8-ft wide concrete trail will need to be relocated because it is now too close to the edge of the bank. Project design will need to include topographic survey, hydraulic study of that segment, and an analysis of possible materials and methods for the most appropriate stabilization.</p> <p><b>Hazard(s) Addressed:</b> Erosion and Flooding</p> <p><b>Goals and objectives addressed:</b> 2.1, 2.3, 3.4</p> <p><b>Lead Office:</b> Parks and Recreation and Engineering</p> <p><b>Funding Source(s):</b> General Fund or mitigation funding</p> <p><b>Effect on New Structures:</b> N/A</p> <p><b>Effect on Existing Structures:</b> Will protect creek bank and adjacent park pedestrian and bike facilities from further damage.</p> <p><b>Timeline for Completion:</b> 3 years</p> <p><b>Costs (Estimated):</b> \$3.5 Million</p>
<p>Cost Effectiveness and Risk Reduction: This section of Duck Creek Greenbelt Park is part of a multimodal pedestrian and bike system, which connects with transit facilities and provides off-street connection between Centerville Road and the City of Mesquite’s bike/ pedestrian trail, south of IH-30. Current funding will be extending the concrete trail from IH-30 into Mesquite, and extending the off-street bike path from its current north terminus, into Lon Wynne Park and will cross Duck Creek via a pedestrian–bike bridge, and connect to on-street bike facilities.</p>

<b>Calcium Soil Stabilizer</b>
<p><b>Description:</b> Apply calcium soil stabilizer to areas around critical infrastructure.</p> <p><b>Hazard(s) Addressed:</b> Expansive Soil</p> <p><b>Goals and objectives addressed:</b> 2.1, 2.3, 3.4</p> <p><b>Lead Office:</b> Engineering</p> <p><b>Funding Source(s):</b> General Fund or mitigation funding</p> <p><b>Effect on New Structures:</b> Will protect infrastructure from expansive soils.</p> <p><b>Effect on Existing Structures:</b> Will protect infrastructure from further damage.</p> <p><b>Timeline for Completion:</b> 4 years</p> <p><b>Costs (Estimated):</b> \$300,000</p>
<p>Cost Effectiveness and Risk Reduction: Reducing damages to critical infrastructure will reduce costs associated with repairing them.</p>

## All Hazards Mitigation Actions

<b>Provide Comprehensive Public Education Program</b>
<p><b>Description:</b> Provide a comprehensive Whole Community and all hazards disaster preparedness and mitigation education program to residents, community stakeholders and partners, see Appendix J Public Education Program Summary for an example of community educational materials available for Garland residents.</p> <p><b>Hazard(s) Addressed:</b> Tornado, Severe Winter Weather, Biological Event, Flood, Earthquake, Severe Thunderstorm, Infrastructure and Communications Failure, Drought, Extreme Heat, Power Outage, Expansive Soils, Hail, Erosion</p> <p><b>Goals and objectives addressed:</b> 2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5</p> <p><b>Lead Office:</b> Emergency Management</p> <p><b>Funding Source(s):</b> General Fund and Mitigation Funding</p> <p><b>Effect on New Structures:</b> None</p> <p><b>Effect on Existing Structures:</b> None</p> <p><b>Timeline for Completion:</b> Ongoing</p> <p><b>Costs (Estimated):</b> \$10,000 per year</p>
<p>Cost Effectiveness and Risk Reduction: Losses in the community translate into the loss of resources for local residents as they try to recover, and the loss of taxes and services to local governments as they try to manage the recovery.</p>

<b>Enhance the Emergency Operations Center (EOC) Upgrade</b>
<p><b>Description:</b> Renovate an existing training room location to serve as the Emergency Operations Center (EOC) including an audio-visual system for situational awareness, create systems redundancy, and implement security measures to protect critical infrastructure and mitigate incidents.</p> <p><b>Hazard(s) Addressed:</b> Tornado, Severe Winter Weather, Biological Event, Flood, Earthquake, Severe Thunderstorm, Infrastructure and Communications Failure, Drought, Extreme Heat, Power Outage, Expansive Soils, Hail, Erosion</p> <p><b>Goals and objectives addressed:</b> 1.1, 2.1, 2.3, 3.1, 3.2, 3.4, 3.5</p> <p><b>Lead Office:</b> Emergency Management</p> <p><b>Funding Source(s):</b> General Fund</p> <p><b>Effect on New Structures:</b> None</p> <p><b>Effect on Existing Structures:</b> None</p> <p><b>Timeline for Completion:</b> 1.5 years</p> <p><b>Costs (Estimated):</b> \$584,000</p>
<p>Cost Effectiveness and Risk Reduction: Development of an effective Emergency Operations Center increases the City’s capability to respond and recover from all hazards more efficiently and helps the whole community to be more resilient to the impacts of all hazards because the city is able to affect a more timely and efficient response reducing the loss of life and property from all hazards.</p>

### Acquire Recreation Center Generators

**Description:** Power loss is often one of the results of many hazards; generators would maintain energy for these facilities, which the City uses as community shelters.

**Hazard(s) Addressed:** Tornado, Severe Winter Weather, Biological Event, Flood, Earthquake, Severe Thunderstorm, Infrastructure and Communications Failure, Extreme Heat, Power Outage, Hail

**Goals and objectives addressed:** 1.1, 3.1, 3.4

**Lead Office:** Parks and Recreation

**Funding Source(s):** Mitigation grant funding or general fund

**Effect on New Structures:** None

**Effect on Existing Structures:** Existing recreation centers will have power backup to serve as more sustainable warming centers and shelters to local residents

**Timeline for Completion:** 5 years

**Costs (Estimated):** \$10,000

**Cost Effectiveness and Risk Reduction:** Generators at the community recreation centers would provide more sustainable warming centers and shelters for residents, as people will have a safe place to stay during hazard events. The City will save money by sending fewer first responders on calls related to hazards.

### Fleet Services Continuity of Operations

**Description:** Acquisition of a generator at the Forest Lane fueling source.

**Hazard(s) Addressed:** Tornado, Severe Winter Weather, Biological Event, Flood, Earthquake, Severe Thunderstorm, Infrastructure and Communications Failure, Extreme Heat, Power Outage, Hail

**Goals and objectives addressed:** 1.1, 3.1, 3.4

**Lead Office:** Fleet

**Funding Source(s):** Mitigation grant funding or general fund

**Effect on New Structures:** None

**Effect on Existing Structures:** Acquisition of one generator has been completed. New generator on Forest Lane will be incorporated with new structure.

**Timeline for Completion:** 5 years

**Costs (Estimated):** \$10,000

**Cost Effectiveness and Risk Reduction:** Generator at the Forest Lane fueling source would provide access to the fueling sources and would provide the ability to continue operations throughout an incident.

### Purchase and Install Generators

**Description:** Acquisition of generators at critical facilities

**Hazard(s) Addressed:** Tornado, Severe Winter Weather, Biological Event, Flood, Earthquake, Severe Thunderstorm, Infrastructure and Communications Failure, Extreme Heat, Power Outage, Hail

**Goals and objectives addressed:** 1.1, 2.3, 3.4

**Lead Office:** Water and Wastewater

**Funding Source(s):** Capital Improvements Project

**Effect on New Structures:** New structures would have improved capabilities and continuity of operations  
**Effect on Existing Structures:** Existing structures would have improved capabilities and continuity of operations  
**Timeline for Completion:** 4 years  
**Costs (Estimated):** \$15,450,000

Cost Effectiveness and Risk Reduction: The City of Garland would be able to continue services and maintain operations. The City would be able to maintain pumping of potable water and treating wastewater during power outages.

**Attain SWAT and EOD Team Equipment Enhancement**

**Description:** Enhancing the SWAT and EOD team response capabilities through the procurement of equipment needed to sustain NIMS Type 1 status.  
**Hazard(s) Addressed:** All Hazards  
**Goals and objectives addressed:** 1.1  
**Lead Office:** Police Department  
**Funding Source(s):** Grant and general funding  
**Effect on New Structures:** N/A  
**Effect on Existing Structures:** N/A  
**Timeline for Completion:** 3 years  
**Costs (Estimated):** \$100,000

Cost Effectiveness and Risk Reduction: Maintaining Type 1 status is a crucial part of this in house regional asset. Not maintaining these capabilities would not only have major impacts to the City of Garland, but the entire region. This team saves lives and protects infrastructure.

**Benefit-Cost Review and Prioritizing Mitigation Actions**

The City of Garland Planning Team prioritized mitigation activities using the Social, Technical, Administrative, Political, Legal, Economic, and Environmental (STAPLEE) Method, per Federal Emergency Management Agency (FEMA) recommendations. STAPLEE is a benefit-cost review tool and includes considerations for Social, Technical, Administrative, Political, Legal, Environmental, and Economic issues. Each of these items is assigned a positive or negative value. Projects that score the highest are considered the most effective, and their funding most justified. A lower score indicates that several obstacles exist that would prevent the proposed project from being completed. Most mitigation strategies have at least one obstacle and, very frequently, this obstacle is economic. Part of putting the mitigation strategies in a prioritized list is being able to justify the need for a project should funding become available.

**City of Garland STAPLEE Action Evaluation and Prioritization Table**

Mitigation Actions	Social		Technical			Administrative			Political			Legal			Economic				Environmental				Total Prioritization Score
	Community Acceptance	Effect on Segment of Population	Technically Feasible	Long-Term Solution	Secondary Impacts	Staffing	Funding Allocation	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenges	Benefit of Action	Cost of Action	Contributes to Economic	Outside Funding Required	Effect on Land/Water	Consistent with Federal Laws	Effect on HAZMAT Waste Sites	Matches Environmental Goals	
#1 Safe Room	+	+	+	+	+	N	-	N	+	N	+	N	+	+	+	N	N	-	N	+	N	N	9
#2 Bldg. Codes	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	-	+	N	N	+	N	N	14
#3 SWAT/EOD	+	+	+	+	-	+	+	+	+	+	-	+	+	+	+	N	-	N	-	N	N	N	14
#4 Dispatch	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	N	+	N	+	+	19
#5 Duck Creek	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	+	21
#6 Calcium Soil	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	-	+	+	N	+	15
#7 Keen Branch	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	-	N	-	+	+	N	+	12
#8 Mitigation Education	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	N	-	N	+	N	N	13
#9 Stream 2C3/4	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	N	-	+	+	N	+	16
#10 Country Club Estates	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	-	N	-	+	+	N	+	13
#11 Generators	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	N	-	N	+	N	N	14
#12 Fleet	+	+	+	+	+	+	-	+	+	N	+	+	+	+	+	N	N	-	N	+	N	N	12

#13 Recreation Gens.	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	N	-	N	+	N	N	14
#14 East Water Tower	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	-	+	+	N	+	17
#15 Flood Buyout	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	-	+	+	N	+	18
#16 Flood Warning Sys.	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	N	-	+	+	N	+	14
#17 Erosion Control	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	-	+	+	N	+	18
#18 Holford Rd.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	N	-	+	+	N	+	18



Planning Team members will be responsible for coordinating a periodic review of the Plan to ensure integration of hazard mitigation strategies

### **Monitoring, Evaluating and Updating the Plan**

The City of Garland Hazard Mitigation Action Plan goals, integration and planning processes will be monitored and evaluated each January within its five-year life cycle by reconvening the Planning Team. The Planning Team will evaluate mitigations using the Department Update form, which includes project status, project achievement, cost effectiveness, problems, and relevance. The team will determine if the identified hazards have changed or if risk and impact of the hazards have increased or decreased. Updates may also be the result of the City of Garland Budget Review, Capital Improvement Plan or major disaster within the community. The Advisory Committee, comprised of department heads, including the Preparedness and Resilience Coordinator, will monitor and evaluate mitigation actions from a department perspective and determine how improvements could be made after the Planning Team has summarized their findings. Following each update to the Hazard Mitigation Action Plan, the City of Garland Office of Emergency Management will document the update in the record of changes table in the Plan. This table will track any meetings, activities, completed initiatives, resulting risk reduction, limitations or processes used for the purpose of the plan update. One year before the five-year plan update, the planning team will reconvene along with any additional individuals or organizations that have subject matter expertise. Once again, the Planning Team will review the threats and hazards to determine if these have changed or decide if there is the need for another Community Risk and Impact Assessment.

### **Incorporation into Existing Planning Mechanisms**

The HazMAP identifies current capabilities and mechanisms available for implementing hazard mitigation strategies. Integration of the Hazard Mitigation Action Plan into other existing planning mechanisms will take place through coordinating HazMAP with City Department Directors and the Advisory Committee to coordinate Capital Improvement planning and mitigation goals, and through City Council approval and adoption. Mitigation actions smaller in nature that are not separate budget items, and do not have great impacts on residents or departments are not required to be presented to City Council. Department Directors and managers implement the mitigation action into current department plans and procedures. Larger mitigation actions requiring substantial resources, large changes in City services or department activities must first be approved through Department Directors and then approved by the Managing Director of that department. Then, approval by the City Manager and finally presented to City Council for approved by vote. After final approval, the Department Directors and Managers will begin the implementation process. During any mitigation action implementation, the Office of Emergency Management plays a support role to departments implementing mitigation actions.

Additionally, Emergency Operations Center staff will also focus on evaluating the Plan in light of technological, budgetary, and political changes that may occur during the year or other significant events.

Major disasters affecting the City of Garland, legal changes, and other events may trigger a meeting of the Garland Hazard Mitigation Planning Team prompting conclusions to be incorporated into future plan versions. As required by the Disaster Mitigation Act of 2000, the City of Garland is committed to reviewing this plan annually and updating the full plan annex with county, state, and federal partners at least once every five years. The public will continue to be involved as appropriate and required during the monitoring, evaluation, and update process, including opportunities for input prior to adoption of updates. Overall, the City of Garland values our relationships with citizens, stakeholders, and private partnerships and will continue to grow and foster these efforts.

## **Incorporation into Planning Mechanisms since Last Plan Approval**

Garland's Office of Emergency Management (OEM) has facilitated incorporation of the mitigation plan elements to all emergency management coordinated planning efforts but primarily including the Emergency Operations Plan and the Continuity of Operations Plan. Both of these plans have undergone reviews and updating each year since the last revision of the Hazard Mitigation Action Plan. The plan review teams, which work to review and update the EOP and COOP, include the same staff members who serve on the HMPT; therefore, any actions identified in the HazMAP relevant to the EOP and COOP are included with every review and update for both plans. Additionally, the mitigation actions are reviewed and included as possible in the annual development of the Capital Improvement Plan (CIP). As funding for mitigation actions is prioritized and available, these actions have been added to both annual budget plans and CIP. Outcomes associated with the mitigation actions are reported to OEM for inclusion in future HazMAP updates.

As required by the Disaster Mitigation Act of 2000, the City of Garland reviews existing plans annually and submits full updates to the state and federal partners at least every five years and mitigation is one aspect of every plan update. Updating and incorporating mitigation efforts and actions into all Garland plans is a priority and inclusion of stakeholder and private partnerships helps to foster development of collaborative mitigation efforts for a more resilience Garland.

## **Continued Public Involvement**

In order to maintain public involvement, the City of Garland Planning Team will continue to seek the input of the public and stakeholders. A copy of the Local Hazard Mitigation Action Plan will continue to be available through the Office of Emergency Management for review and comment. The public will also be continuously engaged through a number of various tasks completed by the City of Garland Office of Emergency Management and other City Departments. Methods for public involvement during implementation include but are not limited to: adding an Economic Resistance and Recovery Education Coordinator to the Department of Emergency Management, Economic Resistance and Recovery Education through the Chamber of Commerce, presentations, community preparedness campaigns, and seasonal preparedness updates on the department website.

Discussion with citizens about hazards and risks, builds support for implementation of mitigation activities. During annual events, OEM will gauge the public's preparedness through discussion and survey tools to assist in monitoring plan impacts and report findings at the annual Planning Team meeting. A

formal survey may be distributed with similar questions to the initial survey in Appendix D to easily compare and evaluate components of the HazMAP plan during the five-year plan update.

**Table 6.2 – Plan Maintenance Summary**

<b>Maintenance Activity</b>	<b>Local Planning Documents</b>	<b>Responsible Personnel</b>	<b>Schedule</b>	<b>Plan</b>
Implementation	City Budget	City Manager	Annually	Integration of mitigation projects identified in HazMAP, grants, and other fiscal allowances for mitigation actions and related costs
Implementation	Emergency Operations Plan updates	Preparedness and Resilience Coordinator	Reviewed annually, update as needed	EOP Mitigation annex updates based on HazMAP HIRA; update preparedness, response and recovery actions related to identified hazards
Implementation	Floodplain Ordinances	Drainage and Development Engineer	As Needed	Enhance mitigation of flood hazards using LMAP flood data for floodplain management and community development.
Implementation	Community Rating System	Drainage and Development Engineer	Annually	
Implementation	Capital Improvement Plans	Budget and Research	Annually	Strengthen critical infrastructure and key resources based on HazMAP hazard analysis, incorporate vulnerability data and action items.
Monitoring Evaluation Update	HazMAP	HazMAP Planning Team	Annually in January	Evaluate each mitigation action using the Department Update form. Determine changes in hazards, risk and impact.
Monitoring Evaluation	HazMAP	Advisory Committee	Annually after Planning Team Summarizes	Assess progress in mitigation activities implemented by the plan and decide how improvements could be made to the overall mitigation strategy.



**A. City Council Resolution**

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## B. Documentation of Planning Meetings



# Garland Hazard Mitigation Action Plan (HazMAP) | 2021

### HAZMAP BASIS/AUTHORITY

There are two main federal authorities requiring locals to maintain a Hazard Mitigation Program, which identify the requirements and procedures for both the program and plan:

1. Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288), as amended by the Disaster Mitigation Act (DMA) of 2000
2. Code of Federal Regulations, Title 44, Chapter 1, Part 201 (44 CFR Part 201)

The HazMAP must be formally adopted via City Council Resolution and the plan must be made public for all to reference and opportunities for input must be provided to partners and the public. Plans go through a strict review process and must be approved by FEMA for jurisdictions to be eligible for pre or post mitigation funding.

### PLANNING PROCESS AND TEAM (2017 PLAN)

- Building Inspection, Building Official
- Chamber of Commerce, Vice President
- Emergency Management Director
- Emergency Management Planning and Preparedness Coordinator
- Engineering, Drainage and Development Engineer
- Environmental Health Manager
- Facilities, Director
- Fire Department, Assistant Fire Chief
- Neighborhood Vitality, Administrator
- Parks and Recreation, Services Manager
- Police Department, Captain
- Garland Power & Light, Chief Operation Officer
- Public/Radio Amateur Civil Emergency Service (RACES)
- Water Department, Utilities Director

The Planning Team performs the following activities: identified hazards, conducted risk assessments, ranked hazards, developed a public outreach strategy, planned implementation of mitigation actions, assisted in research and gathering information to include in the plan and participated in the draft plan review.

### CAPABILITIES ASSESSMENT

As part of this assessment, we must PROVE we have coordinated the HazMAP with the existing planning documents and tools the city has implemented such as the current Comprehensive Master Plan, Capital Improvement Plan, Economic Development Plan, Building Codes, Zoning Ordinances, etc.

### STAKEHOLDER AND COMMUNITY INVOLVEMENT

The HazMAP must be a publically accessible document and the planning team must prove not only multiple opportunities for involvement but supply the information provided by the public and partners. At least two open meetings must be conducted to review these findings and collect additional input.

## **COMMUNITY PROFILE**

The profile includes very detailed information about the physical boundaries of the city, demographics, property use and values, transportation systems, utility lifelines, etc.

## **RISK OVERVIEW & HAZARD PROFILES**

The risk overview includes a detailed hazard identification process and formula-based analysis that must take into account the input of not only City staff but partner agencies (GISD, private industry, etc.) and the public. We have already posted and sent a utility mailer to start collecting public input for this section. Each hazard has to be ranked based on likelihood, frequency of occurrence and severity of “potential” impact. For each of the highest ranking hazards, a detailed hazard profile must be developed and updated.

## **HAZARD MITIGATION STRATEGY**

This section details the Goals for the City’s Hazard Mitigation program overall and then identifies specific objectives to achieving these goals. Part of this section includes a detailed report on progress towards the goals and objectives since the last submission and a progress report for the identified Mitigation Actions from the last submission.

Existing Goals:

Goal 1: Protect residents from the impacts of natural, technological and man-made disasters.

Goal 2: Protect property, new and existing structures, from the impacts of natural, technological, and man-made disasters.

Goal 3: Enhance public education, awareness and support for hazard mitigation.

## **HAZARD MITIGATION ACTIONS (MOST IMPORTANT SECTION)**

The Hazard Mitigation Action section details the identified mitigation projects the team developed in order to achieve the agreed upon Goals and Objectives. The identified actions are divided by hazard and MUST specifically address the vulnerabilities and ways the project will lessen the impacts of each specific hazard as explained in the Hazard Profiles. The current plan has 18 identification Hazard Mitigation Actions (see Mitigation Action Report attached).

Required Elements of a Mitigation Action (project):

- Link to plan Goals and Objectives
- Assignment of responsibility
- Timeline
- List of potential funding sources
- Detailed description of impacts on new and existing structures
- Cost estimate
- Cost Benefit and Risk Reduction Analysis (**MOST IMPORTANT ELEMENT**)

## **Meeting Purpose**

- Provide a quick refresher regarding Hazard Mitigation Action Plan
- Identify Planning Team for 2021-2022
- Review Update Timeline

## **Plan Overview**

- Authorities
- Planning Process and Team
- Capabilities Assessment
- Stakeholder & Community Involvement
- Community Profile
- Risk Overview/Hazard Profiles
- Hazard Mitigation Strategy
- Hazard Mitigation Actions

## **Action Items**

- Identify department representatives to serve on Planning Team

## GARLAND

# HazMAP Update Leadership Kickoff Meeting

City of Garland  
Office of Emergency Management  
3000 W. 10th Street, Suite 100  
Garland, TX 75042

1

## Purpose

- What is the Hazard Mitigation Action Plan?
- Identify Planning Team for 2021-2022
- Review Update Timeline
  - Next meeting
  - 6 planning meetings

2

## HazMAP Authorities

- Federal Authorities
  - Robert T. Stafford Disaster Relief and Emergency Assistance Act (Public Law 93-288)
  - Code of Federal Regulations, Title 44, Chapter 1, Part 201 (44 CFR Part 201)
- Requires City Council Resolution
- Must be made public, opportunities for input are required
- Review process/FEMA approval for mitigation funding

3

## Community Profile

- Physical Boundaries
- Demographics
- Property Use and Values
- Transportation Systems
- Utility Lifelines

4

## Capabilities Assessment

- HazMAP must coordinate with existing planning documents:
  - Comprehensive Master Plan
  - Capital Improvement Plan
  - Economic Development Plan
  - Building Codes
  - Zoning Ordinances

5

## Stakeholder & Community Involvement

- Must be publically accessible
- Multiple opportunities for public input
- At least two open meetings must be conducted

6

## Risk Overview/Hazard Profiles

- Hazard identification process must include input from partner agencies and the public
- Utility mailer sent out in September
  - Survey - 76 responses as of 10/18/2021.
  - Results will be ranked

QR Code to Hazard Mitigation Survey

7

## Garland Specific Hazard Mitigation Strategy

- Goals
- Specific objectives
- Must report progress since last submission
- Existing Goals:
  1. Protect residents from the impacts of natural, technological and man-made disasters.
  2. Protect property, new and existing structures, from the impacts of natural, technological and man-made disasters.
  3. Enhance public education, awareness and support for hazard mitigation.

8

## Hazard Mitigation Actions

- List of specific tasks the City wants to do to lessen the impacts of disaster
- Must follow strict Mitigation criteria and specifically address identified vulnerabilities

Required Elements:

- > Link to plan Goals & Objectives
- > Assignment of responsibility
- > Timeline
- > List of potential funding sources
- > Detailed description of impacts on new & existing structures
- > Cost estimate
- > Cost Benefit and Risk Reduction Analysis (MOST IMPORTANT ELEMENT)

9

## Planning and Process Team

- Planning Team Involvement:
  - Identify Hazards
  - Risk Assessments
  - Rank Hazards
  - Public Outreach Strategy
  - Mitigation Actions Review/Implementation
  - Research

Team Members (2021)

- Building Inspection, Building Official
- Chief of Contract, Vice President
- Emergency Management Director
- Emergency Management Planning and Preparedness Coordinator
- Engineering, Design and Development Engineer
- Environmental Health Manager
- Facilities Director
- Fire Department, Assistant Fire Chief
- Neighborhood Vitality Administrator
- Police and Recreation, Services Manager
- Police Department, Captain
- Garland Power & Light, Chief Operation Officer
- Water Department, Utilities Director

10

## Action Items

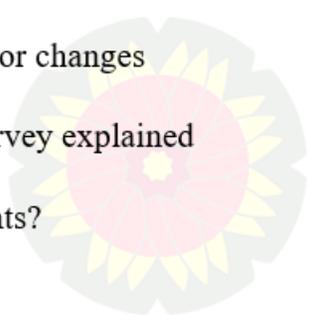
- Identify department representative to serve on planning team
- Preferred meeting format
- Meeting Schedule
  - Nov 17 @ 1000
  - Dec 15 @ 1000
  - Jan 26 @ 1000
  - March 2 @ 1000
  - April 13 @ 1000 (Draft submitted for Leadership Final Review)
  - May 18 @ 1000

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# HazMAP Planning Team Kickoff Meeting

**November 17, 2021  
10:00 AM**

- Introductions
- Discussion about the purpose of mitigation and planning process
- Review Previous Mitigation Goal Progress and Implementation
- Review/Discuss edits or changes
- Hazard Mitigation Survey explained
- Questions or Comments?



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## **Next Meeting**

December 15, 2021 - 10:00 AM

**GARLAND**

## HazMAP Planning Team Kickoff Meeting

City of Garland  
Office of Emergency Management  
November 17, 2021

1

## Introductions

- Name
- Department/Position
- HazMAP Experience

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2

## Purpose

- What is the Hazard Mitigation Action Plan?
- Review Update Timeline
  - 6 Planning Team Meetings

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3

## Planning and Process Team

- Planning Team Involvement:
  - Introduction
  - Planning Process
  - Community Profile
  - Risk Overview
  - Hazard Profiles
  - Hazard Mitigation Strategy
  - Hazard Mitigation Actions
  - Plan Maintenance
  - Appendix

Team Members (2021)

- ▶ Building Inspection, Building Official
- ▶ Chamber of Commerce, Vice President
- ▶ Emergency Management Director
- ▶ Emergency Management Planning and Preparedness Coordinator
- ▶ Engineering Director
- ▶ Environment of Health Manager
- ▶ Facilities, Physical Security Program Manager
- ▶ Fire Department, Assistant Fire Chief
- ▶ Neighborhood Vitality, Managing Director
- ▶ Parks and Recreation, Director
- ▶ Police Department, Captain
- ▶ Garland Power & Light, Chief Operation Officer
- ▶ Water Department, Wastewater Director

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4

## Hazard Mitigation Survey

- Hazard identification process must include input from partner agencies and the public
- Utility mailer sent out in September
  - Survey: 84 responses as of 11/17/2021
  - Results will be ranked

QR Code to Hazard Mitigation Survey

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5

## Planning Team Input

- Review of sections in Section 1 & Section 2 of HazMAP

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6

## Action Items

- Preferred meeting format
- Meeting Schedule
  - December 15, 2021 10:00 AM
  - January 26, 2022 10:00 AM
  - March 2, 2022 10:00 AM
  - April 13, 2022 10:00 AM (Date subject to Leadership Read Review)
  - May 18, 2022 10:00 AM

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7

## Questions?

Thank you for attending!

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8

# HazMAP Planning Team Meeting

**December 15, 2021  
10:00 AM**

- Hazard Mitigation Survey Results (Identified Hazards)
- Community Risk and Impact Assessment
- Review/Discuss edits or changes
- Project list from 2017 – Additions/Status
- Questions or Comments?



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## **Next Meeting**

January 26, 2022 - 10:00 AM

# HazMAP Planning Team Meeting

**January 26, 2022  
10:00 AM**

- Acknowledgement paragraph for Climate Change portion
- Community Risk and Impact Assessment
- Review/Discuss edits or changes
- Project list from 2017 – Additions/Status
- Questions or Comments?



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## **Next Meeting**

March 2, 2022 - 10:00 AM

# HazMAP Planning Team Meeting

**March 3, 2022**  
**10:00 AM**

- Review/Discuss edits or changes
- Finalize Mitigation strategies
- Summarize/Review of HazMAP Public Meetings
- Discuss final steps
- Questions or Comments?



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## C. Public Outreach Methods



**GARLAND**  
EMERGENCY MANAGEMENT

# Hazard Mitigation Action Plan

### What is Hazard Mitigation?

Hazard Mitigation is the effort to reduce loss of life and property by lessening the impact of disasters.

### Importance of a Hazard Mitigation Plan

Through projects, programs, and policies the City of Garland is constantly creating ways to protect the City from hazards and recover from disasters quickly. The Hazard Mitigation Action Plan (HazMAP) creates safer communities by reducing loss of life and property damage. The plan includes a list of specific actions and goals for city departments. It also includes information the public can use to prepare themselves for hazards.



*GP&L – Winter Weather, February 2022*

### Key Mitigation Actions

- Educating citizens on Mitigation techniques
- Elevation of structures in flood prone areas
- Texas Individual Saferoom Rebate Program
- Erosion and drainage control to reduce flooding
- Update building codes for improved structural stability
- Enhancing SWAT and EOD equipment
- Retrofit backup Police and Fire Communications Center to avoid future hail damage
- Acquire Generators:
  - Two City of Garland Fueling Centers (Partial Completion)
  - Recreation Centers (Shelters)
  - Critical Facilities
- Apply calcium soil stabilizer to areas around critical infrastructure

### Hazards Identified by the City's HazMAP Planning Team

- |                                      |   |
|--------------------------------------|---|
| • Tornado                            | • Power Outages                                 |
| • Severe Winter Weather/Extreme Cold | • Earthquake                                    |
| • Flood                              | • Communications Failure/Infrastructure Failure |
| • Drought                            | • Severe Thunderstorms/Damaging Winds           |
| • Biological Event                   | • Destructive Hail                              |
| • Terrorism/Cyber Attacks            | • Erosion                                       |
| • Extreme Heat                       | • Expansive Soil                                |

Office of Emergency Management | 972-781-7273 | [OEM@garlandtx.gov](mailto:OEM@garlandtx.gov)



**City of Garland, Texas Government** ✓

23 hrs · 🌐

It's #nationalpreparednessmonth, so today we want to ask: did you know that most insurance policies don't cover flooding?

Be sure to review your insurance, make sure it is up-to-date, and that it aligns with the needs of your household. In addition, it is important to know the potential hazards in your area. Knowing the potential risks can help limit the impacts a disaster can have on you and your family.

Take this opportunity to let us know your opinion on hazards in your area and what steps you have taken to prepare your household by taking this quick survey! Please visit: <http://www.garlandtx.gov/201/Hazard-Mitigation>



👍 6

👍 Like

💬 Comment

➦ Share

Social Media Post – Advertisement of Hazard Mitigation Survey



# Help Keep Garland *Safe.*

**We NEED YOUR HELP** to update the City's **Hazard Mitigation Action Plan**. Providing your opinion will help us make a better plan to keep Garland safe. *Please take the short survey below.*



Scan the QR code to complete the **Hazard Mitigation Survey** in English, Española or Tiếng Việt.

**Hazard Mitigation Survey link**  
<https://bit.ly/3k4hhu1>

All Garland library locations will allow residents to complete the survey on library computers. Call 972-205-2500 for locations and hours.

Paper copies can be requested by contacting the Office of Emergency Management at 972-781-7273 or [OEM@GarlandTX.gov](mailto:OEM@GarlandTX.gov)



***Hazard mitigation*** is the effort to reduce loss of life and property by lessening the impact of disasters.

Utility Bill Insert – Distributed September 2021



City of Garland, Texas Government ✓

February 12 at 12:00 PM · 🌐

The Office of Emergency Management wants your input to update the Hazard Mitigation Action Plan for 2022. Two public meetings are scheduled: 6 p.m. Thursday, Feb. 17, and 10 a.m. Saturday, Feb. 26, in Room 417 in the Fire Administration Building, 1500 State Highway 66. The purpose of the Hazard Mitigation Action Plan is to implement actions to help reduce loss of life and property due to the impacts of disasters. More info at <http://ow.ly/bnUX50HTkaZ>



👍 14

9 Shares

👍 Like

💬 Comment

➦ Share

Social Media Post – Advertisement of Hazard Mitigation Public Meeting



City of Garland, Texas Government

February 24 at 12:01 PM · 🌐

The Office of Emergency Management wants your input to update the Hazard Mitigation Action Plan for 2022. A public meeting is scheduled at 10:00 A.M. Saturday, February 26, in Room 417 in the Fire Administration Building, 1500 State Highway 66.

The purpose of the Hazard Mitigation Action Plan is to implement actions to help reduce loss of life and property due to the impacts of disasters.

More info at <http://ow.ly/bnUX50HTkaZ...> See more



👍 🤔 🙄 7

2 Shares

👍 Like

💬 Comment

➦ Share

Social Media Post – Advertisement of Hazard Mitigation Public Meeting

- Garland Alert System
- Prepare - Get Ready for Disaster +
- Hazard Mitigation
- Think - Know Your Community +
- Act - Get Involved
- About OEM

[Home](#) > [Government](#) > [Departments E - G](#) > [Emergency Management](#) > [Hazard Mitigation](#)

# HAZARD MITIGATION

## HAZARD MITIGATION ACTION PLAN PUBLIC MEETINGS

The Office of Emergency Management wants your input to update the Hazard Mitigation Action Plan for 2022. Your input is critical to improve the effectiveness of this plan by helping staff identify all potential hazards and ways to reduce the impacts of those hazards.



Emergency Management staff will host two opportunities to meet with you:

- 6 p.m. Thursday, Feb. 17
- 10 a.m. Saturday, Feb. 26

Both meetings will take place in Room 417 in the Fire Administration Building, 1500 State Highway 66.

The purpose of the Hazard Mitigation Action Plan is to implement actions to help reduce loss of life and property due to the impacts of disasters. Through projects, programs and policies, the City of Garland is constantly developing ways to protect the city from hazards and recover from disasters quickly. Take this opportunity to participate in focused discussions to confirm all possible hazards and all impacts have been considered, and help identify relevant projects that could further reduce the impacts of disaster.

If you have questions or concerns, contact the Office of Emergency Management at [OEM@GarlandTX.gov](mailto:OEM@GarlandTX.gov) or 972-781-7273.

## HAZARD MITIGATION PLAN

- [City of Garland 2017 Revised Hazard Mitigation Action Plan \(PDF\)](#)

## FAQs

- [What is hazard mitigation?](#)
- [Why do we need a hazard mitigation plan?](#)
- [What are some examples of mitigation actions?](#)
- [What is the planning process for hazard mitigation?](#)
- [What are some hazards identified by the City's Hazard Mitigation Action Planning Team?](#)

[View All](#)



## Contact Us

### Emergency Management

[Email the Office of Emergency Management](#)

### Mailing Address

P.O. Box 469002  
Garland, TX 75046

Phone: 972-781-7272

[Directory](#)

City of Garland’s Emergency Management Website – Advertisement of Hazard Mitigation Public Meeting

[Print](#)



## GARLAND

### NOTICE OF SPECIAL MEETING OF THE CITY COUNCIL CITY OF GARLAND, TEXAS

Room 417 of the Fire Administration Building  
1500 State Highway 66  
Garland, Texas  
February 17, 2022, at 6:00 p.m.

**NOTICE** is hereby given that a quorum of the City Council of the City of Garland, Texas may attend the following ceremonial event or function:

#### AGENDA:

1. **INTRODUCTION**
  - A. Garland OEM: Planning and Preparedness Coordinator
  - B. Introduction to HazMAP
2. **PLANNING PROCESS**
  - A. Overview
  - B. Planning and Process Team
3. **PLAN REVIEW**
  - A. Review of Hazards
  - B. Mitigation Actions Status Review
4. **INPUT**
  - A. Explanation of HazMAP Survey
  - B. Open Discussion: Public Input on HazMAP
5. **ADJOURN**

**NOTE:** No formal action or deliberations between or among members of the City Council will take place. The City Council does not control the content of any communications made during the event and any public business or public policy to be discussed is not within the supervision or control of the City Council. Any discussion of public business at the event or function is incidental to the event.

## City of Garland – Notice of Special Meeting

[Print](#)



**GARLAND**

**NOTICE OF POTENTIAL QUORUM  
OF THE CITY COUNCIL  
CITY OF GARLAND, TEXAS**

1500 State Highway 66  
Garland, Texas  
February 26, at 10:00 a.m.

**NOTICE** is hereby given that a quorum of the City Council of the City of Garland, Texas may attend the following ceremonial event or function:

**Public Meeting for Hazard Mitigation Action Plan for 2022**  
**Fire Administration Building - Room 417**  
1500 State Highway 66  
Garland, TX 75040

**NOTE:** No formal action or deliberations between or among members of the City Council will take place. The City Council does not control the content of any communications made during the event and any public business or public policy to be discussed is not within the supervision or control of the City Council. Any discussion of public business at the event or function is incidental to the event.

City of Garland – Notice of Potential Quorum

[Print](#)



## GARLAND

### NOTICE OF SPECIAL MEETING OF THE EMERGENCY MANAGEMENT DEPARTMENT OF THE CITY OF GARLAND, TEXAS

Room 417 of the Fire Administration Building  
1500 State Highway 66  
Garland, Texas  
February 26, 2022, at 10:00 a.m.

**NOTICE** is hereby given that a quorum of the City Council of the City of Garland, Texas may attend the following ceremonial event or function:

#### **AGENDA:**

1. **ITEMS FOR INDIVIDUAL CONSIDERATION**
  - A. Garland OEM: Planning and Preparedness Coordinator
  - B. Introduction to HazMAP
2. **PLANNING PROCESS**
  - A. Overview
  - B. Planning and Process Team
3. **PLAN REVIEW**
  - A. Review of Hazards
  - B. Mitigation Actions Status Review
4. **INPUT**
  - A. Explanation of HazMAP Survey
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City of Garland – Notice of Special Meeting

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City of Garland – Notice of Potential Quorum

# Hazard Mitigation Action Plan Public Meeting

February 17, 2022  
6:00 PM

## **Introduction**

- Garland OEM: Planning and Preparedness Coordinator
- Introduction to HazMAP

## **Planning Process**

- Overview
- Planning and Process Team

## **Plan Review**

- Review of Hazards
- Mitigation Actions Status Review

## **Input**

- Explanation of HazMAP Survey
- Open Discussion: Public Input on HazMAP

## **Next Public Meeting**

February 26, 2022 – 10:00 AM

# Hazard Mitigation Action Plan Public Meeting

February 26, 2022  
10:00 AM

## **Introduction**

- Garland OEM: Planning and Preparedness Coordinator
- Introduction to HazMAP

## **Planning Process**

- Overview
- Planning and Process Team

## **Plan Review**

- Review of Hazards
- Mitigation Actions Status Review

## **Input**

- Explanation of HazMAP Survey
- Open Discussion: Public Input on HazMAP

## **NOTICE**

The Hazard Mitigation Action Plan is available for review in the City Secretary's  
Office, 200 N Fifth Street, Fourth Floor, Garland, TX, 75040.

Please send any questions or comments to [OEM@garlandtx.gov](mailto:OEM@garlandtx.gov)

  
**GARLAND**

## Hazard Mitigation Action Plan Public Meeting

City of Garland  
Office of Emergency Management



1

## Introduction

- Welcome
- Garland OEM
  - Brad Kavanaugh
  - Planning and Preparedness Coordinator

  
**GARLAND**  
EMERGENCY MANAGEMENT



2

## Hazard Assessment

**Community Impact Assessment**  
*Please complete the following assessment by ranking each hazard 1 through 5*

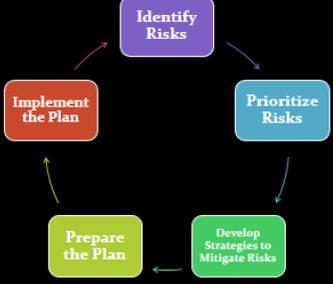
Hazard	Most Likely / Spatial Occurrence											Frequency (Y)	Severity (X)	Overall P-CID	Priority		
	Geographic Scope	Duration	Seasonality	Frequency	Intensity	Duration	Frequency	Intensity	Duration	Frequency	Intensity						
Thoughts																	
Earthquake																	
Explosion																	
Explosive Fuel																	
Extreme Heat																	
Flood																	
Hail																	
Severe Thunderstorms																	
Severe Winter Weather																	
Tornado																	
Biological Event																	
Communications Failure / Infrastructure Failure																	
Power Outage																	
Terrorism/Cyber Attacks																	



3

## Hazard Assessment

- Review definitions
- Rank each hazard 1 to 5
- Based on your experience
- Gather results





4

## Hazard Mitigation Action Plan

- Purpose: The effort to reduce loss of life and property by lessening the impact of disasters
- Meeting Scope
  - Planning Process
  - Hazard Assessment
  - Mitigation Action Review



5

# Planning Process



6

## The Planning Process

1. Organizing the Planning Process and Resources
2. Assess Risks and Capabilities
3. Develop a Mitigation Strategy
4. Adopt and Implement the Plan



## Planning Team

<b>Whole Community</b> • Citizens of Garland	<b>Emergency Management</b> • Director • Planning and Preparedness Coordinator	<b>Building Inspection</b> • Building Official	<b>Engineering</b> • Director	<b>Health</b> • Environmental Health Manager	<b>Facilities</b> • Physical Security Program Manager
<b>Fire</b> • Assistant Fire Chief	<b>Neighborhood Vitality</b> • Administrator	<b>Parks and Recreation</b> • Director	<b>Police</b> • Captain	<b>GP&amp;L</b> • Chief Operation Officer	<b>Water</b> • Wastewater Treatment Director

## Planning Team Responsibilities

Identify Hazards

Public Outreach Strategy

Risk Assessments

Mitigation Actions Review/Implementation

Rank Hazards

Research

## Hazard Assessment

## Hazard Profiles

- Hazard Description
- Location
- Severity
- Previous Occurrences
- Probability of Future Events
- Impact on Community
- Summary of Vulnerability
- Other Information
  - Charts, Graphs, Maps, Historical Data, etc.



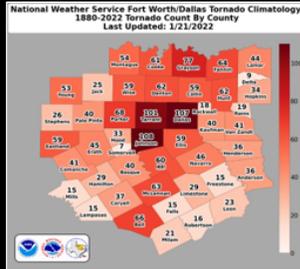
## Top 5 Hazards

1. Tornado
2. Severe Thunderstorms/Damaging Winds
3. Destructive Hail
4. Severe Winter Weather/Extreme Cold
5. Extreme Heat



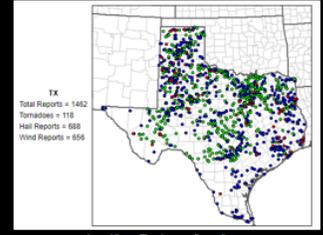
## Hazard - Tornado

- Hazard Description
- Severity
- Previous Occurrences/Probability of Future Events
  - December 26, 2015 – EF4
  - October 20, 2019 – EF2
    - 174 homes impacted
    - 1656 tons of debris
  - 107 Total in Dallas County
  - Impact on Community



## Hazard – Severe Thunderstorms/Damaging Winds

- Hazard Description
- Severity
- Previous Occurrences/Probability of Future Events
  - 1462 total reports in Texas
- Impact on Community



## Hazard – Destructive Hail

- Hazard Description
- Severity
- Previous Occurrences/Probability of Future Events
  - 34 events: 0.75" or greater (1994)
  - April 11, 2016 – Wylie, TX
- Impact on Community



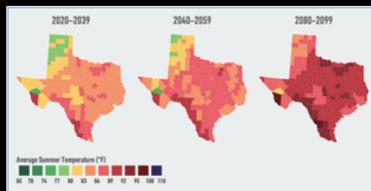
## Hazard – Severe Winter Weather/Extreme Cold

- Hazard Description
- Severity
- Previous Occurrences/Probability of Future Events
  - 66 events in past 25 years
- Impact on Community



## Hazard – Extreme Heat

- Hazard Description
- Severity
- Previous Occurrences/Probability of Future Events
  - 48 in past 25 years
  - Numerous injuries
  - 112+ (1980)
- Impact on Community



## Public Input

- What hazards do you feel you're most vulnerable to?
  - Why?
- What would you do to reduce risk and threat of hazards?
- What would you like to see added/deleted from plan?

# Mitigation Action Review

## Hazard Mitigation Actions

- Specific projects the City wants to do to lessen the impacts of disaster
- Must follow strict Mitigation criteria and specifically address identified vulnerabilities

### Required Elements :

- Link to plan Goals & Objectives
- Assignment of responsibility
- Timeline
- List of potential funding sources
- Detailed description of impacts on new & existing structures
- Cost estimate
- Cost Benefit and Risk Reduction Analysis

## Key Mitigation Actions

- Educating citizens on Mitigation techniques
- Elevation of structures in flood prone areas
- Erosion and drainage control to reduce flooding
- Update building codes for improved structural stability
- Enhancing SWAT and EOD equipment
- Retrofit backup Police and Fire Communications Center to avoid future hail damage
  - Acquire Generators
  - Two City of Garland Fueling Centers (1 of 2 completed)
  - Recreation Centers (Shelters)
  - Critical Facilities
- Apply calcium soil stabilizer to areas around critical infrastructure



# Questions?

## Final Thoughts

- Hazard Mitigation Survey
- Garland Alert System
- Public Education Materials

# THANK YOU!

**Brad Kavanaugh**

City of Garland - Office of Emergency Management

Email: [OEM@garlandtx.gov](mailto:OEM@garlandtx.gov)

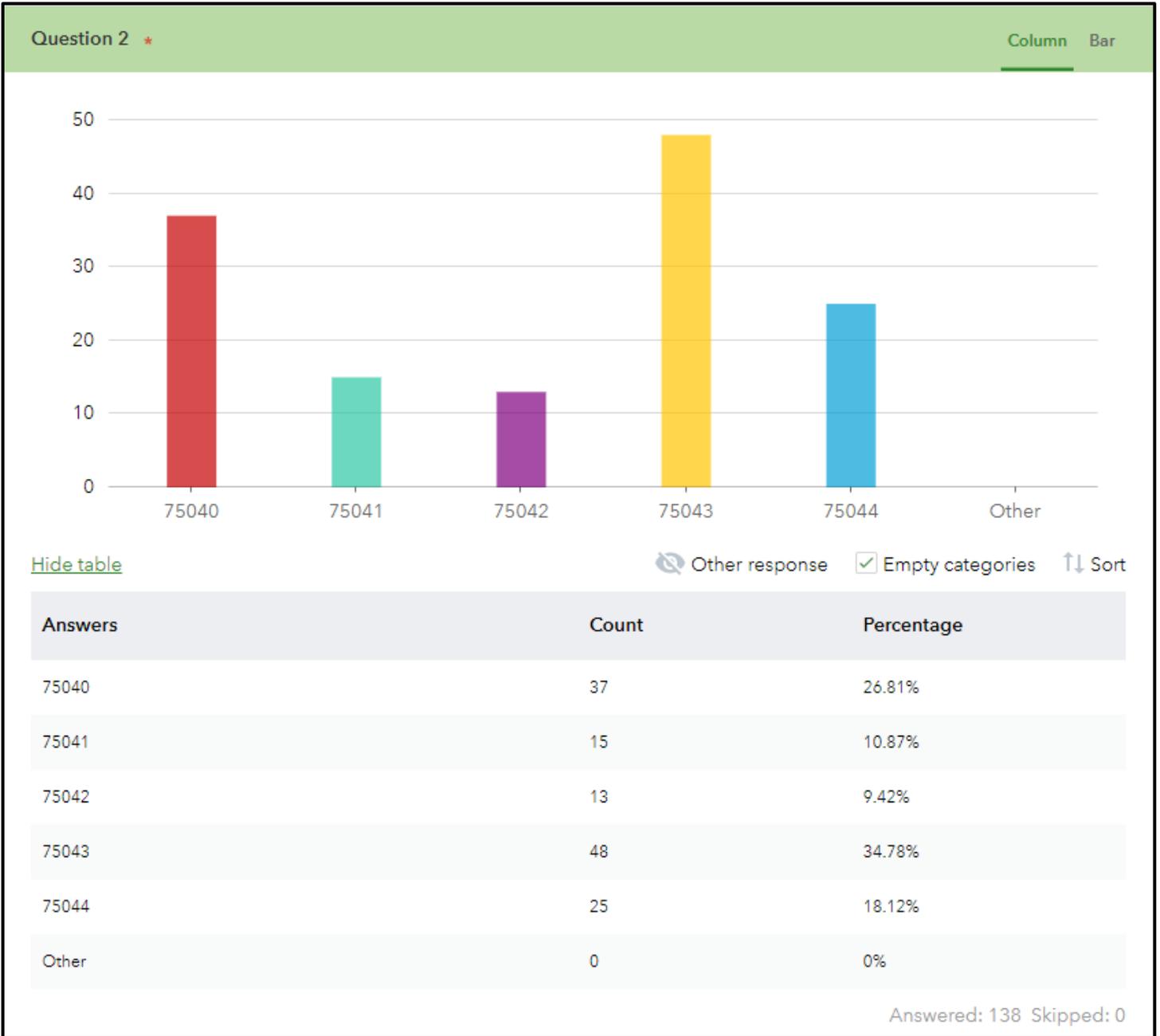
Phone: 972-781-7273

## D. Public Survey and Results

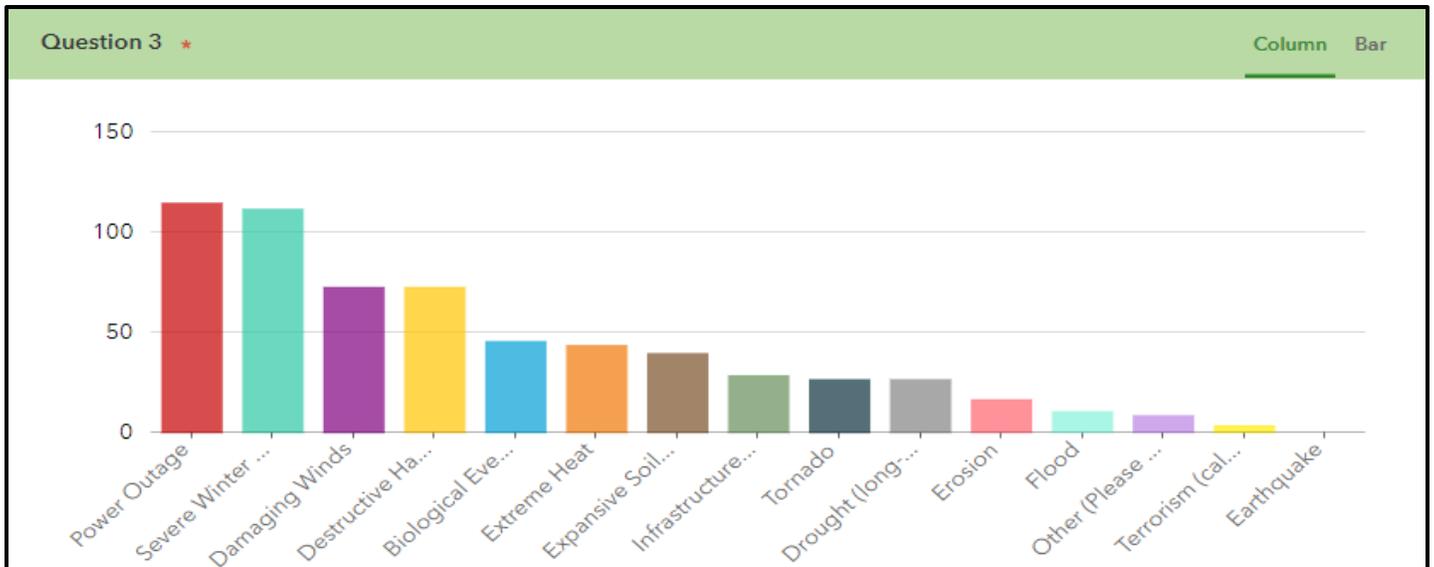
**Q1:** Are you registered to receive notifications from the Garland Alert System? (If you answered No, please register by following the QR Code on the last page)



Q2: In which zip code do you live?

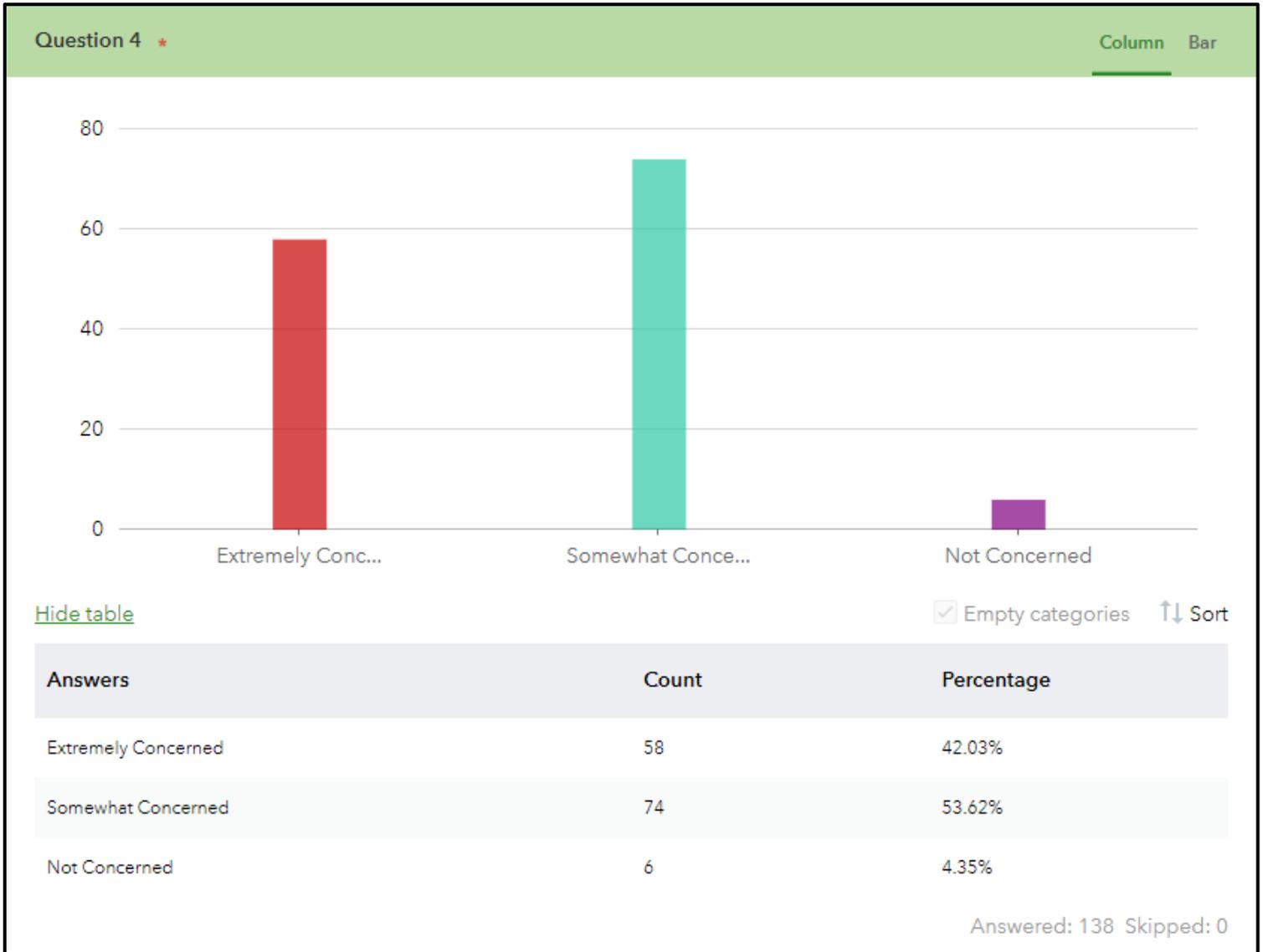


**Q3:** While in the Garland area, have you ever been impacted by any of the hazards listed below? (Check all that apply)

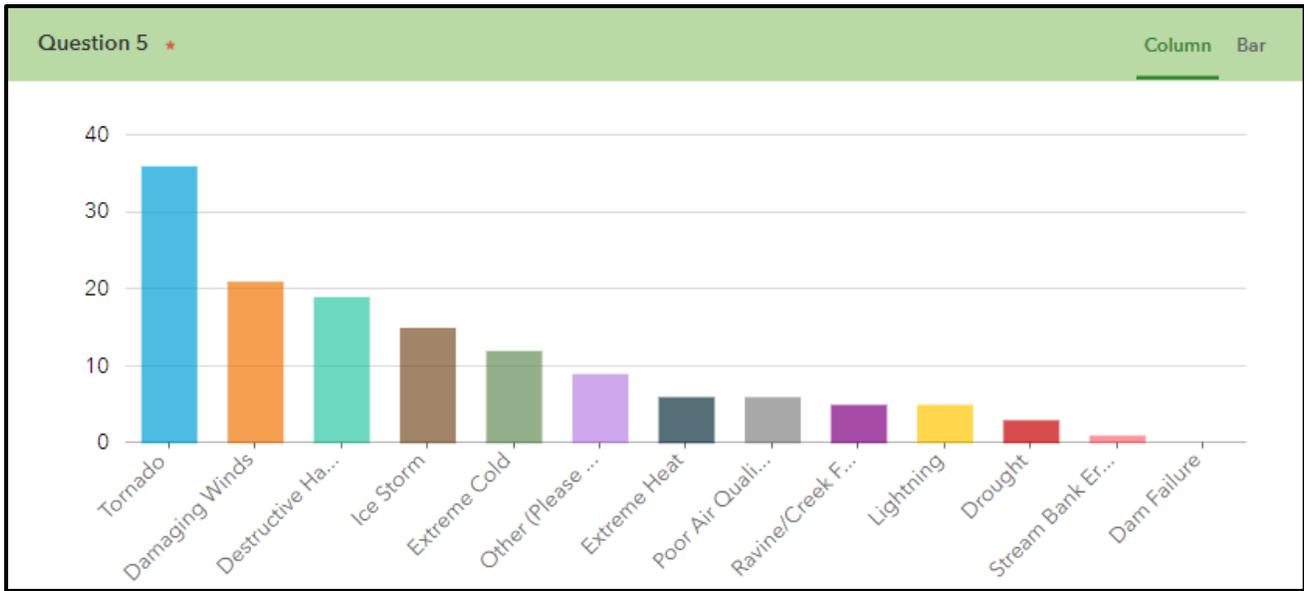


Power Outage	115	83.33%
Severe Winter Weather	112	81.16%
Damaging Winds	73	52.9%
Destructive Hail	73	52.9%
Biological Event (disease/illness outbreak i.e. COVID-19, H1N1, West Nile, Smallpox)	46	33.33%
Extreme Heat	44	31.88%
Expansive Soils	40	28.99%
Infrastructure and Communications Failure	29	21.01%
Tornado	27	19.57%
Drought (long-term)	27	19.57%
Erosion	17	12.32%
Flood	11	7.97%
Other (Please Explain)	9	6.52%
Terrorism (calculated violence to generate fear in the population)	4	2.9%
Earthquake	0	0%

**Q4:** How concerned are you about the possibility of your community being impacted by these hazards?

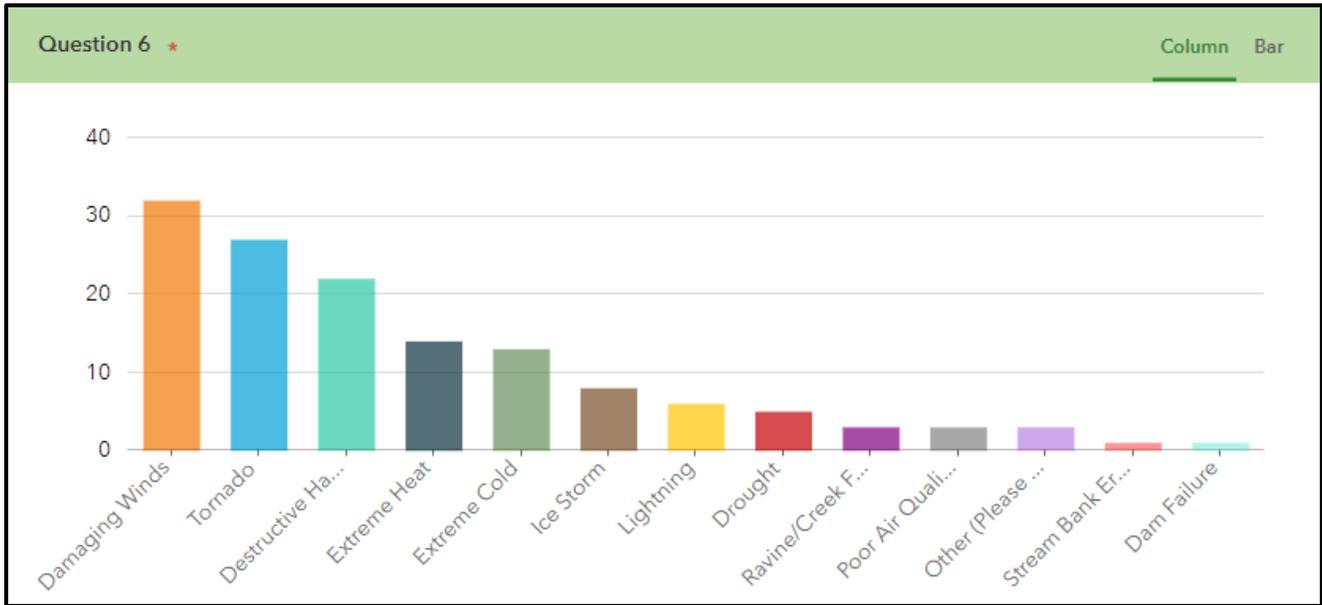


**Q5:** Please select the natural hazard that you think is the highest threat to your neighborhood (Select one):



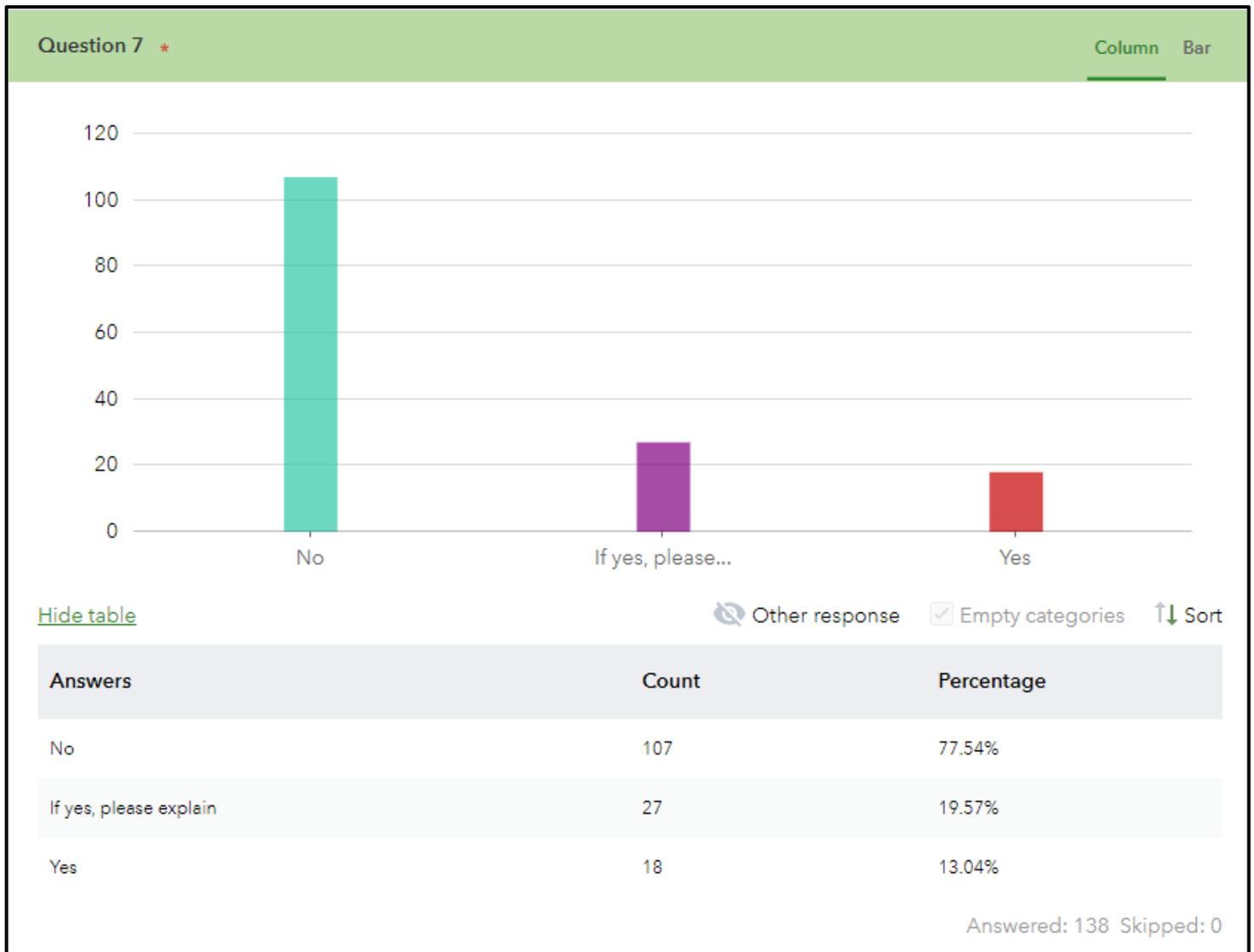
Tornado	36	26.09%
Damaging Winds	21	15.22%
Destructive Hail	19	13.77%
Ice Storm	15	10.87%
Extreme Cold	12	8.7%
Other (Please Explain)	9	6.52%
Extreme Heat	6	4.35%
Poor Air Quality	6	4.35%
Ravine/Creek Flooding	5	3.62%
Lightning	5	3.62%
Drought	3	2.17%
Stream Bank Erosion	1	0.72%
Dam Failure	0	0%

**Q6:** Please select the natural hazard that you think is the second highest threat to your neighborhood  
(Select one):

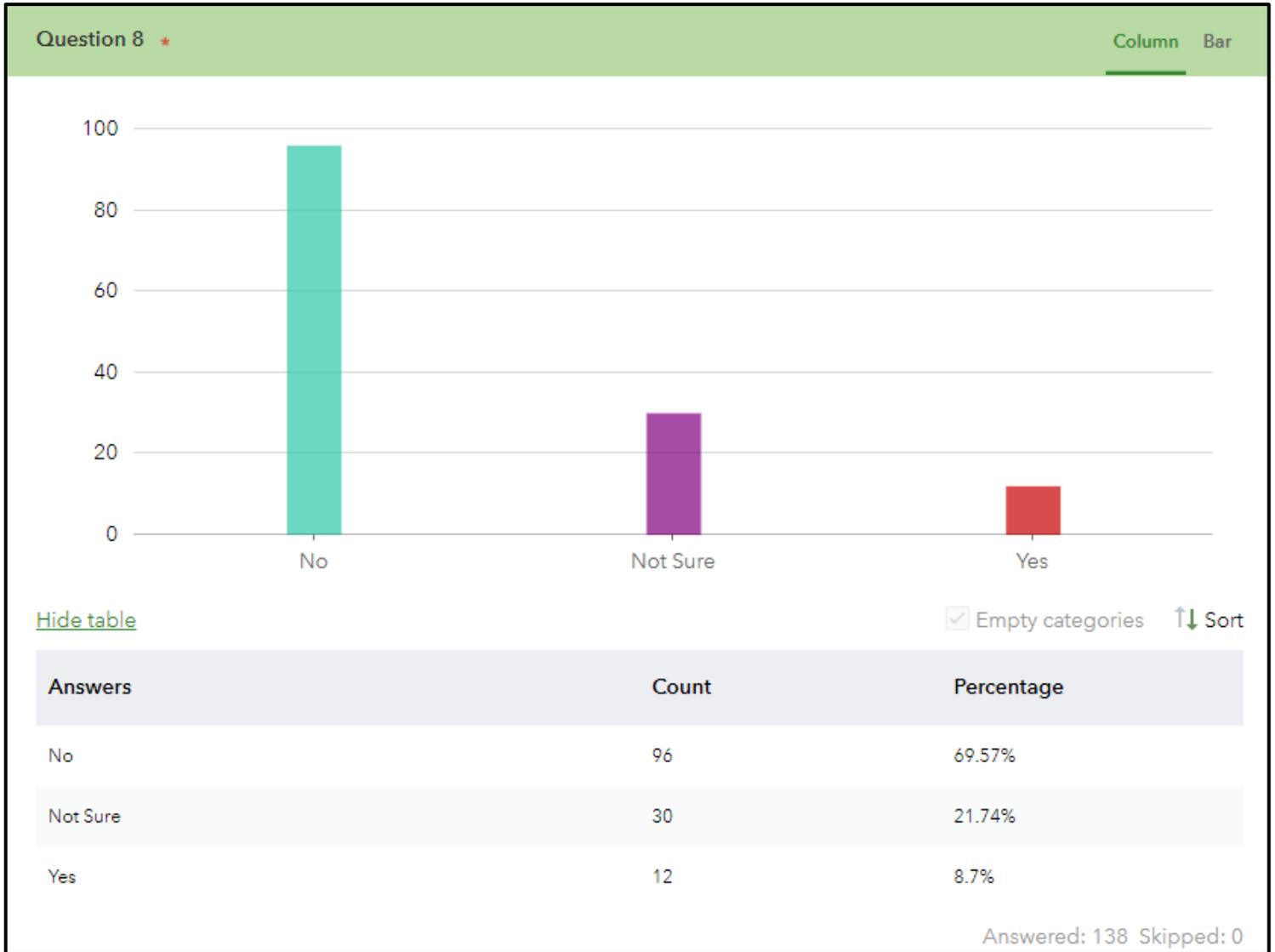


Damaging Winds	32	23.19%
Tornado	27	19.57%
Destructive Hail	22	15.94%
Extreme Heat	14	10.14%
Extreme Cold	13	9.42%
Ice Storm	8	5.8%
Lightning	6	4.35%
Drought	5	3.62%
Ravine/Creek Flooding	3	2.17%
Poor Air Quality	3	2.17%
Other (Please Explain)	3	2.17%
Stream Bank Erosion	1	0.72%
Dam Failure	1	0.72%

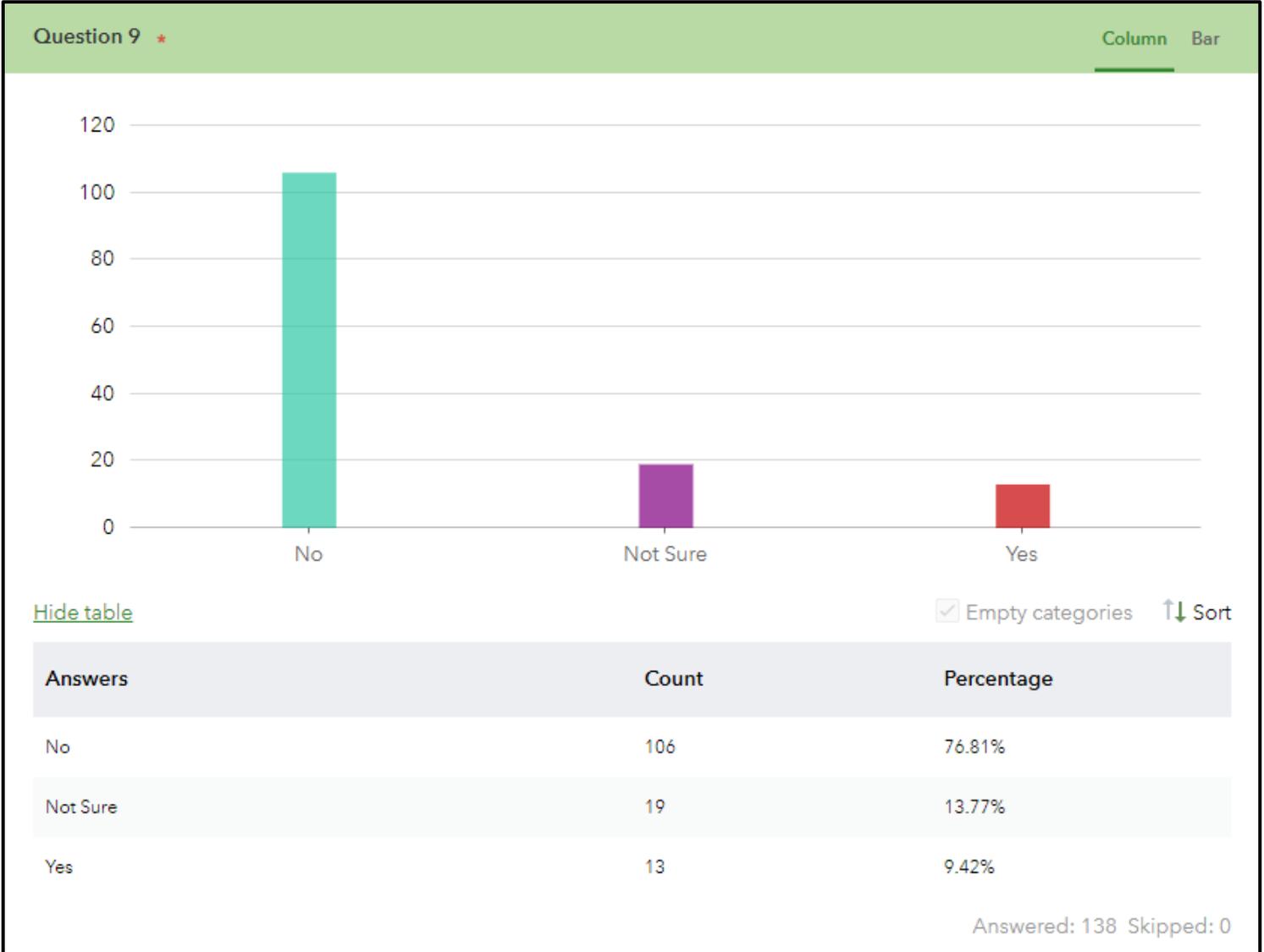
**Q7:** Is there another hazard not listed in this survey that you think is a wide-scale threat to your community?



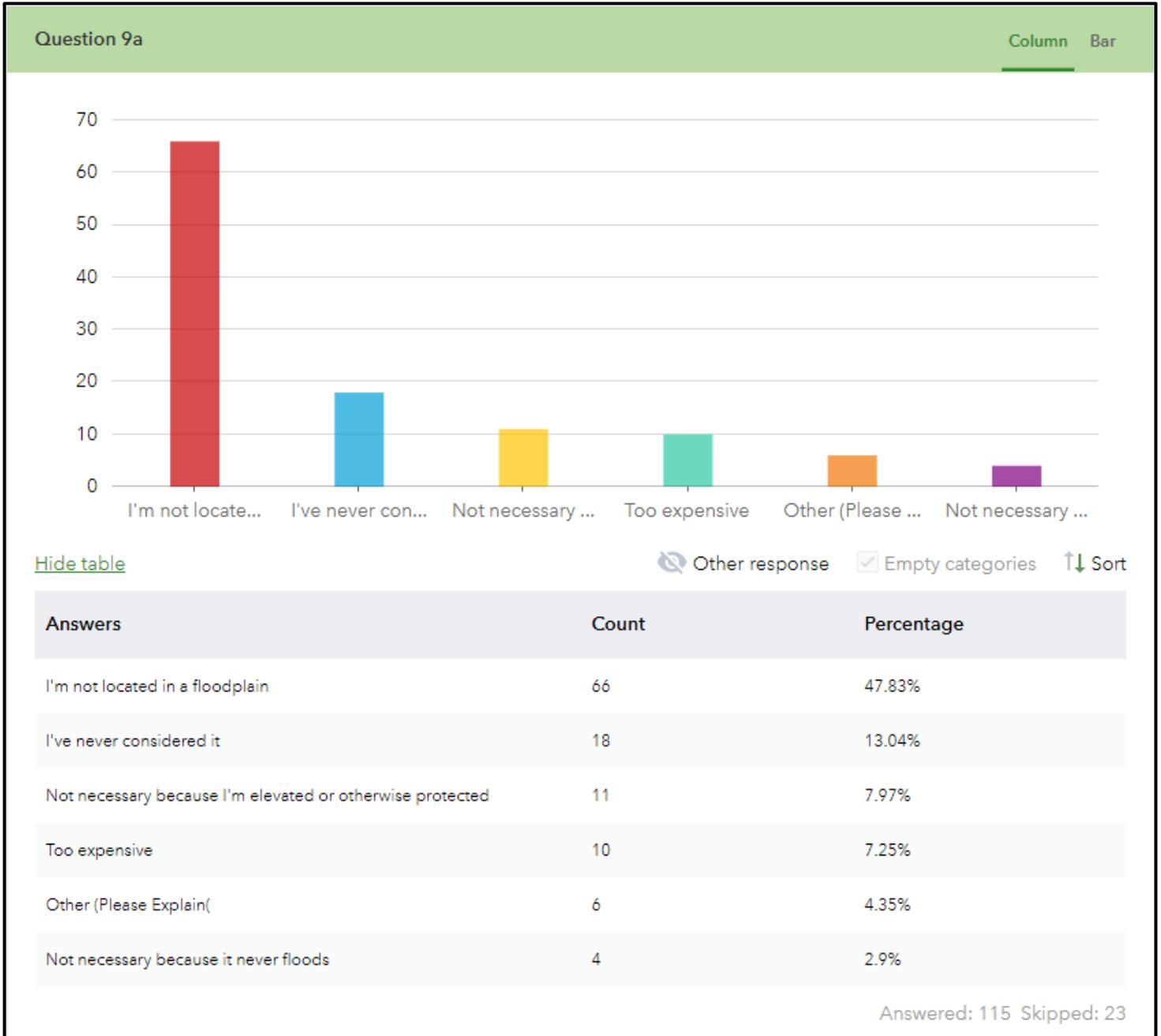
**Q8:** Is your home or neighborhood located in a designated floodplain of a creek or ravine?



Q9: Do you have flood insurance?



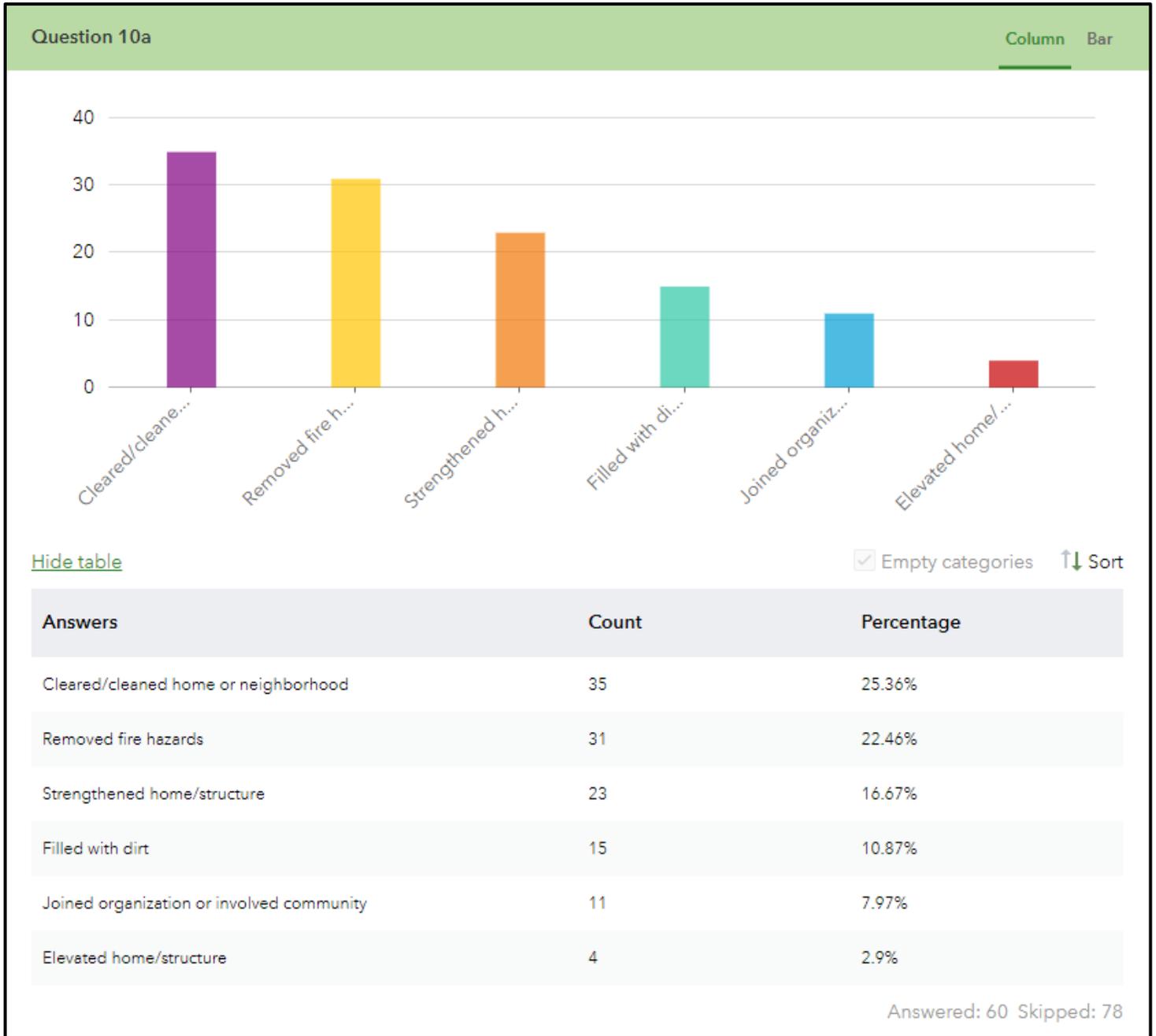
**Q9a: If you answered “No” to Question 9, why do you not have flood insurance?**



**Q10:** Have you taken any actions to make your home or neighborhood more resistant to hazards?



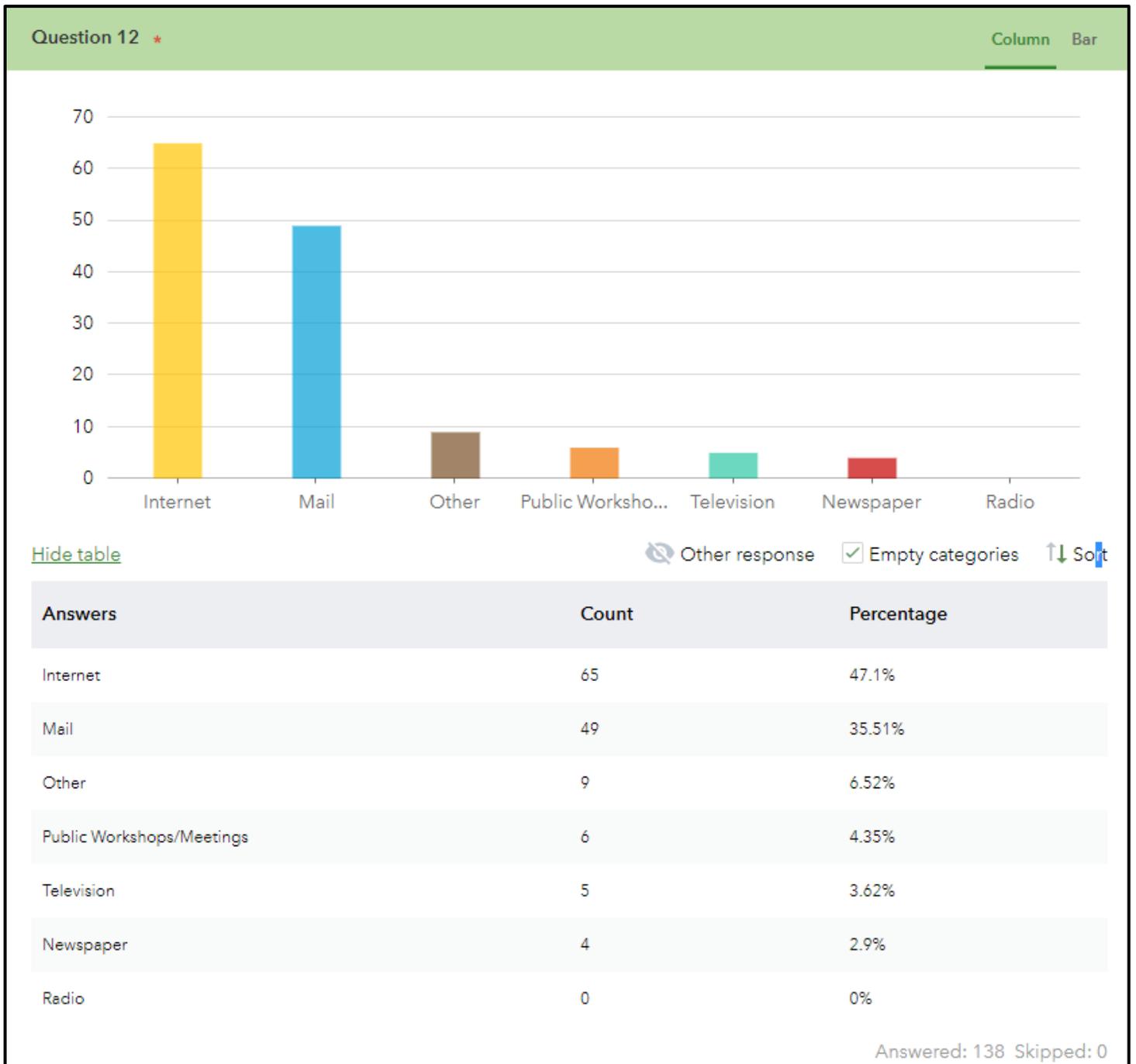
**Q10a:** If you answered “Yes” to Question 10, please indicate whether you have taken any of these actions (check all that apply):



**Q11:** Are you interested in making your home or neighborhood more resistant to hazards?



**Q12:** What is the most effective way for you to receive information about how to make your home and neighborhood more resistant to hazards?



**Q13: In your opinion, what are some steps your local government could take to reduce or eliminate the risk of future hazard damages in your neighborhood? (Common Responses Listed)**

Continue to dredge out, clean and apply engineering strategies to Duck Creek. Monitor the creek for trash, limbs and other items that obstruct the flow of water, especially at the Greenbelt/Audubon Park areas and along S. Glenbrook.
Better plan for rolling blackouts
Better communication such as TV and or internet E-Mail City website. Improve Telephone notification.
Be sure our power grid is sufficient during extreme cold and hot times of the year.
Available mobile generators to rent to citizens in emergencies. Updating infrastructure for power supply.
As my concerns are more weather directed, I do not see ways of improvements. We don't flood here, with the exception of the roads in extremely rainy times, but those are short lived once it stops raining, which drain as soon as rain stops.
As a GP&L customer, I wish that our community had adequate generating capacity (and fuel reserves) so that we could be internally self-sufficient, for at least a few days, from the outside electrical grid.
Alert community Educate community
Accidents happen frequently on Northwest Hwy. between Birchwood and LaPrada. There are 2 curves. Signs are up for the 2nd curve, but not the 1st. It starts at the United Methodist Church and goes to the intersection of Northwest and Sleepy Hollow
A neighborhood watch for hazard conditions. Local list of people who are at-risk elderly, housebound, handicapped, etc.
1. Provide information that individuals can use for their own homes. 2. Promote group activities to assist residents who are unable to implement suggestions to their homes. 3. Provide information related to current flood plain maps.
1. More investigation and communication on impact of changing zoning with my Shoal Creek community. Feel we are overbuilding. 2. Insurance costs are skyrocketing in Texas and that is impacting us all.
1) Get out of the state energy grid network. They do not regulate properly and it costs Garland. 2) Great job enhancing early warning sirens; however, some people I know cannot hear them--maybe a few more?

**Q14:** Are there any other issues regarding the reduction of risk and loss associated with natural hazards or disasters in the community that you think are important? (Common Responses Listed)

Power grid. Electric and water service during extreme weather. Emergency phone service during power outages.

I am very concerned about the failure of the power grid last winter. I did not list ice storms above as highest threat only because they do not occur as often as high winds/tornados, but even usual winter storms are dangerous without heat.

Education regarding the proper way to mulch and trim trees Damage and loss of trees affect air and water quality, damage to homes, etc.

Better communication about tornado warnings. Sometimes I hear the sirens and sometimes not.

Acknowledge the worsening effects of climate change and change relevant policies to help mitigate its effects as much as possible.

Organize neighborhood groups to prepare for emergencies. Assume normal governmental resources are not available or are preoccupied.

Provide ways to organize people who wish to help in the wake of disasters.

More storm shelters for residents to go to in the event of a Tornado

More awareness advertisement for garland emergency alerts system

Make sure power grid is able to handle heavier than average loads whether that is winter or summer. Winterize power plants.

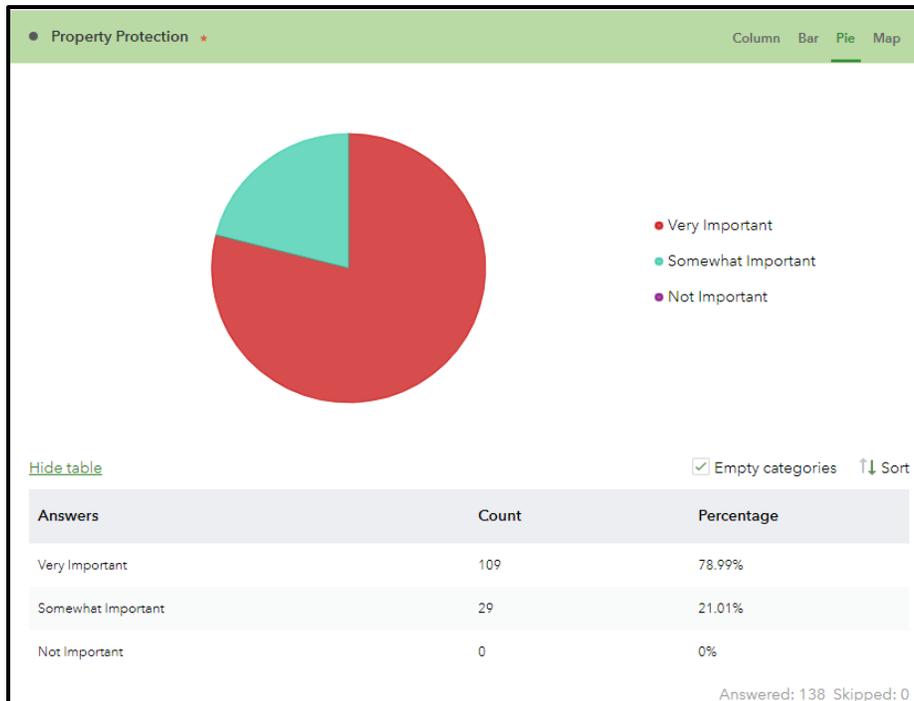
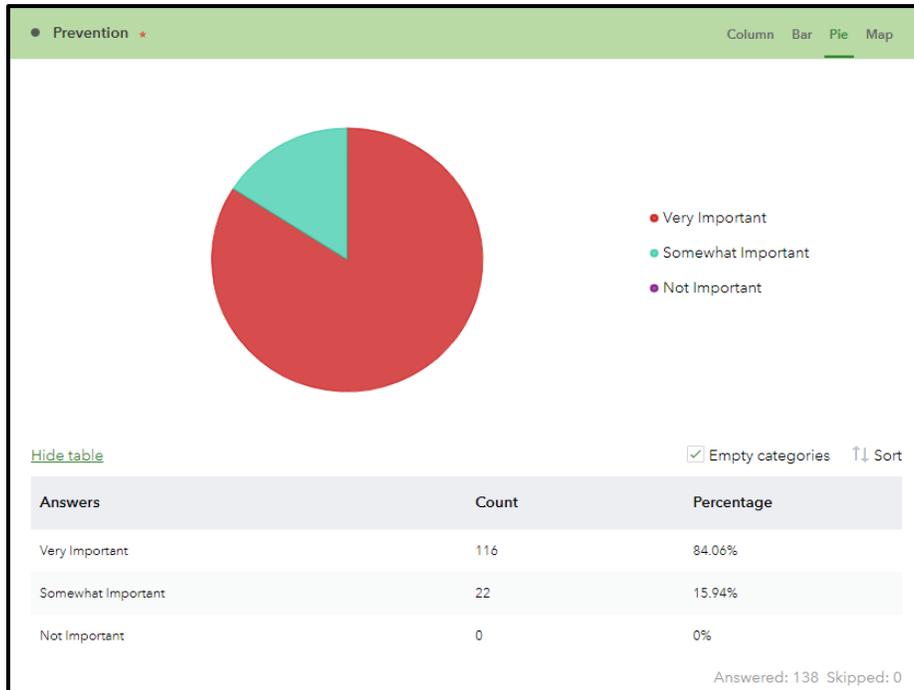
Keep improving Everbridge notifications especially early warning for destructive events like the recent tornadoes.

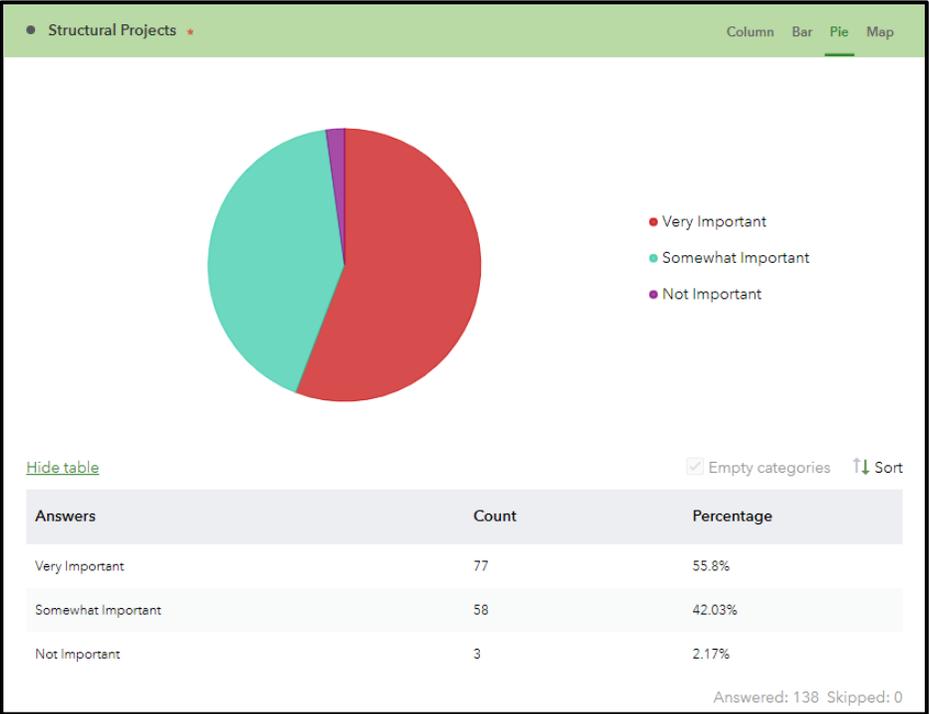
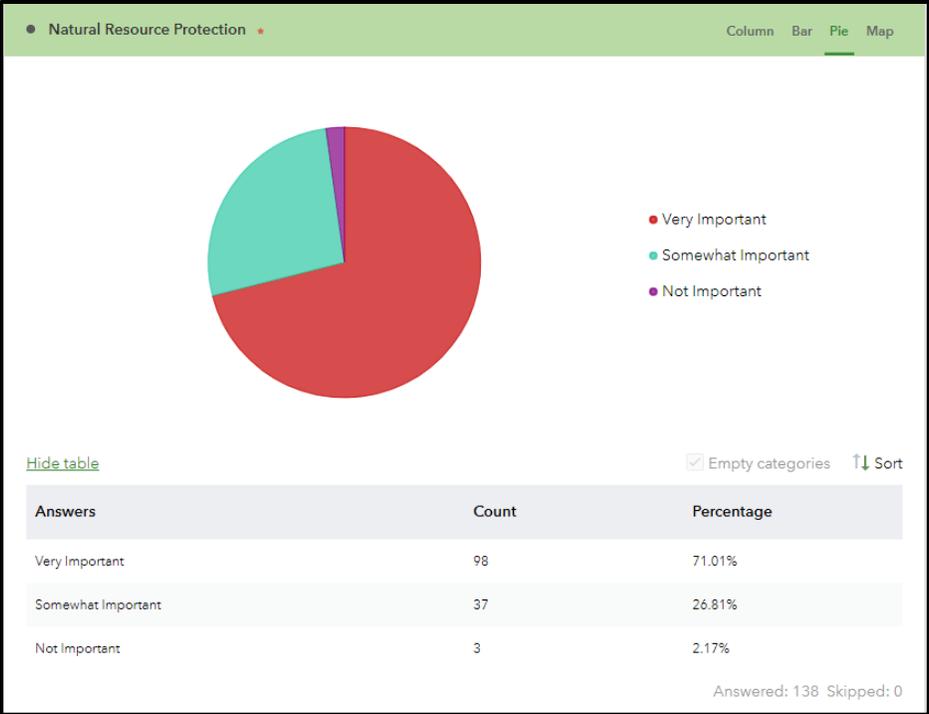
If there is extreme weather, hot or cold, were power is lost, there needs to be more locations were families could go for relief. Also, to be able to take our dogs with us.

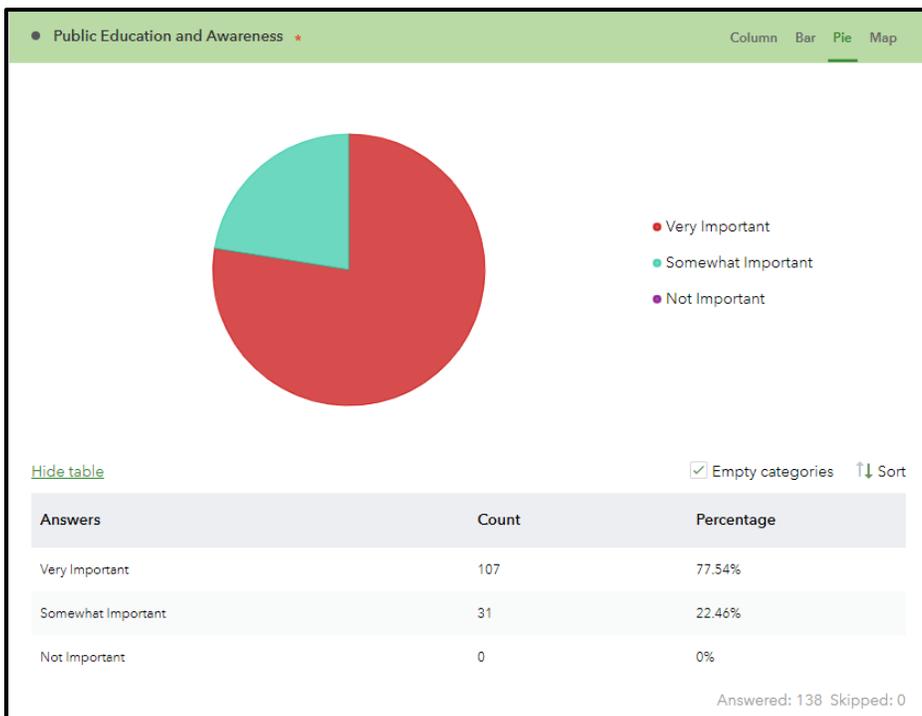
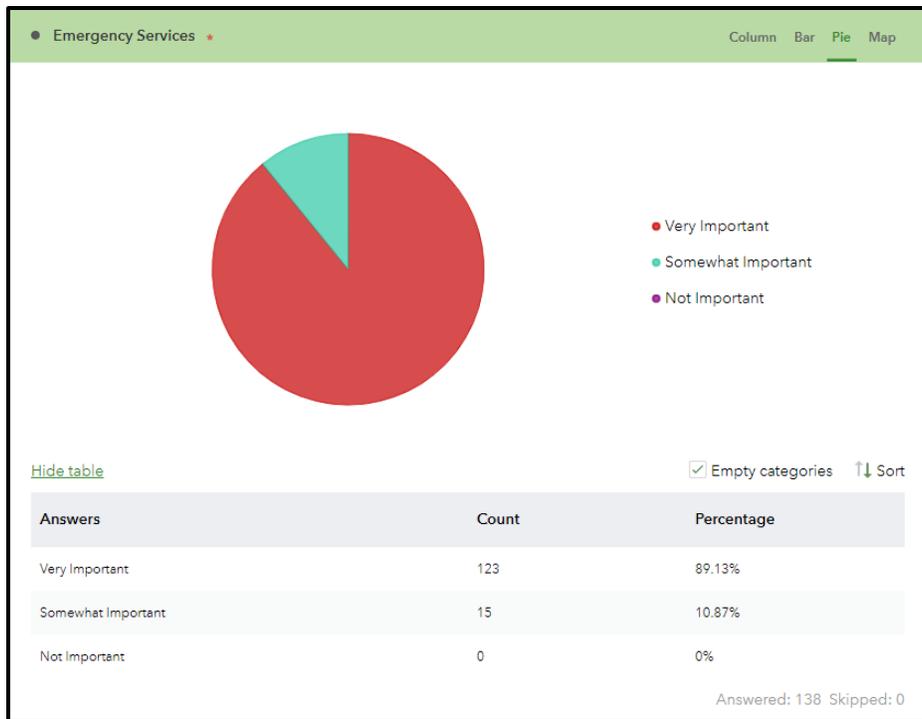
If/when we have another natural disaster, remote aid and information stations in neighborhoods would be helpful.

I think with natural disasters that caused any home damages to say the roof or fence, if the city can assist in some way because sometimes insurance won't cover it all or it's too expensive after the deductible.

**Q15:** A number of community-wide activities can reduce our risk from hazards. In general, these activities fall into one of the following six broad categories. Please tell us how important each one is for your community to consider pursuing.







## E. Summary of Outreach

### Public Outreach

In summary, public education was addressed through various outreach methods to include:

**Social Media:** In total, six social media posts were posted across five platforms operated by the City of Garland (Facebook, Twitter, Instagram, LinkedIn, Nextdoor). Each post remains on each social media platform and has not been taken down since its original posting date. These social media posts will remain on each platform indefinitely.

**City Website Updates:** In total, four updates were made to City website pages informing citizens about updates to the plan or posting agendas for the two public meetings. The initial website update, occurring on September 1, 2021, allowed citizens to visit the City website to take a Hazard Mitigation Survey, view the plan, get information about public meetings, get information about the plan and make comments about the plan by submitting a comment for to the Office of Emergency Management. Citizens were able to take the Hazard Mitigation Survey and make comments to the plan until July 14, 2022, a total of 316 days.

**Public Meetings:** In total, two public meetings were held. Three social media posts, a City website update, and two agendas posted to the City website were made to inform citizens about the public meeting opportunities. Each of the social media posts and each agenda remains on each respective platform and has not been taken down since its original posting date. The City website information was posted until the public meetings concluded, a total of 17 days.

**Utility Bill Inserts:** In total, utility bill inserts (pictured on page 111) were sent out to Garland households throughout the month of September (2021).

**Miscellaneous Public Opportunities:** In total, two additional methods of outreach were provided to the public through City of Garland recreation centers, senior centers, public libraries and City Secretary's Office. Copies of the Hazard Mitigation Survey were made available in City of Garland recreation centers, senior centers and public libraries for a total of 14 days. A physical copy of the 2017 Hazard Mitigation Action Plan with comment forms was made available in the City Secretary's Office for a total of 14 days.

Please review the table on page 145 for a more in-depth, detailed description of each public outreach method.

**Table 9.1 – Breakdown of Outreach Methods**

<b>Date</b>	<b>Outreach Type</b>	<b>Topic</b>	<b>Outreach Location</b>
09/2021	Utility Bill Insert	Hazard Mitigation Plan update information and survey information with QR Code	Sent to each Garland household (approx. 69,000)
09/01/2021	Website	Garland OEM’s website updated to provide information on Mitigation Plan update. Survey becomes available to public.	Garland OEM Website
09/15/2021	Social Media	Post informing citizens about availability of Hazard Mitigation survey	Facebook, Instagram, Twitter, LinkedIn, Nextdoor
10/20/2021	Social Media	Second post reminding citizens regarding availability of Hazard Mitigation survey	Facebook, Instagram, Twitter, LinkedIn, Nextdoor
02/11/2022	Website	Public Meeting Information updated on OEM’s Hazard Mitigation website	Garland OEM Website
02/12/2022	Social Media	First social media post informing citizens of a Public Meeting for HazMAP on 2/17/22	Facebook, Instagram, Twitter, LinkedIn, Nextdoor
02/14/2022	Social Media	Social media post informing citizens of a Public Meeting for HazMAP on 2/26/22	Facebook, Instagram, Twitter, LinkedIn, Nextdoor
02/14/2022	Website	Meeting Agenda posted through City Secretary	City Website
02/17/2022	Public Meeting	Open discussions, OEM presentation, Community Impact Assessments	Fire Admin, Room 417
02/23/2022	Website	Meeting Agenda posted through City Secretary	City Website
02/24/2022	Social Media	Social media post reminding citizens of a Public Meeting for HazMAP on 2/26/22	Facebook, Instagram, Twitter, LinkedIn, Nextdoor
02/25/2022	Public Opportunity	Paper copies (in 3 languages) of survey placed in all city libraries, recreation centers, and senior centers to provide a manual process for completing. Collected 2 weeks later.	City libraries, recreation centers, and senior centers
02/26/2022	Public Meeting	Open discussions, OEM presentation, Community Impact Assessments	Fire Admin, Room 417
03/01/2022	Public Opportunity	Copy of the 2017 plan placed in the City Secretary’s office for public review and comment. Forms for written feedback were provided. Plan collected March 15, 2022.	City Secretary’s Office
03/02/2022	Social Media	Post created to inform citizens of the HazMAP’s availability in the City Secretary’s office	Facebook, Instagram, Twitter, LinkedIn, Nextdoor

## F. Neighboring Communities, Local and Regional Agency Participation

All,

The City of Garland's Office of Emergency Management and its Planning Team have been working on the Hazard Mitigation Action Plan (HazMAP) as a part of the five-year update. Throughout the process of updating the HazMAP, the Planning Team considered plans from Dallas County, the Council of Governments and other local municipal plans. At this time, we would like to provide you with the opportunity to review the City of Garland's HazMAP and provide feedback to enhance the plan. We appreciate your time and ask that all feedback be provided by April 8, 2022.

Thank you in advance and please let me know if you have any questions.

Brad Kavanaugh  
Planning and Preparedness Coordinator  
City of Garland - Office of Emergency Management  
Phone: 972-781-7273  
[bkavanaugh@garlandtx.gov](mailto:bkavanaugh@garlandtx.gov)

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### **Our Mission**

*We are committed to preserve public trust, deliver quality services, promote economic growth, protect our community and enhance the quality of life for the good of our city and our future.*



**GARLAND**

## G. Planning Team Impact Assessment

EVENT	LOCATION	PROBABILITY	SEVERITY = (MAGNITUDE - MITIGATION)					RISK
			HUMAN IMPACT	BUSINESS IMPACT	PREPAREDNESS	INTERNAL RESPONSE (The City of Garland)	EXTERNAL RESPONSE (Community Partners, Mutual Aid Staff/Supplies)	
			Possibility of death or injury	Interruption of services	Preplanning for event	Response time, effectiveness, resources available	Response time, effectiveness, resources available	
<b>SCORE</b>	0 = Negligible: Less than 10% 1 = Limited: 10 to 25% 2 = Significant: 25 to 75% 3 = Extensive 75 to 100%  * 10% of Garland = 5.71 sq mi	0 = Unlikely: Less than 1% 1 = Occasional: 1-10% 2 = Likely 10-90% 3 = Highly Likely 90%	0 = Unlikely: Less than 1% 1 = Occasional: 1-10% 2 = Likely 10-90% 3 = Highly Likely 90%  * 1% of Garlands population = 2355 * 1% of businesses in Garland = 118			0 = N/A 1 = High 2 = Moderate 3 = Low or none	0 - 100%	
Active Shooter							0%	
Aircraft Incident							0%	
Biological Event							0%	
Bomb Threat							0%	
Civil Disturbance							0%	
Communications Failure							0%	
Dam Failure							0%	
Drought							0%	
Earthquake							0%	
Erosion							0%	
Expansive Soil							0%	
Extreme Cold							0%	
Extreme Heat							0%	
Flood							0%	
Fuel Shortage							0%	
	Geographic Area Affected	Probability of Future Events in the next year	Possibility of death or injury	Interruption of services	Preplanning for event	Response time, effectiveness, resources available	Response time, effectiveness, resources available	
	0 = Negligible: Less than 10% 1 = Limited: 10 to 25% 2 = Significant: 25 to 75% 3 = Extensive 75 to 100%  * 10% of Garland = 5.71 sq mi	0 = Unlikely: Less than 1% 1 = Occasional: 1-10% 2 = Likely 10-90% 3 = Highly Likely 90%	0 = Unlikely: Less than 1% 1 = Occasional: 1-10% 2 = Likely 10-90% 3 = Highly Likely 90%  * 1% of Garlands population = 2355 * 1% of businesses in Garland = 118			0 = N/A 1 = High 2 = Moderate 3 = Low or none		
Hail							0%	
Hazardous Materials (Fixed and Transport)							0%	
Information Systems Failure							0%	
Lightning							0%	
Plant Explosion							0%	
Power Outages							0%	
Railroad Incidents							0%	
Severe Winter Weather							0%	
Sewer Failure							0%	
Subsidence							0%	
Terrorism							0%	
Tornado							0%	
VIP Situation							0%	
Water Failure							0%	
Wildfire							0%	
Wind							0%	
<b>AVERAGE SCORE</b>	0	0.00	0.00	0.00	0.00	0.00	0.00	

## Definitions

Parameter	Definition	One (1)	Two (2)	Three (3)	Four (4)	Five (5)
<b>Frequency</b>	How often has the hazard occurred in the past?	Never occurred locally	Once in past thousand years	Once in past hundred years	Once in past 50 years	Nearly every decade
<b>Geographic Scope</b>	Size of the affected area. Includes areas not damaged, but strongly affected by the incidents. For example, areas backed up by a transportation accident.	Single site. One or two blocks.	Single site/ multiple blocks	Community specific (ex. Downtown)	City-wide	Regional
<b>Duration</b>	How long does the acute crisis part of the disaster last?	Less than 24 hours	1-3 days	4-7 days	7-30 days	30+ days
<b>Environment</b>	How damaging is the disaster for the natural environment	No damage/ temporary minor damage	Degradation of the ecosystem that will repair itself	Degradation of ecosystem that requires intervention	Functional loss of ecosystem, but restoration possible	Permanent loss of ecosystem
<b>Health Effects</b>	How dangerous is the hazard to human health and safety?	No deaths or injuries	1-10 deaths and/or 1-100 injuries	11-50 deaths and/or 101-500 injuries	51-500 deaths and/or 501-1500 injuries	over 501 deaths and/or 1501 injuries
<b>Displacement</b>	How likely is the hazard to negatively impact the exposed population in terms of displacement and personal property loss	No displaced people/ minor inconveniences	Displaced people. Vulnerable populations begin to have problems with access to essential supplies	Displaced people. Vulnerable populations have serious difficulties. General population starting to have problems	251-1000 people displaced. 5-30% of population experiencing acute shortages of supplies	1000+ displaced people. More than 30% of population facing acute shortages of basic supplies and access to services
<b>Economic Impacts</b>	How does the hazard affect the local economy?	No measureable impacts	No impacts to overall economy, but isolated businesses experience hardships	Entire sectors experiencing loss of revenue and capital	Sectors of economic base affected & unable to generate revenue; Losses range	Physical losses equal to 10% of assessed value. Loss of ability to generate revenue.
<b>Built Environment (Property, Facilities, and Infrastructure)</b>	How does the hazard affect buildings and physical infrastructure this includes Utilities	No effects.	1-10 structures damaged. Up to 25% loss of one utility	11-250 structures damaged. Multiple utilities affected up to 25% loss	between 1- 10% of assessed value.	1000+ structures damaged. At least two major utilities degraded by 50%+loss
<b>Transportation</b>	How does the hazard affect the ability of residents and workers to access the resources they need?	No effects on mobility	All critical services accessible, but delays reaching work or non-essential services.	One critical service inaccessible. Major corridors open, but minor streets depredated or impassable	Many Critical Services inaccessible One major corridor inoperable	Most critical services inaccessible Most major corridors impassable.
<b>Critical Services (Includes COOP and Responders)</b>	How likely is the hazard to reduce the ability of government business to provide critical services?	Little impairment on critical services	Temporary degradation of 1 critical service	Temporary degradation of multiple critical services. Long-term degradation of 1 critical service	Temporary degradation of most critical services. Long-term degradation of multiple services.	Unable to deliver the most critical services
<b>Confidence in Government</b>	Would public's confidence in government be shaken?	No		Somewhat		Yes
<b>Cascading Effects</b>	How severe and complex will the secondary effects be?	Hazard unlikely to cause secondary hazards, and if they occur are minor	Secondary hazards may occur, but are likely to be minor compared to primary hazard	Secondary hazards occur that extend the impact of the disaster and hamper response, but are not considered disasters	Secondary effects generated that significantly increase the magnitude of the disaster. Secondary impacts would be considered disasters if they occurred by themselves.	Secondary effects generated and rival or exceed primary hazard. Secondary impacts would be disasters if they occurred by themselves.
<b>Future Emphasis</b>	How much is the level of emphasis in mitigating, planning for, and preparing for this hazard changed based on trends, increasing understanding of the hazard, and changing underlying conditions that give rise to the hazard?	Decreasing Emphasis		Emphasis Unchanged		Increasing Emphasis

### Planning Team Results

Hazard	OEM Results	Facilities Results	Fire Results	GP&L Results	Health Results	Neighborhood Vitality Results	Parks Results	Water Results	Police Results	Building Inspection Results	Engineering Results	RISK
Extreme Heat	32%	19%	32%	17%	29%	26%	22%	8%	6%	12%	6%	19%
Severe Winter Weather	32%	39%	14%	17%	15%	17%	24%	8%	15%	0%	0%	16%
Hail	26%	26%	22%	17%	17%	15%	32%	9%	2%	10%	1%	16%
Wind	32%	13%	26%	11%	19%	9%	26%	11%	2%	10%	0%	14%
Extreme Cold	29%	26%	14%	17%	29%	17%	12%	8%	6%	0%	0%	14%
Power Outages	29%	17%	12%	15%	17%	10%	11%	6%	15%	8%	0%	13%
Tornado	19%	19%	11%	13%	6%	15%	32%	5%	5%	11%	0%	12%
Flood	19%	22%	11%	11%	22%	13%	19%	4%	4%	0%	4%	12%
Biological Event	29%	45%	22%	0%	12%	0%	12%	6%	0%	0%	0%	11%
Drought	12%	3%	17%	17%	13%	19%	12%	13%	4%	13%	1%	11%
Expansive Soil	11%	0%	29%	17%	28%	9%	0%	4%	0%	17%	1%	11%
Communications Failure	12%	26%	0%	24%	15%	11%	11%	6%	6%	0%	0%	10%
Lightning	26%	2%	19%	6%	15%	5%	22%	11%	0%	0%	1%	10%
Hazardous Materials (Fixed and Transport)	5%	42%	29%	8%	0%	5%	0%	5%	0%	0%	0%	9%
Erosion	8%	0%	8%	6%	22%	6%	24%	4%	2%	0%	2%	7%
Information Systems Failure	0%	35%	0%	10%	0%	12%	0%	5%	9%	0%	0%	6%
Fuel Shortage	0%	22%	10%	12%	15%	11%	0%	0%	0%	0%	0%	6%
Plant Explosion	0%	35%	0%	5%	0%	9%	0%	0%	0%	0%	0%	4%
Civil Disturbance	0%	0%	11%	13%	0%	5%	8%	0%	5%	0%	0%	4%
Active Shooter	5%	15%	8%	6%	0%	3%	0%	0%	4%	0%	0%	4%
Bomb Threat	9%	0%	0%	6%	8%	3%	5%	0%	3%	0%	0%	3%
Terrorism	0%	24%	0%	0%	0%	0%	0%	4%	0%	0%	0%	3%
Earthquake	0%	0%	0%	13%	0%	0%	12%	0%	0%	0%	0%	2%
Water Failure	0%	0%	0%	5%	10%	0%	0%	5%	0%	0%	0%	2%
Sewer Failure	0%	0%	0%	5%	8%	0%	0%	5%	0%	0%	0%	2%
Wildfire	8%	0%	0%	0%	0%	0%	10%	0%	0%	0%	0%	2%
VIP Situation	0%	0%	0%	6%	0%	0%	0%	4%	6%	0%	0%	1%
Railroad Incidents	0%	0%	0%	5%	0%	0%	0%	3%	5%	0%	1%	1%
Subsidence	0%	2%	0%	6%	0%	0%	0%	0%	0%	0%	0%	1%
Aircraft Incident	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Dam Failure	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

## H. Community Impact Assessment

### Sample Survey

	Most Likely / Typical Scenario														
	Geographic Scope	Duration	Health Effects	Displacement	Economic Impact	Environmental Impact	Built Environment	Transportation	Critical Services	Confidence in Gov't	Base Score	Frequency (F)	Cascading Effects (CE)	Multiplier (F + CE)	Subtotal
Drought											0			0	0
Earthquake											0			0	0
Erosion											0			0	0
Expansive Soil											0			0	0
Extreme Heat											0			0	0
Flood											0			0	0
Hail											0			0	0
Severe Thunderstorms / Wind / Lightening											0			0	0
Severe Winter Weather											0			0	0
Tornado											0			0	0
Biological Event											0			0	0
Communications Failure / Infrastructure Failure											0			0	0
Power Outages											0			0	0
Terrorism/Cyber Attacks											0			0	0

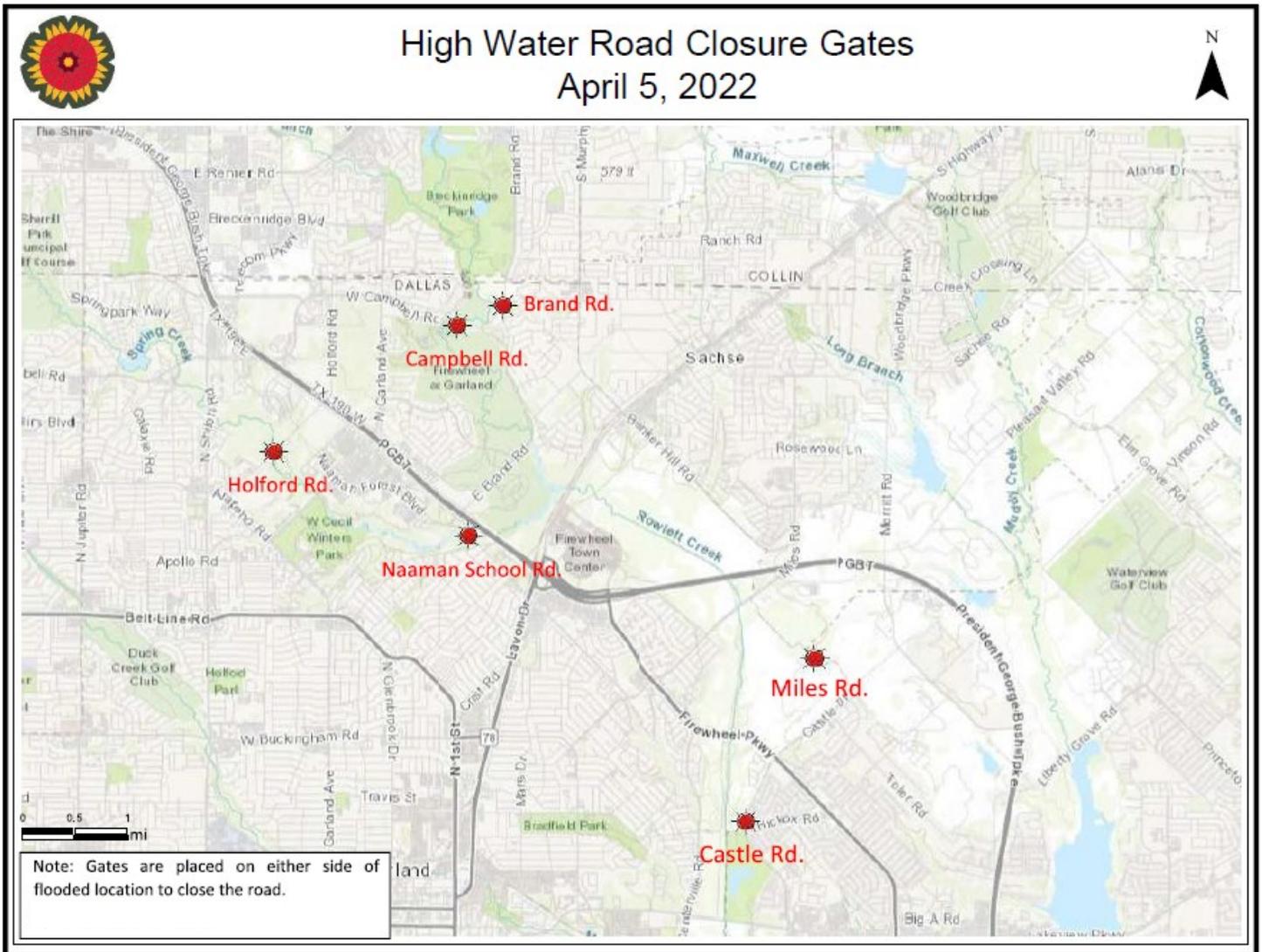
## Definitions

Parameter	Definition	One (1)	Two (2)	Three (3)	Four (4)	Five (5)
<b>Frequency</b>	How often has the hazard occurred in the past?	Never occurred locally	Once in past thousand years	Once in past hundred years	Once in past 50 years	Nearly every decade
<b>Geographic Scope</b>	Size of the affected area. Includes areas not damaged, but strongly affected by the incidents. For example, areas backed up by a transportation accident.	Single site. One or two blocks.	Single site/ multiple blocks	Community specific (ex. Downtown)	City-wide	Regional
<b>Duration</b>	How long does the acute crisis part of the disaster last?	Less than 24 hours	1-3 days	4-7 days	7-30 days	30+ days
<b>Environment</b>	How damaging is the disaster for the natural environment	No damage/ temporary minor damage	Degradation of the ecosystem that will repair itself	Degradation of ecosystem that requires intervention	Functional loss of ecosystem, but restoration possible	Permanent loss of ecosystem
<b>Health Effects</b>	How dangerous is the hazard to human health and safety?	No deaths or injuries	1-10 deaths and/or 1-100 injuries	11-50 deaths and/or 101-500 injuries	51-500 deaths and/or 501-1500 injuries	over 501 deaths and/or 1501 injuries
<b>Displacement</b>	How likely is the hazard to negatively impact the exposed population in terms of displacement and personal property loss	No displaced people/ minor inconveniences	Displaced people. Vulnerable populations begin to have problems with access to essential supplies	Displaced people. Vulnerable populations have serious difficulties. General population starting to have problems	251-1000 people displaced. 5-30% of population experiencing acute shortages of supplies	1000+ displaced people. More than 30% of population facing acute shortages of basic supplies and access to services
<b>Economic Impacts</b>	How does the hazard affect the local economy?	No measureable impacts	No impacts to overall economy, but isolated businesses experience hardships	Entire sectors experiencing loss of revenue and capital	Sectors of economic base affected & unable to generate revenue; Losses range	Physical losses equal to 10% of assessed value. Loss of ability to generate revenue.
<b>Built Environment (Property, Facilities, and Infrastructure)</b>	How does the hazard affect buildings and physical infrastructure this includes Utilities	No effects.	1-10 structures damaged. Up to 25% loss of one utility	11-250 structures damaged. Multiple utilities affected up to 25% loss	between 1- 10% of assessed value.	1000+ structures damaged. At least two major utilities degraded by 50%+loss
<b>Transportation</b>	How does the hazard affect the ability of residents and workers to access the resources they need?	No effects on mobility	All critical services accessible, but delays reaching work or non-essential services.	One critical service inaccessible. Major corridors open, but minor streets depredated or impassable	Many Critical Services inaccessible One major corridor inoperable	Most critical services inaccessible Most major corridors impassible.
<b>Critical Services (Includes COOP and Responders)</b>	How likely is the hazard to reduce the ability of government business to provide critical services?	Little impairment on critical services	Temporary degradation of 1 critical service	Temporary degradation of multiple critical services. Long-term degradation of 1 critical service	Temporary degradation of most critical services. Long-term degradation of multiple services.	Unable to deliver the most critical services
<b>Confidence in Government</b>	Would public's confidence in government be shaken?	No		Somewhat		Yes
<b>Cascading Effects</b>	How severe and complex will the secondary effects be?	Hazard unlikely to cause secondary hazards, and if they occur are minor	Secondary hazards may occur, but are likely to be minor compared to primary hazard	Secondary hazards occur that extend the impact of the disaster and hamper response, but are not considered disasters	Secondary effects generated that significantly increase the magnitude of the disaster. Secondary impacts would be considered disasters if they occurred by themselves.	Secondary effects generated and rival or exceed primary hazard. Secondary impacts would be disasters if they occurred by themselves.
<b>Future Emphasis</b>	How much is the level of emphasis in mitigating, planning for, and preparing for this hazard changed based on trends, increasing understanding of the hazard, and changing underlying conditions that give rise to the hazard?	Decreasing Emphasis		Emphasis Unchanged		Increasing Emphasis

**Community Results**

	Most Likely / Typical Scenario														
	Geographic Scope	Duration	Health Effects	Displacement	Economic Impact	Environmental Impact	Built Environment	Transportation	Critical Services	Confidence in Gov't	Base Score	Frequency (F)	Cascading Effects (CE)	Multiplier (F + CE)	Subtotal
<b>Drought</b>	14	14	6	5	8	10	6	6	5	9	8.3	9	6	15	124.5
<b>Earthquake</b>	11	4	6	8	8	8	10	9	7	5	7.6	2	5	7	53.2
<b>Erosion</b>	5	11	3	5	5	9	7	4	3	5	5.7	10	4	14	79.8
<b>Expansive Soil</b>	9	12	3	3	5	9	7	6	3	3	6	10	3	13	78
<b>Extreme Heat</b>	15	12	10	6	8	9	5	5	4	3	7.7	10	4	14	107.8
<b>Flood</b>	12	7	6	9	6	10	10	8	8	7	8.3	9	4	13	107.9
<b>Hail</b>	9	5	4	4	5	7	8	4	6	3	5.5	7	4	11	60.5
<b>Severe Thunderstorms / Wind / Lightening</b>	13	6	4	4	9	7	8	4	6	6	6.7	8	4	12	80.4
<b>Severe Winter Weather</b>	15	10	8	6	9	10	12	7	10	9	9.6	8	7	15	144
<b>Tornado</b>	12	7	9	10	7	13	13	10	12	9	10.2	9	7	16	163.2
<b>Biological Event</b>	7	12	11	10	8	5	5	4	5	7	7.4	6	3	9	66.6
<b>Communications Failure / Infrastructure Failure</b>	11	8	6	6	8	6	6	7	8	11	7.7	10	6	16	123.2
<b>Power Outages</b>	12	9	8	10	12	7	11	10	12	13	10.4	8	6	14	145.6
<b>Terrorism/Cyber Attacks</b>	11	10	7	8	10	6	6	7	8	12	8.5	8	5	13	110.5

# I. Flood Gates



## J. Public Education Program Summary and Resources

Public education and awareness is often the most important mechanism by which communities can strengthen resilience, and, as a result, minimize the impact of emergencies and disasters. Mitigation efforts directly impact how quickly and completely citizens can recovery from all types of disasters regardless of the cause. The more prepared residents are to survive on their own, the more government agencies can focus their attention and resources on life safety, incident stabilization and recovery from critical infrastructure impacts. The Garland Office of Emergency Management Public Education Program includes a multifaceted approach to outreach including the following resources:

### 1. Preparedness Presentations

- Emergency Management staff provide disaster and emergency preparedness and mitigation outreach and education presentations for any organization, class, school, group, facility, neighborhood, etc. within Garland. Presentations are customized to meet the needs and interests of specific audiences including tips, tools and tailored preparedness and mitigation considerations as well as information regarding emergency services Garland offers.
- Request a Presentation online at [GarlandTX.gov/oem](http://GarlandTX.gov/oem) or by calling the Office of Emergency Management at 972-781-7273.

### 2. Public Education Materials

- Emergency and disaster public education material is available through OEM free of charge to the public. Materials provide simple actions residents can take to prepare themselves and their families for all types of disasters including building a disaster supply kit and making a family disaster plan. When OEM staff provide presentations, customized public education materials for each group are also provided.
- Any resident can request materials online at [GarlandTX.gov/oem](http://GarlandTX.gov/oem) or by calling the Office of Emergency Management at 972-781-7273.
- Available printed materials include but are not limited to:
  - Guide for Alerts and Warnings
  - Family Emergency Planning booklet/brochure (English & Spanish)
  - Kids Activity Books (English & Spanish)
  - North Texas Guide to Disaster Preparedness
  - Communications Plan Template
  - Emergency Kit Supply List
  - 12 Ways to Prepare Postcard (English and Spanish)
  - Hazard specific fliers
  - Winter Storm Information Sheet

*Note: Some materials are available in other languages upon request.*

### 3. Utility Bills Announcements (Inserts)

- Twice a year, the Office of Emergency Management creates utility bill inserts with important prevention, mitigation, preparedness, response and recovery information. Each insert is mailed to all Garland households and utility customers reaching approximately 69,000 locations within the City of Garland. These mailers are also provided as handouts at presentations, public outreach events and on public information displays.
- Electronic versions of Utility Bill Announcements are available here: [www.garlandtx.gov/737/Utility-Bill-Announcements](http://www.garlandtx.gov/737/Utility-Bill-Announcements)
- Recent Utility Bill Topics
  - NOAA and Outdoor Warning Systems
  - Disaster Recovery
  - Flood Safety
  - Garland Alert System

### 4. Social Media Outreach

- The Office of Emergency Management coordinates with the Public and Media Relations department to provide outreach to Garland citizens through Facebook, Twitter, Instagram, LinkedIn and Nextdoor. Throughout the year, OEM provides educational information on various emergency management related topics such as: outdoor warning systems, weather safety, holiday or event safety tips, recovery and insurance considerations, mitigation and general preparedness.
- Social Media Platforms Utilized:



### 5. Garland City Press Articles

- Garland City Press is produced and funded by the City of Garland and contains information about the City, as well as details on City-sponsored events. The Office of Emergency Management provides six articles per year for the Garland City Press. Issues of Garland City Press can be found here: [www.garlandtx.gov/724/Garland-City-Press](http://www.garlandtx.gov/724/Garland-City-Press)

### 6. Emergency Management Website Content ([GarlandTX.gov/prepare](http://GarlandTX.gov/prepare))

- The Office of Emergency Management updates and maintains the Emergency Management portion of the City of Garland's website. OEM frequently updates website content to provide consistent and relevant information to the public.

- Current Homepage Content Includes:
  - Links to request a presentation or materials
  - Contact Information
  - Current hazard specific preparedness/mitigation information (Beat The Heat and Common Heat Safety Tips)
  - Outdoor Warning System Information Access
  - Garland Alert System information and registration links
  - Prepare – Get Ready for Disaster page
  - Hazard Mitigation page
  - Think – Know Your Community page
  - Act – Get Involved page

The HazMAP is one of the plans managed by the Office of Emergency Management. As part of this plan, one identified Mitigation Action is to continue developing and implementing a comprehensive public education and outreach program to increase awareness of hazards, risk and vulnerabilities throughout the community. To that end, Garland OEM continually seeks opportunities for funding to support the continued development and implementation of the public education program.



**GARLAND**



## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. g.

**Meeting Date:** January 9, 2023

**Item Title:** 2022 Homeland Security Grant Program Application Resolution

**Submitted By:** Mistie Gardner, Director of Operations & Emergency Management

**Strategic Focus Areas:** Safe Community

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### ISSUE

The Department of Homeland Security Grant Program (HSGP) is managed, at the state level, by the Office of the Governor (OOG). As has been the case for many years, the OOG requires jurisdictions applying for HSGP funding to have a Council-approved resolution each year prior to utilizing awarded funds which identifies the submitted projects as well as the authorized official to manage the administration of the grant.

### OPTIONS

1. Approve a resolution to support the 2022 Homeland Security Grant Program (HSGP) application.
2. Reject acceptance of the 2022 Homeland Security Grant Program awards.

### RECOMMENDATION

The Office of Emergency Management (OEM) staff recommends support of the HSGP application to gain access to grant funding. The resolution will allow the City of Garland to acquire funding to help support and improve public safety response and recovery capabilities. This 2022 UASI funding will be used to purchase resources to support the following Garland projects:

- 2022 SHSP LETPA-Garland-EOD Unknown Detection Technologies
  - Funding this project will allow the Garland Police Department Bomb Squad to purchase a handheld chemical detector to identify unknown chemical substances allowing GPD to accurately assess evacuation distances or shelter-in-place options and identify render safe options.
- 2022 SHSP Regular-Garland-SWAT Communications Equipment
  - Funding this regional project will assist in building and sustaining the Garland Special Weapons and Tactics (SWAT) team by addressing identified operational communications issues. The purchase of this communication equipment will enhance the capability of protecting team members during coordinated and complex terroristic attacks, hostage situations, and other criminal activity by allowing for real-time, secure communications between tactical supervisors and all members while on scene.

- 2022 UASI – Garland - Community Preparedness and Resiliency
  - Funding this project will enhance community preparedness and resiliency city-wide by providing salary and benefits for a Community Preparedness and Resilience Coordinator. Funding this position is vital to enable Garland Emergency Management to provide critical planning, community engagement preparedness, and outreach education programs enhancing local and regional resilience. The position will maintain/implement resiliency-based plans: Hazard Mitigation Action Plan, Continuity of Operations Plan: Securing CI/KR lists, leveraging resilience tools for site surveys to assess resilience per site, State & DHS data calls, develop a Vital Records access/maintenance process.
- 2022 UASI Garland – DVE Response Enhancement
  - This project will fund an Unmanned Aircraft System to conduct protective surveillance of Domestic Violent Extremist actors on populated areas, soft targets, special events, and other high-impact, high-consequence infrastructure targets by providing immediate on-scene intelligence directly accessible to responders.
- 2022 UASI Garland – Water Search & Rescue Team Enhancement
  - Funding this project will allow procurement of a surface boat, outboard motor, trailer, and night vision equipment to enhance Garland Fire Department’s current Swiftwater Search and Rescue capabilities to provide shore and boat-based water rescue for humans and animals, transport to the nearest location for secondary transport, support urban search and rescue in water environments and respond to water-based hazardous materials incidents.

This item will be scheduled for formal consideration at the January 10, 2023 Regular Meeting.

## **BACKGROUND**

The primary purpose of the Department of Homeland Security’s (DHS)/Federal Emergency Management Agency’s (FEMA) Homeland Security Grant Program (HSGP) is to provide funding to states, territories, urban areas, and other local and tribal governments to prevent, protect against, mitigate, respond to, and recover from potential terrorist attacks and other hazards. HSGP plays an important role in the implementation of the National Preparedness System by supporting the building, sustainment and delivery of core capabilities essential to achieving the National Preparedness Goal of a secure and resilient Nation. Among the five noted mission areas, Prevention, Protection, Mitigation, Response, and Recovery, HSGP supports the goal to Strengthen National Preparedness and Resilience.

The UASI program funds address the unique risk-driven and capabilities-based planning, organization, equipment, training, and exercise needs of high-threat, high-density Urban Areas based on the capabilities identified during the THIRA process and associated assessment efforts. The funds also assist them in building an enhanced and sustainable capacity to prevent, protect against, mitigate, respond to, and recover from acts of terrorism. DHS/FEMA requires at least 30 percent (30%) of the combined HSGP funds allocated under SHSP and UASI are dedicated towards Law Enforcement Terrorism Prevention Activities (LETPA), per section 2006 of the Homeland Security Act of 2002, as amended (6 U.S.C. 607). This requirement is met by mandating all SHSP and UASI recipients to ensure that at least 30% of the combined HSGP funds allocated under SHSP and UASI are dedicated towards LETPA initiatives. Activities eligible for use of law-enforcement-focused funds are outlined in the National Prevention Framework.

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**Attachments**

Reso No. \_\_\_ Emerg Mngt 2022 HSGP\_Resolution FY2023

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RESOLUTION NO. \_\_\_\_\_

**A RESOLUTION AUTHORIZING THE SUBMISSION OF A GRANT APPLICATION TO THE OFFICE OF THE GOVERNOR OF THE STATE OF TEXAS FOR CERTAIN PUBLIC SAFETY, LAW ENFORCEMENT, AND HOMELAND SECURITY PROJECTS; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the Garland City Council finds it in the best interests of the citizens of Garland that the following projects be implemented for the Fiscal Year of 2023, under the 2022 Homeland Security Grant Program, including the Urban Area Security Initiative (UASI), the State Homeland Security Program (SHSP), and the Law Enforcement Terrorism Prevention Activities (LETPA):

- (1) 2022 SHSP LETPA Garland EOD Unknown Detection Technologies,
- (2) 2022 SHSP Garland SWAT Communications Equipment,
- (3) 2022 UASI Garland Community Preparedness and Resiliency,
- (4) 2022 UASI Garland DVE Response Enhancement, and
- (5) 2022 UASI Garland Water Search and Rescue Team Enhancement;

**WHEREAS**, the Garland City Council agrees that in the event of loss or misuse of the Office of the Governor funds, the City assures that the funds will be returned to the Texas Office of the Governor in full; and

**WHEREAS**, the Garland City Council designates the Emergency Management Director of the Garland Office of Emergency Management as the grantee's authorized official, and gives the Director the power to apply for, accept, reject, alter, or terminate the grant on behalf of the applicant agency.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GARLAND, TEXAS THAT:**

**Section 1**

The Garland City Council approves the submission of a grant application (whether one or more) for the following projects to the Office of the Governor:

- (1) 2022 SHSP LETPA Garland EOD Unknown Detection Technologies,
- (2) 2022 SHSP Garland SWAT Communications Equipment,
- (3) 2022 UASI Garland Community Preparedness and Resiliency;
- (4) 2022 UASI Garland DVE Response Enhancement, and
- (5) 2022 UASI Garland Water Search and Rescue Team Enhancement.

**Section 2**

The Garland City Council hereby designates the Emergency Management Director of the Garland Office of Emergency Management as the City's authorized official to act in all matters relating to the foregoing grant application(s) and that authorized official is hereby given the power to apply for, accept, reject, alter, or terminate the grant on behalf of the City.

**Section 3**

This Resolution shall be and become effective immediately upon and after its adoption and approval.

**PASSED AND APPROVED** this the \_\_\_\_ day of \_\_\_\_\_, 2023.

**CITY OF GARLAND, TEXAS**

\_\_\_\_\_  
Mayor

**ATTEST:**

\_\_\_\_\_  
City Secretary

Grant Numbers:  
4469201, 4469401, 4576201, 4576501, and 4576601.



## GARLAND POLICY REPORT

### City Council Work Session Agenda

3. h.

**Meeting Date:** January 9, 2023  
**Item Title:** Optional Redemption of Tax Notes  
**Submitted By:** Matt Watson, Finance Director  
**Strategic Focus Areas:** Sound Governance and Finances

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#### ISSUE

When Council approved the issuance of \$36,980,000 Tax Notes, Series 2022 on September 9, 2022, it was contemplated that the City would exercise the call provision to redeem the notes prior to the scheduled maturity date of November 15, 2023. Staff requests Council consider approving a resolution to redeem the Tax Notes, Series 2022 as contemplated.

#### OPTIONS

1. Call the Tax Notes, Series 2022 on February 15, 2023.
2. Allow the Tax Notes, Series 2022 to mature on November 15, 2023.

#### RECOMMENDATION

Unless otherwise directed by Council, this item will be scheduled for formal consideration at the January 17, 2023 Regular Meeting.

#### BACKGROUND

The debt service savings generated from the General Obligation Commercial Paper program created additional debt capacity of \$36,980,000 in the FY 2022-23 budget. On September 9, 2022 City Council approved the issuance of a Tax Note, Series 2022 in the amount of \$36,980,000 to fund additional infrastructure improvements. Tax Note, Series 2022 was issued with the intent of exercising the option to early redeem the tax notes.

#### CONSIDERATION

If Council approves this request to redeem the tax notes, the City will save approximately \$1 million in interest cost paid from the General Obligation Interest & Sinking Fund.

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#### Attachments

Draft Resolution

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RESOLUTION NO. \_\_\_\_\_

A RESOLUTION PROVIDING FOR THE REDEMPTION OF THE OUTSTANDING CITY OF GARLAND, TEXAS, TAX NOTES, SERIES 2022; AND RESOLVING OTHER MATTERS INCIDENT AND RELATED TO THE REDEMPTION OF SUCH OBLIGATIONS

WHEREAS, pursuant to Ordinance No. 7359 (the “Ordinance”) passed and adopted by the City Council (the “Council”) of the City of Garland, Texas (the “City”), the following described obligations were duly authorized to be issued and are currently outstanding, to wit: City of Garland, Texas, Tax Notes, Series 2022, dated September 29, 2022, maturing on November 15, 2023, and aggregating in principal amount \$36,980,000; and

WHEREAS, the above identified obligations were authorized, issued, sold and delivered subject to the right and authority of the City to redeem the same prior to maturity, as provided in the Ordinance and in said obligations; and

WHEREAS, the Council hereby finds and determines that obligations of such series should be redeemed prior to their maturity on the date and in the manner hereinafter provided and in accordance with the requirements prescribed therefor and notice of redemption of such obligations should be approved and authorized to be given at this time by the Council; now, therefore,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GARLAND, TEXAS:

SECTION 1: The tax notes of the series known as “City of Garland, Texas, Tax Notes, Series 2022,” dated September 29, 2022, maturing on November 15, 2023, and aggregating in principal amount \$36,980,000, shall be redeemed and the same are hereby called for redemption on February 15, 2023, at the price of par plus accrued interest to the date of redemption. The Mayor and the City Secretary are hereby authorized and directed to file a copy of this Resolution, together with a suggested form of notice of redemption to be sent to noteholders, with PNC Bank, National Association, the current paying agent/registrar for such obligations, in accordance with the redemption provisions applicable to such obligations; such suggested form of notice of redemption being attached hereto as **Exhibit A** and incorporated herein by reference as a part of this Resolution for all purposes.

SECTION 2: The Mayor and the City Secretary of the City are hereby authorized and directed to make all arrangements necessary to notify the holders of such obligations of the City’s decision to redeem such obligations on the date and in the manner herein provided and in accordance with the Ordinance.

SECTION 3: It is officially found, determined, and declared that the meeting at which this Resolution is adopted was open to the public and public notice of the time, place, and subject matter of the public business to be considered at such meeting, including this Resolution, was given, all as required by Texas Government Code, Chapter 551, as amended.

SECTION 4: This Resolution shall be in force and effect from and after its passage on the date shown below.

PASSED AND ADOPTED, this January 17, 2023.

CITY OF GARLAND, TEXAS

\_\_\_\_\_  
Mayor

ATTEST:

\_\_\_\_\_  
City Secretary

(City Seal)

**EXHIBIT A**

**NOTICE OF REDEMPTION**

**CITY OF GARLAND, TEXAS TAX NOTES, SERIES 2022**

Dated September 29, 2022

NOTICE IS HEREBY GIVEN that all notes of the above series maturing on November 15, 2023 and aggregating in principal amount \$36,980,000, have been called for redemption on February 15, 2023 at the redemption price of par and accrued interest to the date of redemption.

ALL SUCH NOTES shall become due and payable on February 15, 2023, and interest thereon shall cease to accrue from and after said redemption date and payment of the redemption price of said obligations shall be paid to the registered owners of the obligations only upon presentation and surrender of such obligations to PNC Bank, National Association, 200 Crescent Court, Suite 400, Dallas, Texas 75201.

REDEMPTION of the notes is conditional upon the receipt of moneys sufficient to pay the principal of and interest on notes by the Paying Agent/Registrar on or prior to the date fixed for redemption, and, if sufficient moneys are not received, this notice shall be of no force and effect, the City shall not redeem the notes and the Paying Agent/Registrar shall give notice, in the manner in which this notice of redemption was given, to the effect that the notes have not been redeemed.

THIS NOTICE is issued and given pursuant to the terms and conditions prescribed for the redemption of said obligations and pursuant to a resolution by the City Council of the City of Garland, Texas.

PNC Bank, National Association  
200 Crescent Court, Suite 400  
Dallas, Texas 75201



**GARLAND  
CITY COUNCIL ITEM SUMMARY SHEET**

**City Council Work Session Agenda**

**4. a.**

**Meeting Date:** January 9, 2023

**Item Title:** Development Services Committee Report

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**Summary of Request/Problem**

Council Member Dylan Hedrick, Chair of the Development Services Committee, will report on the following items:

1. Review of GDC Tree Mitigation Requirements
2. Consider Changes to Zoning Rules Regarding Retail Pet Stores
3. Review Requirements for EV Charging Spaces and Parking Requirements

**Recommendation/Action Requested and Justification**

Council discussion.

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**Attachments**

Tree Preservation

Pet Store Definition Change

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## Section 4.30 Definitions

The following terms and phrases, as used in this [Chapter 4, Article 3](#), have the following meanings (other related definitions are contained within Article 4 of this Chapter 4, and also within [Chapter 6](#), of this GDC):

- (A) “Caliper” means a standard for the trunk measurement. It is the diameter of the trunk measured twelve inches above ground level for new or replacement trees. If a tree is a multi-trunk variety, the caliper of the tree is the sum of the largest trunk plus one-half the total of all other trunks, measured at twelve inches above the root ball. Existing tree caliper must be measured 4-1/2' above the noted grade.
- (B) “Drip Line” means a circular area beneath the canopy of a tree, the radius of which is equal to the distance from the trunk to a vertical line extending from the outermost portion of the canopy to the ground.
- (C) “Existing Tree” means any living, self-supporting woody plant with a caliper of two inches in diameter or greater.
- (D) “Groundcover & Turf Grasses” means any vegetative groundcover of a variety that is listed as a grass in Table 4-5 within Division 7 of this Article 3. Generally, it includes plants or grasses of species which normally reach a height of less than three feet upon maturity, installed in a manner intended to form a continuous cover over the ground.
- (E) “Irrigator” means a person who holds a license to practice irrigation in the state of Texas.
- (F) “Landscape Architect” means a person licensed to practice landscape architecture in the state of Texas.
- (G) “Non-Disturb Zone” means an area on a development site that is physically staked to protect the entire drip lines of existing trees that will be preserved, that is not disturbed in any way during construction, and that remains in its original state (including grades) after construction is completed.
- (H) “Perennials & Ornamental Grasses” means vegetation of a variety listed as such in Table 4-7 within Division 7 of this Article 3.
- ~~(I) “Protected Tree” means any healthy, growing self-supporting woody perennial plant listed in [Table 4-1](#) or [Table 4-2](#) within [Division 7](#) of this Article 3 that has a trunk size of six-inch caliper or greater when measured at a point four feet and six inches above ground level, which is of a species that normally attains a height of at least ten feet at maturity.~~
- (J) “Screening & Landscaping Plan” means a plan that describes and depicts how a proposed development complies with the landscape regulations of this Article 3, including depiction of screening device(s) and the location, size, and species of landscaping materials. The plan includes any related plans for irrigation that can be shown on a separate drawing.
- (K) “Shrubs - Low Level Screening” means a shrub or grass of a variety listed as such in Table 4-4 within Division 7 of this Article 3.
- (L) “Tree - Large Canopy Tree” means a tree of a variety listed as such in Table 4-1 within Division 7 of this Article 3.
- (M) “Tree - Small Ornamental Tree” means a tree of a variety listed as such in [Table 4-2](#) within Division 7 of this Article 3.
- (N) “Trees & Shrubs - High Level Screening” means vegetation of a variety listed as such in [Table 4-3](#) within Division 7 of this Article 3.

(O) “Vines for Screening Walls” means a variety of vegetation listed as such in Table 4-6 within Division 7 of this Article 3. Generally, it is a weak-stemmed plant that derives its support from climbing, twining, or creeping along a surface.

~~Division 8 – Tree Credits~~

~~Section 4.49 – Tree Retention Credits~~

~~(A) – Credits. Existing large canopy trees and healthy, mature ornamental trees must be preserved wherever possible (see Article 4 of this Chapter 4). Any tree listed within Table 4-1 or 4-2 in Section 4.48 that is preserved on a site and is six caliper inches or greater will be credited toward meeting up to thirty percent of the tree requirements of any provision of this Article 3 for that area within which they are located, according to the following Table 4-8.~~

~~Preserved tree species that are not listed in Table 4-1 or 4-2 may be approved by the Planning Director using the alternative compliance process (see Division 9 of this Article 3, and Article 1, Division 2 of this Chapter 4).~~

~~Table 4-8: Existing Trees – Tree Credits~~

<del>Caliper of Existing Large Canopy Tree (listed in Table 4-1)</del>	<del>Credit Against Tree Requirement</del>
<del>6" to 12"</del>	<del>1 large canopy tree</del>
<del>12.1" to 24"</del>	<del>2 large canopy trees</del>
<del>24.1" or greater</del>	<del>3 large canopy trees</del>

<del>Caliper of Small Ornamental Tree (listed in Table 4-2)</del>	<del>Credit Against Tree Requirement</del>
<del>6" to 10"</del>	<del>.5 large canopy tree</del>
<del>10.1" to 15"</del>	<del>1 large canopy tree</del>
<del>15.1" or greater</del>	<del>1.5 large canopy trees</del>

~~(B) – Location of Existing Trees. To receive credit, the existing tree(s), which will be retained, must be generally located within an area that a tree is required by this Article 3, unless otherwise approved using the alternative compliance process (see Division 9 of this Article 3, and Article 1, Division 2 of this Chapter 4).~~

~~(C) – Condition of Existing Trees:~~

~~(1) – The Planning Director may revoke credit issued for existing trees where trees intended for credits are damaged due to construction, broken branches, soil compaction, soil cut or fill, or other acts.~~

~~(2) – Existing trees receiving credit must remain in a healthy, growing condition. Any existing tree that is used to receive credit for a required landscaping tree and subsequently dies must be replaced, in accordance with Section 4.58, on a basis of one hundred and fifty percent of the replacement ratios shown in Table 4-9 within Article 4 of this Chapter 4.~~

~~(Ordinance 6773 adopted 5/19/15)~~



~~In order to encourage the installation of larger trees, credits will also be given for planting trees of a larger caliper inch size than minimally required. Credit for larger size trees will be given based upon the following provisions:~~

~~(A) — Any approved tree planted greater in size than what is minimally required by this Article 3 will count as credit towards the minimum tree requirements at a size equal to the increase in tree caliper.~~

~~(B) — A maximum of twenty five percent reduction of the total number of required trees in landscape buffer and parking areas may be credited for larger trees.~~

#### ~~Section 4.51 — Perimeter Tree Zone~~

~~Credit for Preserving Existing Tree Lines Adjacent to Residential Districts. A person, property owner, or developer, must comply with the following provisions related to existing tree lines adjacent to residential districts:~~

~~(A) — A minimum fifteen-foot non-disturb zone is required along any side or rear perimeter of a development or redevelopment site, regardless of the type of development or redevelopment, that is adjacent to a residential zoning district if any existing protected tree(s) exists within such area.~~

~~(B) — Existing protected trees that are located within a non-disturb zone must be protected and preserved; they will be given additional credit at a rate of one hundred and fifty percent of their caliper size (for example, a preserved 9" caliper tree, which would normally get a credit for one large canopy tree per Table 4-8, will be considered to be a 13.5" caliper tree, which would receive credits for two large canopy trees).~~

## **ARTICLE 4 - TREE PRESERVATION & MITIGATION**

### **Division 1 - Purpose & Definitions**

#### **Section 4.54 Purpose & Intent**

(A) Purpose. The purpose of this Article 4 is to require the preservation of existing, healthy trees as properties are developed or redeveloped, and to provide for the replacement of trees when they are removed for the development and redevelopment of lands.

(B) Intent. This Article 4 is intended to require the incorporation of existing significant trees and tree groupings into the overall design of a development, prevent clear-cutting and the unnecessary removal of trees in association with site development or redevelopment, and to recognize and conserve the urban forest as part of the city's green infrastructure. Preservation and replacement of trees is beneficial to the public health and welfare because trees reduce stormwater runoff and erosion, regenerate oxygen, purify the air of carbon dioxide, dust and pollutants, moderate local heat and winds and thereby conserve limited energy resources, delineate urban spaces, buffer conflicting land uses, provide habitats for wildlife that increases biodiversity, enhance community appearance and property values.

(C) Preservation to the Greatest Extent Possible. As development proposals are made, design

alternatives that preserve trees to the greatest extent possible should be explored. The lawful removal of trees and their necessary mitigation should only occur where it is determined that the trees would be inappropriate, impractical, or cost prohibitive to preserve.

(Ordinance 6773 adopted 5/19/15)

#### **Section 4.54.1 Applicability & Exemptions**

(A) Applicability. This Article 4 applies to any development or redevelopment, as defined herein, unless specifically exempted in Subsections (B) or (C) below. Further, persons who develop or redevelop property, must comply with the following provisions:

- (1) Applicable development and redevelopment proposals must include a Tree Management Plan and Tree Removal Authorization prior to tree removal in accordance with Division 2 of this Article 4.
- (2) Preservation and mitigation of trees as required herein applies to any tree that is removed from private or public property as part of a development or redevelopment.

(B) Single-Family, Townhouse and Two-Family Lots. This Article 4 does not apply to a protected tree located on a developed single-family, townhouse, or two-family residential lot contained within a plat of record on where a residential structure that has been released for occupancy is located. Those trees located in common areas and the required open space or screening must be protected in accordance with this Article 4.

(C) Commercial or Wholesale Nursery. This Article 4 does not apply to a bona-fide, commercial, or wholesale tree nursery to the extent a tree is held for sale or distribution in the ordinary course of business of the nursery.

(D) Any tree that endangers the public health, safety, or welfare and immediate removal is required due to structural integrity concerns or poses an imminent or immediate risk to persons or property.

(D) This Article 4 does not apply to undeveloped or infill lots of one acre or less and zoned SF, 2F, or SFA.

(E) Any tree removed within the Take Area, unless listed as Unprotected with the exception of Easter Red Cedars, will be counted as a Class 1 or Class 2 tree.

(Ordinance 6773 adopted 5/19/15; Ordinance 7107, sec. 71, adopted 12/3/19)

#### **Section 4.55 Definitions for Tree Preservation**

The following terms and phrases, as used in this Article 4, have the following meanings (other related definitions are contained within [Article 3 of this Chapter 4](#), and also within [Chapter 6](#), of this GDC):

(A) "Critical Root Zone" means the area of soil around and beneath a tree that supports that tree's root system, any disturbance of which directly affects the tree's chance of survival. The area is measured as a circle with a diameter equal to one foot for each one-inch caliper of the tree trunk, or that tree's crown drip line, whichever is the greater distance from the tree trunk.

(B) "Protective Fencing" means a temporary vertical barrier made of construction fencing, chain-link fencing, or similar materials having a minimum height of five feet.

(C) "Tree Inventory" means a graphical and tabular representation of all protected trees (i.e., trees

listed on Table 4-9 of this GDC) on a site that identifies the individual and total diameter at breast height (DBH) inches of protected trees and the size, location, and species of each protected tree.

(D) “Tree Management Plan” means a layout of the proposed development with graphical and tabular representation of all protected trees and other trees to be preserved on a site, where the plan; (i) meets the requirements of this Article 4; (ii) contains the information required in Division 2; and (iii) includes a planting plan and other mitigation information as necessary.

(E) “Tree Removal Authorization” means an approval issued by the Planning Director based on a Tree Management Plan that has been approved by the Planning Director during Site Plan, PD Detail Plan, Site Permit or Building Inspection review and approval (as applicable, and whichever occurs first).

(F) “Replacement Tree” means a tree used for the purpose of mitigating the destruction or removal of a protected tree, and having a minimum caliper size of three inches (as required in Division 4 of this Article 4).

(G) “DBH” DBH is measured four and one-half (4.5’) feet from natural ground level and is used to measure trees at maturity. As trees mature they develop large swelling at the base called the trunk flare. This extends quite a way up the trunk in a large tree. Arborists use DBH (diameter at breast height, or 4.5 feet above the ground) to get above the trunk flare and determine a more accurate measurement of the size of the trunk. DBH should be used when measuring any tree that naturally occurs or has been planted. All trees on approved tree surveys will be measured at DBH.

(H) “Caliper” means:

1. for field grown stock, the measurement of a tree six inches above ground level;
2. for container grown stock, the measurement of a tree taken six inches above soil level;
3. if the caliper measured at six inches is four and one-half inches or more, the caliper must be measured at 12 inches above the ground level, soil line, or root flare;
4. trees with multiple stems, it is one-half of the combined caliper of the three largest stems.

(I) “Drip Line” means a circular area beneath the canopy of a tree, the radius of which is equal to the distance from the trunk to a vertical line extending from the outermost portion of the canopy to the ground.

(J) “Tree” means a woody single or multi-trunk stem, when at maturity will obtain a minimum four-inch 4” trunk when measured at 4.5” from the base of grade.

(K) “Invasive Plant” means a plant that has been classified as invasive to the Garland region by the Texas Parks and Wildlife or the Texas Department of Agriculture.

(L) “Protected Tree” means a tree of any species that has a minimum diameter of six inches that is not classified as unprotect in this article.

(M) “Unprotected Tree” means the following:

1. Callery pear (all cultivars)
2. Chinaberry
3. Chinese Tallow
4. Ilex species (except for yaupon holly and Possumhaw holly)
5. Palm (all plants in *Palmae*)
6. Tree-of-heaven or *Ailanthus*
7. Eastern Red Cedar\* (except where otherwise specified in Section 4.54.1(E)).
8. Other species listed as invasive

(N) “Class 1 Tree” means a protected healthy tree whose age, size, or natural character are of special importance to the city, and meets the following species and size requirements:

1. Trees of the following species having a minimum 18-inch diameter: American elm, cedar elm, lacebark elm, chittamwood, persimmon, green & Texas ash, Pecan, all oak and walnut species.

(O) “Class 2 Tree” means a tree that is not otherwise classified.

(P) “Class 3 Tree” means Hackberry/Sugarberry, Arizona Ash, willow species, cottonwood, honey locust, mesquite, mulberry, *pinus* species, Siberian elm, silver maple.

(Q) “Take Area” means the land owned by the City of Dallas between the Take Line and normal Lake Ray Hubbard pool elevation (435.5 mean sea level”).

(R) “Take Line” means the perimeter boundary of the City of Dallas’ property at Lake Ray Hubbard.

(Ordinance 6773 adopted 5/19/15; Ordinance 7107, sec. 72, adopted 12/3/19)

## **Division 2 - Administrative Procedures**

### **Section 4.56 Tree Management Plan Required**

(A) Tree Management Plan Required. A Tree Management Plan is required for any development proposing to remove protected trees, prior to the removal of any protected tree, for all applicable development as outlined in Section 4.54.1 of this Article 4. The Planning Director or his/her designee may, upon a written request, waive the requirement for a separate Tree Management Plan for development or redevelopment sites that require removal of five or fewer protected trees where the tree management information is presented on the screening and landscaping plans.

(B) Responsible Official. The Planning Director or his/her designee is the official responsible for the review and approval or denial of a Tree Management Plan.

(C) Application Submittal.

(1) A Tree Management Plan may be submitted with the screening and landscaping plans (see Section 4.31), or with an appropriate development application (whichever occurs first).

(2) If neither a zoning application nor plat is required, a Tree Management Plan must be submitted as part of the initial development application.

(D) Requirements. A Tree Management Plan must be prepared by a certified arborist or registered landscape architect (unless waived by the Planning Director or his/her designee pursuant to above Subsection (A) of this Section 4.56) and must include the following information:

(1) A layout of the intended development, including the building footprint and parking areas.

(2) A Tree Inventory that is completed no more than two years (that is, 730 calendar days) prior to the date of submission, and also prepared by a certified arborist or registered landscape architect.

(3) The location, diameter inch, and species of existing protected trees on the site.

(4) The location and an itemized list of trees, by size and species, proposed for removal, and indicating the total aggregate value in diameter inches.

(5) The location and an itemized list of the trees, by size and species, to be preserved, and indicating the total aggregate value in diameter inches.

(6) The existing and proposed grades at the base of the trees to be preserved.

(7) The protective measures and barriers to be used during construction to preserve the protected trees that are to remain.

(8) A plan for the mitigation of tree diameter inches required to be replaced that indicates the proposed location, size, and species of trees planned for removal, as well as for the trees that will be preserved.

(9) Phantom lines that depict streets, rights-of-way, easements, and other improvements in order to clearly indicate how the proposed development relates to the existing trees that are planned for removal, and to the new trees that are proposed to replace them.

(E) Action - Approval or Denial. A Tree Management Plan will be preliminarily reviewed by the Planning Director or his/her designee part of the initial development application. Final review and approval of a Tree Management Plan occurs in conjunction with review and approval of the Site Engineering or Building Construction Drawings, whichever is required first.

(F) Effect - Tree Removal Authorization. Approval of a Tree Management Plan by the Planning Director or his/her designee results in a Tree Removal Authorization. It shall be unlawful for any person to remove or destroy any protected tree without first obtaining Tree Removal Authorization, except as provided for residential lots in Section 4.54.1(B).

(G) Sites That Are Not Involved in the Development Process. A person, property owner, or developer

must comply with the following procedures, as applicable, of this Subsection (G) in situations where no site permits, building permits, or proposed development plans are being sought (the following procedures apply to all trees on a property):

- (1) Before any tree can be removed, including protected trees, a Tree Removal Permit must be obtained from the Planning Department. Protected trees are as defined by Section ~~4.30~~ 4.55 of Article 3 4 in this Chapter 4.
- (2) Tree Removal Permits must be submitted with a tree survey (or site plan) prepared by a registered Landscape Architect or Arborist.
- (3) The survey or site plan must identify all trees proposed for removal, the location of the trees on the site, and identify the tree's diameter inch and species.
- (4) The applicant must also submit a tree replacement plan prepared by a registered Landscape Architect or Arborist showing how the trees will be mitigated. A Tree Removal Permit will only be issued after the tree replacement plan (landscape plan) has been submitted and approved. The Planning Director or his/her designee may waive the requirement of the plan being prepared by a landscape professional based on the extent of tree removal and tree replacement.
- (5) Mitigation of removed protected trees must follow the mitigation requirements of Division 4 (Tree Preservation and Mitigation Requirements) of this Article 4, regarding replacement trees or payment into the tree fund for trees not replanted on-site.
- (6) Trees removed from required landscape areas must be replanted within those areas unless approved by the Planning Director through alternative compliance.

(Ordinance 6773 adopted 5/19/15; Ordinance 7107, sec. 73, adopted 12/3/19)

### **Division 3 - Enforcement & Penalties**

#### **Section 4.57 Enforcement & Penalties**

(A) Civil Penalties. Any person, or property owner, who engages or participates in, allows, or suffers the following prohibited activities, will be subject to civil penalties in the amount of two hundred and fifty dollars per diameter inch of tree removed or injured:

- (1) The removal of any tree in violation of this Article 4; or
- (2) Injuring a tree by failing to comply with the tree protection measures required by this Article 4, and the injury causes, or may reasonably be expected to cause, the tree to decline or die.

(B) Administrative Enforcement and Adjudication. The City shall follow the administrative enforcement and adjudication procedures as outlined in Chapter 24 of the City Code, to assess and adjudicate any civil penalties imposed under this Section 4.57.

(C) Reforestation and Tree Management Fund. Penalties paid to the City under this Section 4.57 will be deposited into a reforestation and tree management fund to be used by the City to provide and support

landscape plantings on other properties.

(Ordinance 6773 adopted 5/19/15)

#### Division 4 - Tree Preservation & Mitigation Requirements

##### Section 4.58 Replacement Trees

(A) Replacement. Any protected tree that is healthy and growing on a site, but is not preserved, must be replaced at the minimum rates shown in Table 4-9 for each type of tree (see example of how to inventory, identify, and calculate tree mitigation in Illustration 4-3).

(B) Replacement Trees To Be Used. Any tree planted as a replacement tree to comply with provisions of this Article 4 must be approved by the Development Director or his/her designee.

(C) Minimum Size of Replacement Trees. Any tree planted as a replacement tree to comply with provisions of this Article 4 must have a caliper of three inches or larger (either single-trunk or multi-trunk) at planting.

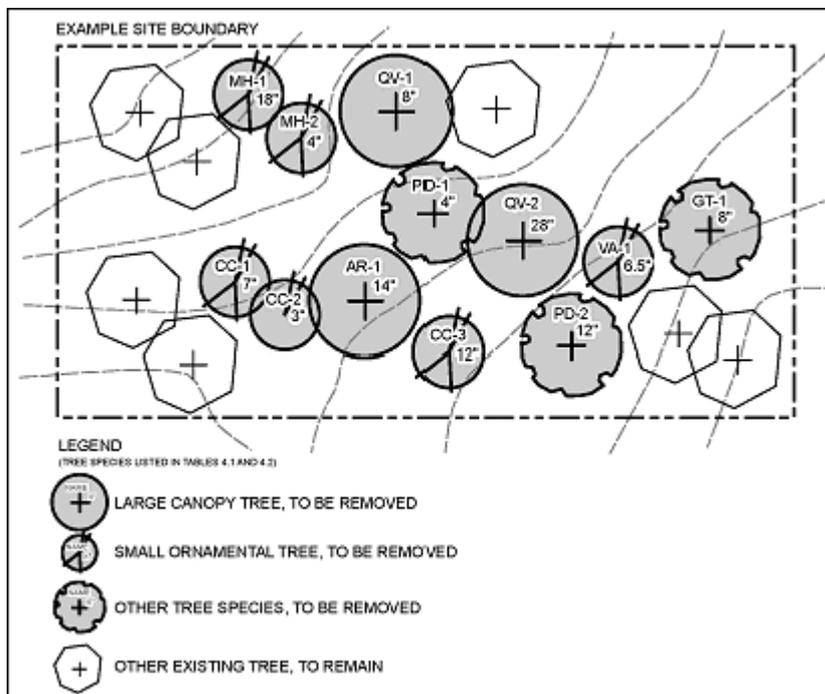
(D) For a lot or tract two (2) acres in size or more, no one species of tree may constitute more than 30 percent (30%).

**Table 4-9: Existing Trees - Replacement Ratios**

Existing Tree Species	Replacement Ratio
Class 1 Trees	r 2:1 (2 caliper inches per 1 diameter inch)
Class 2 trees	1:1 (1 caliper inch per 1 caliper inch)
Class 3 trees	0.5:1 (1/2 caliper inch per 1 caliper inch)

**Illustration 4-3**

**Example of Tree Inventory and Mitigation Calculation**



Tree to be Removed	Total Caliper Inches to be Removed	Replacement Ratio	Replacement Caliper Inches Required
Live oak	8.0 inches	1.0:1 (1 caliper inch per caliper inch)	8.0 inches
Live oak	28.0 inches	2.0:1 (2 caliper inches per caliper inch)	56.0 inches
Arizona ash	14.0 inches	0.5:1 (0.5 caliper inches per caliper inch)	7.0 inches
<b>Subtotal</b>	<b>50.0 inches</b>		<b>71.0 inches</b>

**Example 2**

Trees to be Removed	Total Caliper Inches to be Removed	Replacement Ratio	Replacement Caliper Inches Required
Mesquite	7.0 inches	0.5:1 (1/2 caliper inch per caliper inch)	3.5 inches
Hackberry	3.0 inches	N/A (non-protected tree)	0.0 inches
Cedar elm	12.0 inches	1.0:1 (1 caliper inch per caliper inch)	12.0 inches
Pecan	18.0 inches	2: 1 (1 caliper inches per caliper inch)	36.0 inches
Hackberry	4.0 inches	N/A (non-protected tree)	0.0 inches
Cottonwood	6.5 inches	0.5:1 (1/2 caliper inch per caliper inch)	3.25 inches
<b>Subtotal</b>	<b>50.5 inches</b>		<b>54.75 inches</b>

(Ordinance 6773 adopted 5/19/15; Ordinance 7107, sec. 74, adopted 12/3/19)

#### **Section 4.59 Protection of Preserved Trees**

(A) Identification of Trees to Be Removed. Trees that are proposed for removal must be flagged or otherwise identified in order to differentiate those trees from preserved trees prior to commencement of development or redevelopment activity.

(B) Protection Measures for Trees to Be Preserved. The critical root zone of all preserved trees must be surrounded to create an area of non-encroachment by placement of appropriate protective fencing around the drip line of the tree during site preparation and construction. The original natural grade around the tree inside the drip line must not be disturbed in any way. The area within the protective fencing must not be used for parking vehicles or equipment, for materials storage, or for chemical wash-out areas.

(C) Protection Mandatory for Preserved Trees. It is unlawful to do anything to, or near, a preserved tree that would likely, either immediately or over time, cause the tree to die, including severe pruning, trunk or bark damage, burning or intense heat, the introduction of toxic gaseous or liquid substance to the ground under the tree's drip line or to the air around the tree or to the tree itself, or any other similar harmful act.

(Ordinance 6773 adopted 5/19/15)

#### **Section 4.60 Relationship of Tree Preservation to Other Requirements**

(A) Credit for Preserved and Transplanted Trees in Article 3 and Article 4.

a. Credit for transplanted trees.

- i. Healthy protected trees less than six inches (6") in DBH qualify for one inch (1") of replacement credit for each inch of the transplanted tree.
- ii. Healthy protected trees between six inches (6") and up to 12 inches (12") in DBH qualify for two inch (2") replacement credit for each inch of the transplanted tree.
- iii. Healthy protected trees between 12 inches (12") and up to 24 inches (24") in DBH qualify for three-inch (3") replacement credit for each inch of the transplanted tree.
- iv. Health protected trees 24 inches (24") or more in diameter qualify for five-inch (5") replacement credit for each inch of the transplanted tree.

b. Credit for preserved trees.

- i. A credit against mitigation shall be authorized for the preservation of any tree provided that all of the following apply:
  1. Said tree to be preserved is a minimum of six inch (6") DBH and is listed as a Class 2 tree.
  2. Said tree to be preserved is located in an exempted area or is otherwise free from mitigation requirements

3. Said tree is protected from future removal, destruction or critical alteration by the establishment of protective covenants, easements, or agreements.
  4. Having met the following the following credits would apply:
    - a. 6" to 11" equal a 1:1 mitigation
    - b. 12"-17" equal a 2:1 mitigation
    - c. 18" and great equal a 3:1 mitigation
  - ii. Subsequent removal, damage, or critical alteration of any tree used for credit as identified above shall require mitigation replacement in accordance with this ordinance.
  - iii. If any Protected and/or Replacement Tree(s) die within two (2) years of initial planting or issuance of Certificate of Occupancy and is brought to the attention of the Director of designee, the original permit application shall be subject to the same replacement fee as for the Protected Tree.
- c.

(B) Replacement trees for a single-family, duplex, or townhouse residential development project must be placed within common areas that are owned and maintained by a homeowners' association (HOA), and may not count as the trees that are required on each residential lot per Sections 4.37(A) and 4.37(B) in Article 3 of this Chapter 4.

(C) Credit for Preserving Existing Tree-Lines Adjacent to Residential Districts. A person, property owner, or developer, must comply with the following provisions related to existing tree-lines adjacent to residential districts:

- (a) A minimum fifteen-foot non-disturb zone is required along any side or rear perimeter of a development or redevelopment site, regardless of the type of development or redevelopment, that is adjacent to a residential zoning district if any existing protected tree(s) exists within such area.
- (b) Existing protected trees that are located within a non-disturb zone must be protected and preserved; they will be given additional credit at a rate of one hundred and fifty percent of their caliper size (for example, a preserved 9" caliper tree, which would normally get a credit for one large canopy tree per Table 4-8, will be considered to be a 13.5" caliper tree, which would receive credits for two large canopy trees).

(Ordinance 6773 adopted 5/19/15)

#### Section 4.61 Administrative Approval of Alternative Compliance

Request for Alternative Compliance. A request for alternative compliance may be submitted in accordance with [Article 1, Division 2](#) of this Chapter 4. The Planning Director may, ~~by entering into a development agreement with the applicant,~~ approve the following, but only upon a finding the proposed alternative is; (i) consistent with the purpose and intent of this Article 4, as applicable; and (ii) promotes the public health, safety, morals, or general welfare:

(A) For a site where trees are numerous and where areas of such trees are predominately left undisturbed by development, the Planning Director, or his/her designee may approve an appropriate sampling method (based upon a reasonable sampling inventory of at least twenty-five percent of all “typical” areas of tree cover in such non-disturb zones, as may be approved by the Planning Director, or his/her designee) for the Tree Inventory.

(B) For a perimeter tree zone (as described in Section 4.51), the Planning Director may approve removal of up to fifty percent of the protected trees within the zone upon a finding that the trees are located too close together, they are too close to a property line so that they prevent placement of a fence or screening wall (as applicable) along that property line, they are not healthy enough to survive for a reasonable period of time, they may cause harm to an adjacent property due to leaning or other anomaly, or some other circumstance exists which necessitates their removal.

(C) If, due to the size, shape, or topography of the intended development site, it is determined by the Planning Director, or his/her designee that a Tree Management Plan for the site is unworkable (or not necessary), the Planning Director, or his/her designee may approve a Tree Management Plan that provides for the mitigation of protected trees within the City of Garland through:

~~(1) The planting of replacement trees at an off-site location; or~~

~~(2)~~ (1) The payment to a City Reforestation and Tree Management Fund of an amount equal to one hundred percent of the cost of a replacement tree(s). This fee, in lieu of tree replacement, is based on the cost of three-inch caliper trees, totaling the mitigation caliper inches required, moved to and installed on the site. The fee is one hundred and fifty dollars per diameter inch.

(D) In order to preserve the sizes and species of significant trees that are located within a proposed parking area, the Planning Director, or his/her designee may approve a reduction, of not more than ten percent, of the number of required parking spaces for a site, provided the applicant demonstrates adequate parking through “best practices” industry parking information.

~~(E) Development agreement required. The Planning Director may only approve a request for alternative compliance with the provisions of this Article 4 by entering into a development agreement with the applicant. The development agreement may include matters outside of this Article 4.~~

(Ordinance 6773 adopted 5/19/15; Ordinance 7079, sec. 36, adopted 8/20/19)

PET STORE: A retail establishment offering small animals for sale (no livestock) where all creatures are housed within the building, and the sale of pet foods and supplies. May include ~~pet grooming salon, indoor pet care/play/boarding and/or~~ small animal veterinary services as accessory use(s). **However, a retail establishment offering dogs and/or cats for sale is a prohibited land use.**



**GARLAND  
CITY COUNCIL ITEM SUMMARY SHEET**

**City Council Work Session Agenda**

**4. b.**

**Meeting Date:** January 9, 2023

**Item Title:** Audit Committee Report

**Submitted By:** Jed Johnson, City Auditor

---

**Summary of Request/Problem**

Council Member Robert Smith, Chair of the Internal Audit Committee, will provide a committee report on the following items:

- Alarm Permitting Program Audit
- Take-Home Vehicles Audit
- FY/2023 Audit Plan

**Recommendation/Action Requested and Justification**

Council discussion.

---



**GARLAND  
CITY COUNCIL ITEM SUMMARY SHEET**

**City Council Work Session Agenda**

**4. c.**

**Meeting Date:** January 9, 2023

**Item Title:** Las Brisas Small Area Plan

**Submitted By:** Scott Bollinger, Neighborhood Resource Manager

---

**Summary of Request/Problem**

The Garland Foundation for Development acquired the Las Brisas Residence Club in December 2021, with demolition complete in September 2022. The City of Garland secured the services of Kimley-Horn to analyze the site and surrounding neighborhood, engage with nearby residents, and create a scenario-based small area plan.

**Recommendation/Action Requested and Justification**

The Neighborhood Vitality Department and the City's consultant, Kimley-Horn will present Council with options for the future redevelopment of the former Las Brisas site for City Council consideration, and be available to answer any questions about the small area plan presented.

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**Attachments**

1002 Marion Small Area Plan

Las Brisas Presentation

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# LAS BRISAS SMALL AREA PLAN

CITY OF GARLAND, TEXAS

Adopted on XX of XXXXXXX, 2022

**Project Address:**

1002 Marion Drive  
Garland, TX 75042

*Created by the City of Garland in  
partnership with Kimley-Horn and  
Associates.*

**Kimley»Horn**

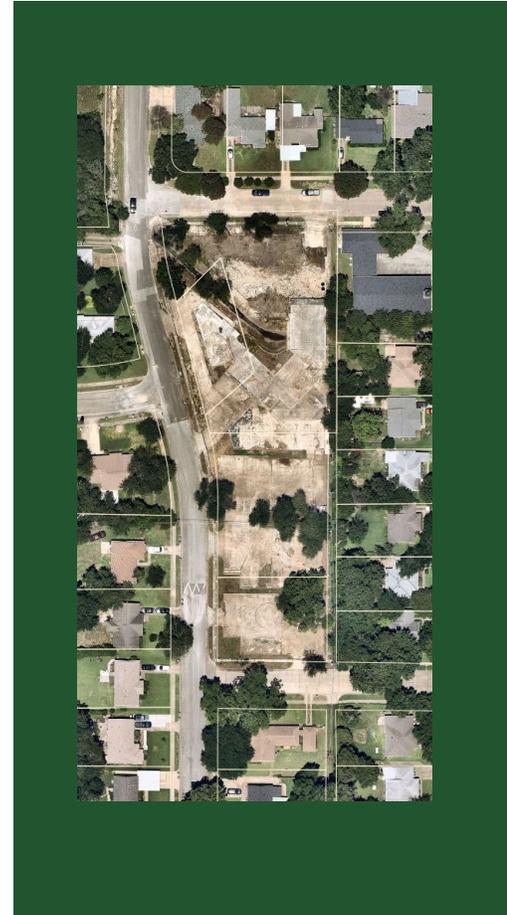


**GARLAND**

TEXAS MADE HERE

# LAS BRISAS SMALL AREA PLAN

1002 MARION DRIVE  
GARLAND, TX 75042



GARLAND  
TEXAS MADE HERE

[www.GarlandTX.gov](http://www.GarlandTX.gov)

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# CHAPTER 1

## INTRODUCTION

This chapter introduces the Las Brisas Small Area Plan project. The chapter includes a note written by Councilman Robert Vera and a brief overview of the project process and site location.



**ROBERT VERA**  
District 6  
Garland City Council

**NOTE FROM COUNCIL MEMBER ROBERT VERA**

The City of Garland is excited to present the Small Area Plan for the Las Brisas property. This property has an opportunity to be a unique community asset for the surrounding neighborhood, and this plan’s vision will help create

a reality that is backed by community support. Thank you to all who participated in this planning process, either by taking the online survey or attending a local event. Together we have envisioned a bright future for the Las Brisas property.

**ROBERT VERA**

# PROJECT APPROACH



The Garland Las Brisas Small Area Plan was initiated by the City of Garland Neighborhood Vitality Department in February 2022. The City retained Kimley-Horn to study several different potential redevelopment strategies for this property. The study area contains four city-owned parcels located in the Crest Ridge Estates/Garland Groves neighborhood. The project site is located in central Garland just southwest of Downtown. The site is bound by three key streets, Resistol Road to the north, Marion Drive to the west, and Inwood Boulevard to the south. To the east, the site borders six single-family detached



residences and the International Christian Assembly church building.

Through this planning process, the City of Garland and Kimley-Horn collaborated with key stakeholders, including adjacent residents, local elected and appointed officials, and surrounding business and property owners to create a unified vision for the future of the Las Brisas property. This document will summarize the planning process, including the demographic and market analysis, the public engagement methods used, and the strategic priorities that were established for the vision of the area.



***Las Brisas Site Map***

# CHAPTER 2

## PLAN FOUNDATIONS

This chapter provides context on the site's location and gives an overview of previous plans and studies that were completed prior to this assessment.

Park -  
Shade  
Rebuild efficiency  
apartments / apartment

walking path  
or trails ✓  
cement  
✓ Commun

Kids Park  
with shade  
Bike Lanes

Botanical Garden ✓  
Senior center

Annexed  
Once a month  
Food Truck  
visits? ✓

Community  
GARDEN

Pool  
Pool



# STUDY AREA

The purpose of the Las Brisas Small Area Plan is to create three alternative design concepts that will provide the City of Garland with direction when proceeding with redevelopment of the site. The Las Brisas study area is located just southwest of Downtown Garland and is located at 1002 Marion Drive, Garland, TX 75042.

In total, the study area consists of four parcels that are currently owned by the Garland Foundation for Economic Development. The large parcel on the north was once home to the Las Brisas Residents Club (formerly the Garland Clinic and Hospital), which is where this study retrieved its name.

The Las Brisas study area is located in the heart of a historic Downtown Garland neighborhood, with homes surrounding the site dating back to the early 1940s. 1002 Marion Drive is located about a quarter mile to the west from S Garland Avenue and about a third of a mile south of Forest Lane. To the east of S Garland Avenue lies Garland's Central Park, which is a regional park facility. However, S Garland Avenue is

a large, six-lane arterial that presents a large pedestrian barrier for residents in the neighborhood to the west of this road that creates an unsafe crossing area, which makes it difficult for these residents to reach the park on foot. Additionally, another significant site influencer is the Resistol Hat Company, located to the northwest of the site, where workers often use Resistol Road and Marion Drive to reach their workplace destination.

## LAS BRISAS HISTORY

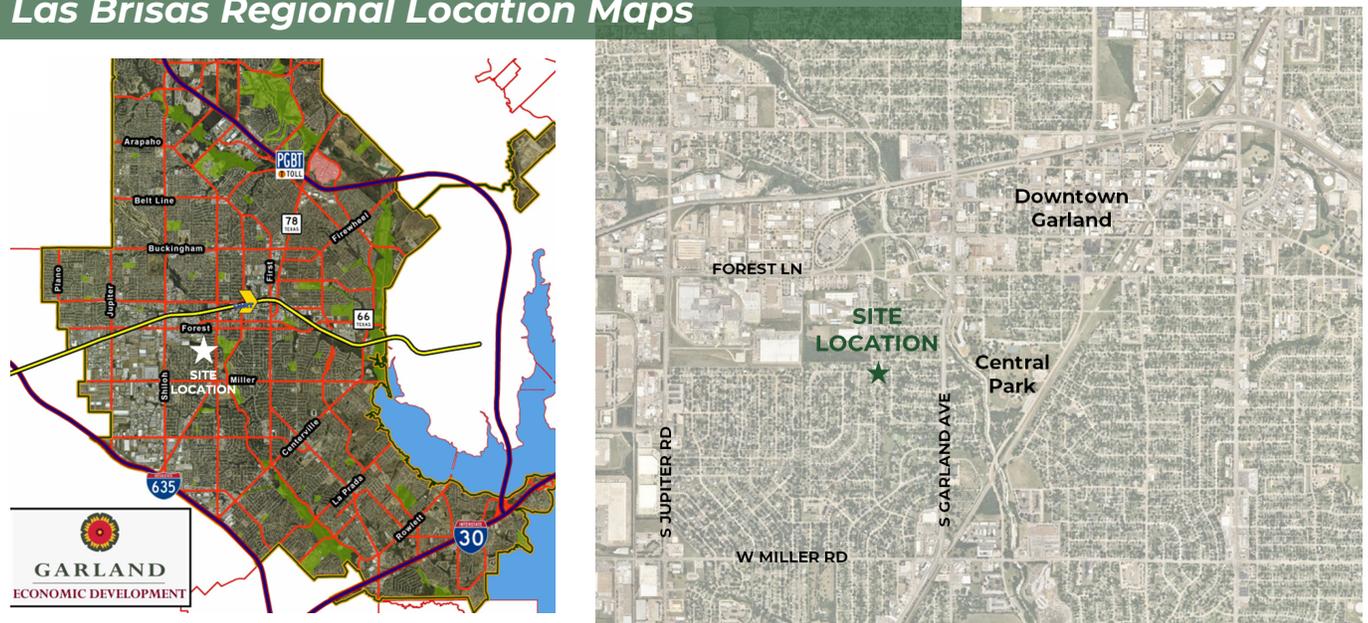
*The Las Brisas site contains a rich history. The former building that was once located on this site was once home to the Garland Clinic and Hospital (which was renamed to the Las Brisas Residence Club). The Garland Clinic and Hospital was opened in 1954 by Dr. Robert E. Speegle and was the first hospital to open in the City of Garland. The facility housed an emergency room, delivery room, x-ray facility, surgery facility, laboratory, and 11 beds. This facility offered specialists and City of Garland residents their first alternative to a hospital located in Dallas.*

*Following its use as the Garland Clinic and Hospital, the Las Brisas Residence Club then operated the building located on this site. The organization offered assisted living care facilities for the elderly. Today, the building has been demolished.*

### Las Brisas Site Location Map



### Las Brisas Regional Location Maps



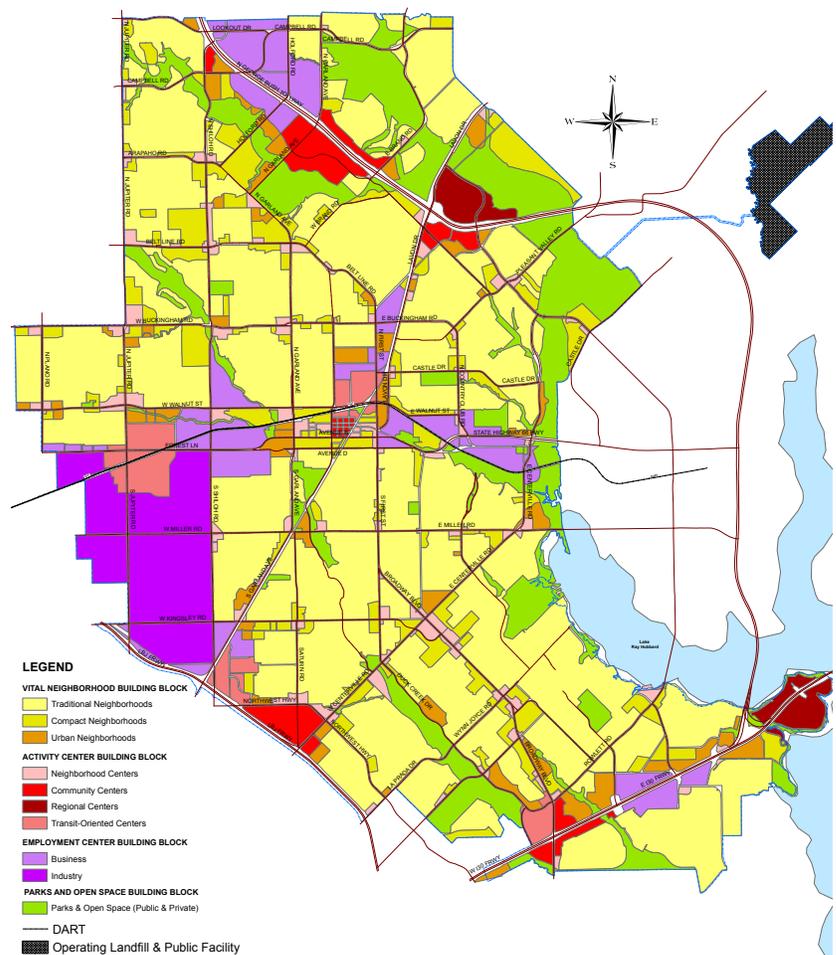
# PREVIOUS PLANS AND STUDIES

Several previous plans and studies were reviewed to further understand the context of the Las Brisas site. Plans that were reviewed included the *Envision Garland Comprehensive Plan*, the *Garland Trails and Bikeways Master Plan*, the *Garland Zoning Map*, and more. The sections below describe the key takeaways from each plan that was reviewed.

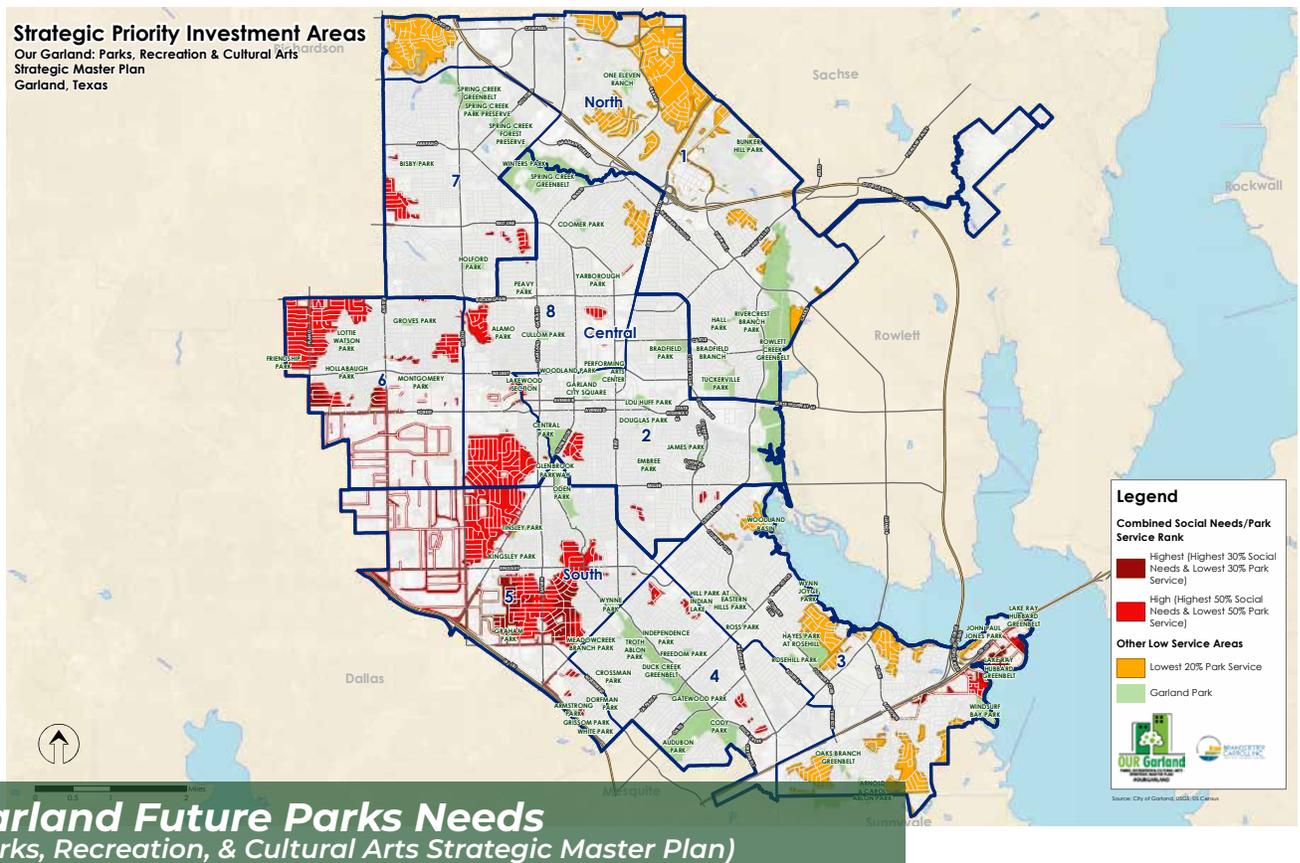
- **Future Land Use:**

According to the *Envision Garland Comprehensive Plan*, the Las Brisas property is designated as a “Traditional Neighborhood” on the Future Land Use Plan. Traditional Neighborhoods are currently found throughout Garland and provide areas for low to moderate density single-family detached residential housing. Traditional Neighborhoods also accommodate convenience retail (goods and services), office space, and public services.

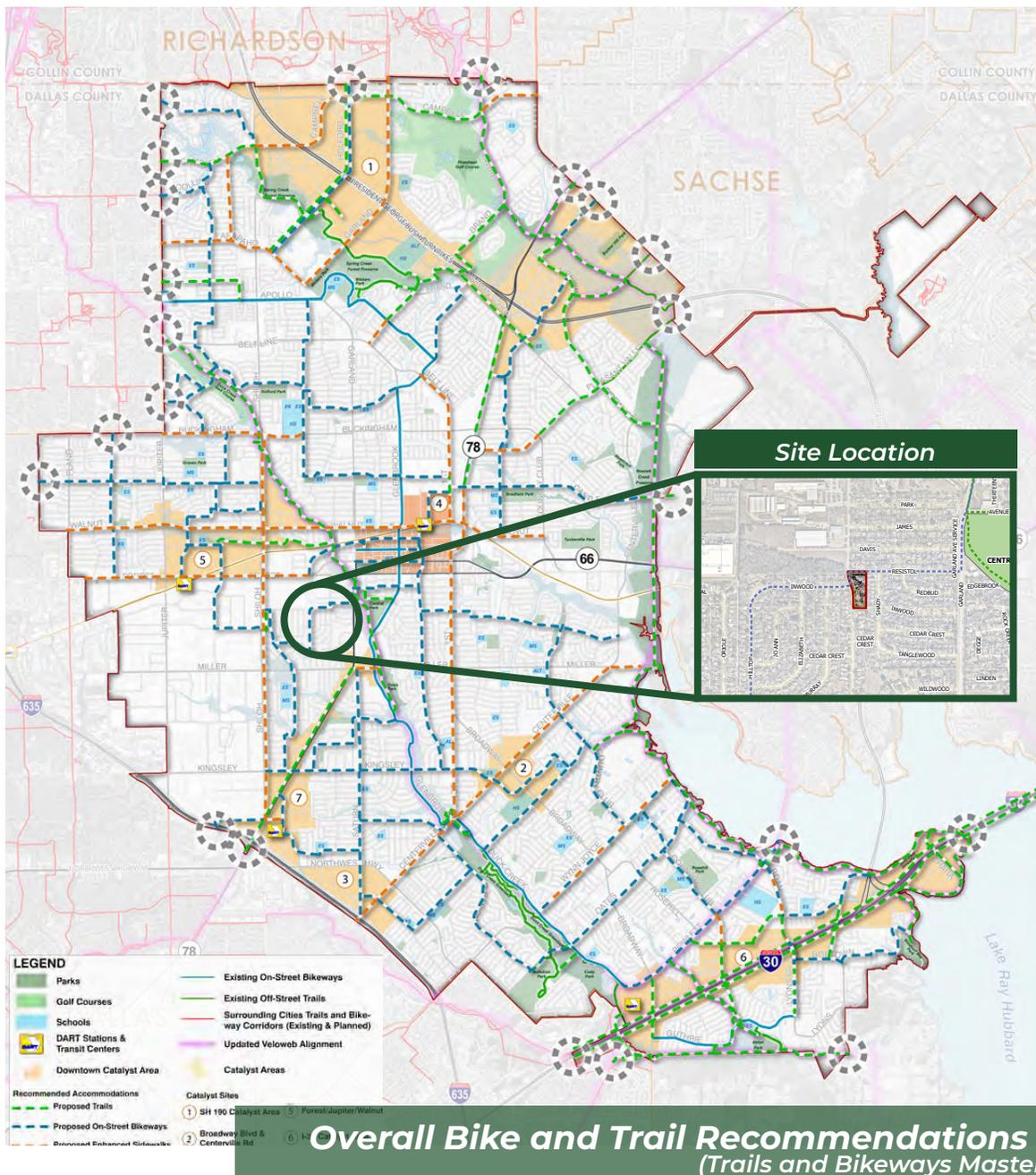
## Garland Future Land Use Plan



- Development Intensity:** The Traditional Neighborhood development type is primarily characterized as low density single-family. Non-residential sites within this category are typically up three acres in size.
- Zoning:** The site is currently zoned Mixed District. Land uses are flexible and can contain a combination of residential and non-residential uses.
- Future Park Needs:** The *Garland Parks, Recreation, and Cultural Arts Strategic Master Plan* identifies the Las Brisas property and the majority of the surrounding neighborhood, especially to the southwest, as an area of Garland that has some of the highest park needs. The plan classified these areas of the City where social needs are high, by measuring several community factors such as median income, single parent households, residents with disabilities, unemployment, poverty levels, and more. Additionally, existing park level of service was measured as well to identify areas of high need. The area near the Las Brisas property was classified as an area with “High” future park needs.



- Future Trails:** The *Garland Trails and Bikeways Master Plan* identifies Resistol Road (from S Garland Avenue to the road's terminus) and Inwood Boulevard/Hilltop Drive as a future alignment for an on-street bicycle facility. According to the plan, the recommended on-street bicycle treatment would be a shared-use lane. This treatment would install shared lane pavement marking and/or signage. It is recommended that this treatment be applied to residential streets with speed limits of 35 miles per hour or less.



# CHAPTER 3

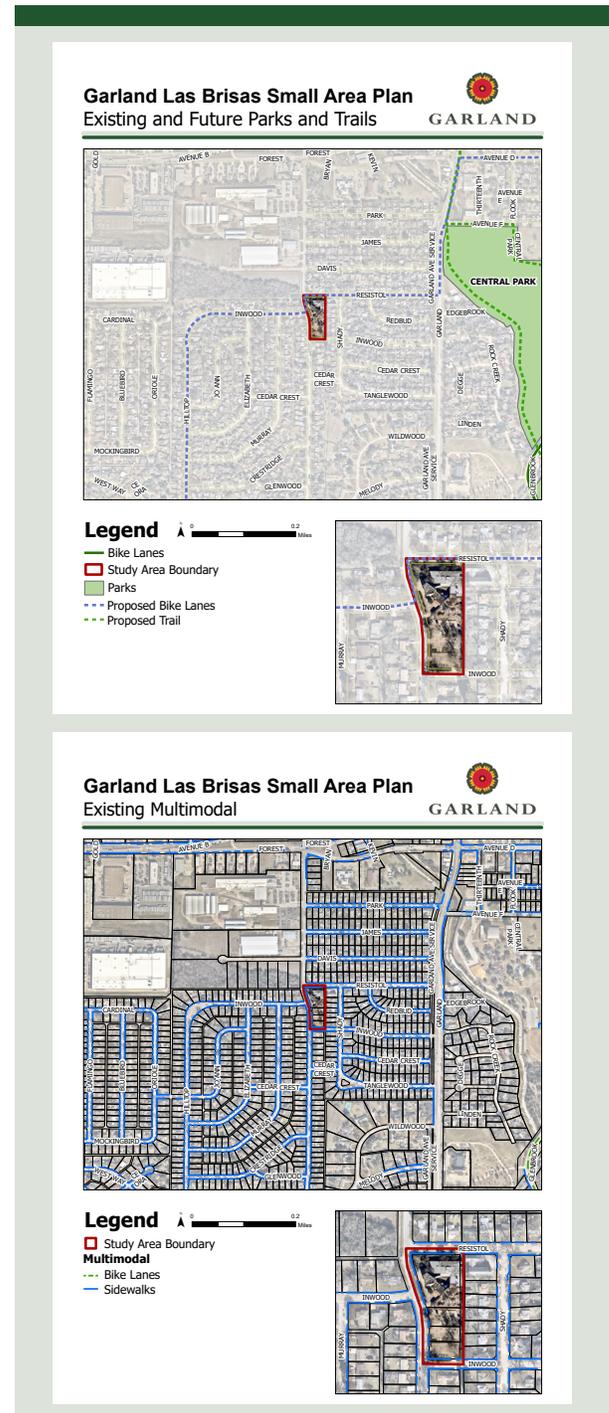
## COMMUNITY PROFILE

This chapter reviews the existing conditions of the property and identifies the surrounding neighborhood's demographic and economic statistics. Psychographics were also reviewed within a one-mile radius of the site. The chapter is concluded with a review of the public engagement effort conducted for this planning process.

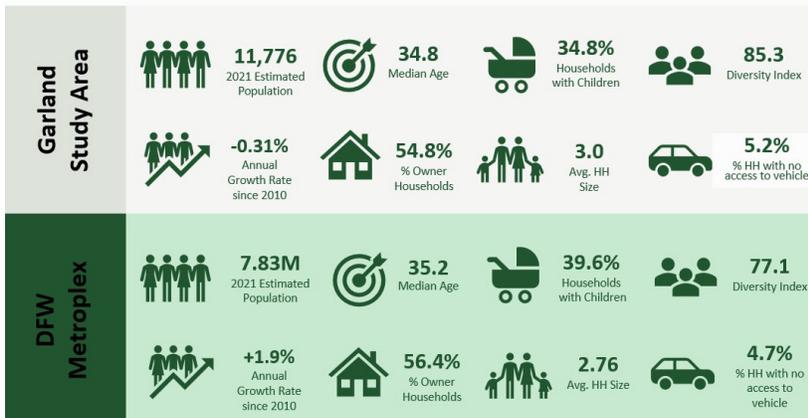
# EXISTING CONDITIONS

In an effort to establish a baseline understanding of the study area, a mapping exercise was conducted to capture the site's existing conditions. Detailed spatial information was gathered from several online resources and the City of Garland's GIS database. With this information, a series of existing conditions maps were created to detail the Las Brisas property's existing conditions for key infrastructure and assets.

Several City of Garland planned improvements were also incorporated into the existing conditions analysis such as the City's current and planned trail facilities. The full collection of existing conditions maps can be found in **Appendix A**.



# DEMOGRAPHIC SNAPSHOT



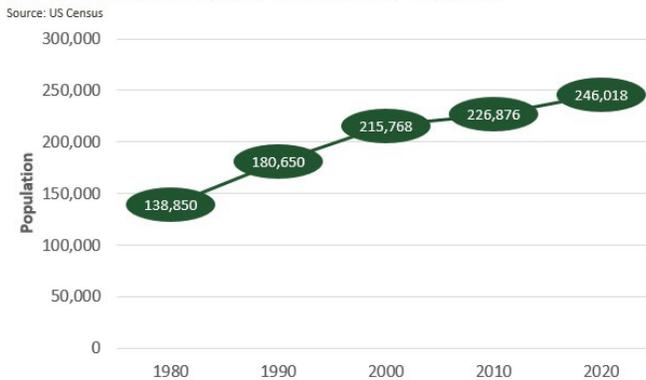
**Share of Residents by Race, Garland Study Area, 2021**

White	81.6 %
Black/African American	4.3 %
American Indian or Native Alaskan	1.0 %
Asian	1.4 %
Pacific Islander	0%
Other	10.1 %
Two or more races	1.7 %

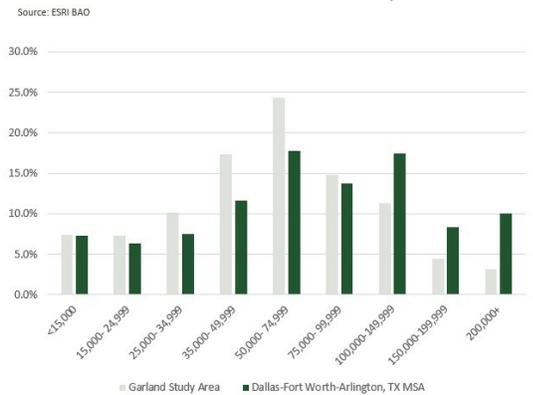
**ETHNICITY**

Hispanic or Latino	64.80%
Non-Hispanic or Latino	35.20%

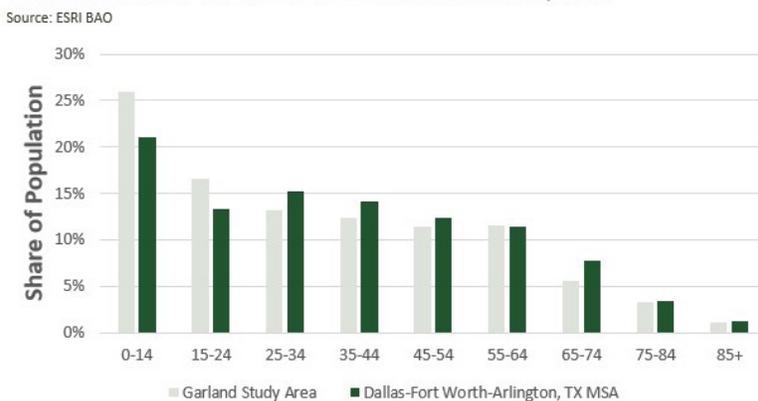
**POPULATION TRENDS, CITY OF GARLAND, 1980-2020**



**COMPARISON OF HOUSEHOLDS BY INCOME, 2021**



**COMPARISON OF SHARE OF POPULATION BY AGE, 2021**



**AVERAGE HOUSEHOLD SIZE, 2021**

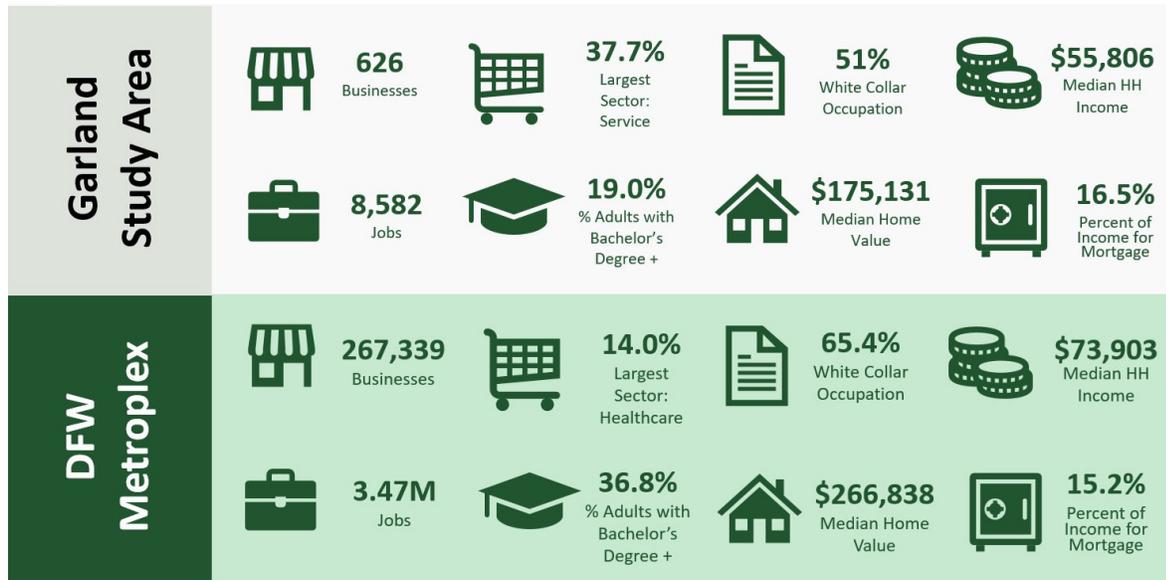


**MEDIAN HOUSEHOLD INCOME, 2021**



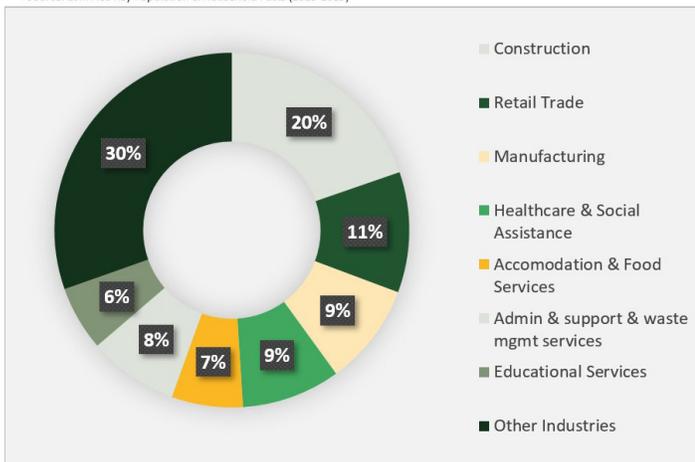
Analysis was performed on a 1-mile radius around the Las Brisas study area.

# ECONOMIC SNAPSHOT

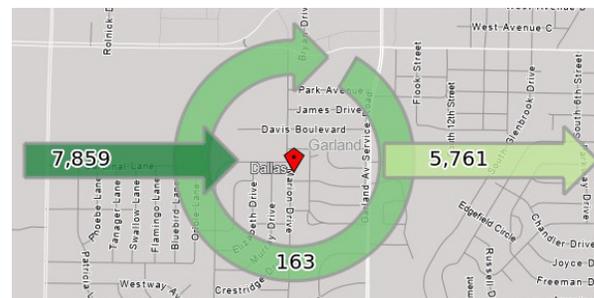


## SHARE OF GARLAND STUDY AREA JOBS BY INDUSTRY, 2021

Source: ESRI ACS Key Population & Household Facts (2015-2019)



## COMMUTING TRENDS



Job Counts by Distance/Direction in 2019

All Workers

N

NW NE

W E

SW SE

S

*Analysis was performed on a 1-mile radius around the Las Brisas study area.*

# PSYCHOGRAPHICS

The Environmental Systems Research Institute (ESRI), a nationally recognized information and data system software company, identifies different demographic categories for communities across the country, or “psychographic” tapestry groups. In addition to demographic information, psychographics also includes preferences on housing, spending, and labor force activities. These characteristics are utilized by developers and retailers to understand the character and lifestyle habits of communities. The neighborhoods surrounding the study area were analyzed and the top two psychographic groups are summarized below.

## FORGING OPPORTUNITY

32.5% of area households



- Young families with children or single parent with multiple generations living in one house.
- More than one in four households in poverty.
- Spending focused on necessities and few residents have investments.
- Employment concentrated in skilled trades.
- Primary focus is on family.

## RUSTBELT TRADITIONS

28.2% of area households



- A mix of married couple families and singles living in older developments of single-family homes.
- Workforce is primarily white collar with a higher concentration of skilled workers in manufacturing, retail trade, and healthcare.
- Located in dense urban fringe of metropolitan areas.
- Budget-aware shoppers that favor American-made products.

*Analysis was performed on a 1-mile radius around the Las Brisas study area.*

# PUBLIC ENGAGEMENT

---

Several public engagement efforts were made available for the public to weigh in on their preferred direction for the Las Brisas property, including the following:

- **Online Survey:** An online survey was created and analyzed for this project. The general public heavily desires a community park, which was a clear message heard in this planning effort and has been incorporated into the final recommendations. To see the full survey report, see **Appendix B.**
- **Charrette Workshops:** A two-day Charrette Workshop was held on June 9th and 10th to engage with the community and gather ideas for future development of the Las Brisas property. To see the full Charrette Workshop recap document, please see **Appendix C.**
- **Focus Groups:** A focus group was held with surrounding property owners to further dig into specific site amenity design for the proposed park on the Las Brisas property. To view the Focus Group workshop material, please view **Appendix D.**
- **Meetings with City Staff:** Periodic meetings with City of Garland staff were held to coordinate project efforts and to gain valuable City insight on the property.

The overwhelming majority of the feedback heard through the engagement phase made it very clear that the surrounding residents would like to see a park developed on the Las Brisas property. The next page provides several other highlights heard through the public engagement process.

# PUBLIC ENGAGEMENT HIGHLIGHTS

## SWOT Analysis

### Strengths

- The creek
- Great site location
- Mature trees in the area
- Located in a great neighborhood

### Weaknesses

- Needs aesthetic improvements
- Drainage issues
- Roads surrounding the site in need of upgrades/traffic calming
- Poor pedestrian access

### Opportunities

- Park development for community
- Walking paths and trails
- Playground for kids
- Shade structures and other amenities
- Creek redevelopment

### Threats

- Flooding and drainage issues with the creek
- Upkeep, maintenance, and sustained aesthetics of the creek
- Potential park overcrowding

## Charrette Workshop

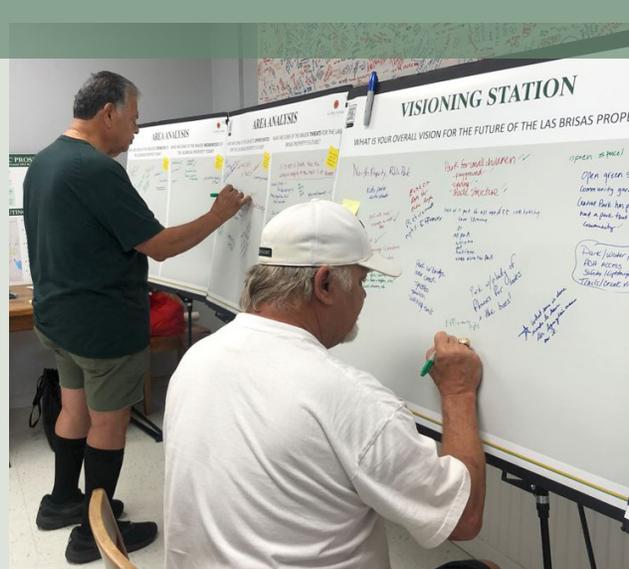


## Focus Group



# PUBLIC ENGAGEMENT HIGHLIGHTS

## Engagement Photos



## Desired Park Amenities

Many different types of park amenities are desired by the community for the proposed park on the Las Brisas property. A resonating quote from the engagement process highlight's the community's opinion about park amenities, "All of this is a winner." Several of the top desired park amenities are shown below.



**Walking Trails:** The park should have wide sidewalks or trails. Trails should be ADA accessible and hardscaped (concrete).



**Creek as a Park Asset:** The public would like the creek redeveloped and brought back to its natural state to become an asset for the future park.



**Public Plaza or Gathering Space/Pavilion:** The community would like to see an area for neighborhood gatherings.



**Playground:** Since there are many families with small children in the surrounding neighborhood, a playground is desired for the future park.



**Pedestrian Lighting:** Safety was a concern for the community, so the park should incorporate lighting throughout the site.



**Street Furniture:** Other street furniture should be included in the park including benches, trash receptacles, pet waste stations, and street trees.

# CHAPTER 4

## SITE ANALYSIS

This chapter reviews the Las Brisas property's existing and future opportunities and constraints. These site considerations should be taken into account in all future development decisions in the study area.

# CREEK

On the Las Brisas property, a creek runs from east to west, then bends up to the northwest corner of the property. The creek poses significant barriers for the property, as the existing site is in poor condition due to continued erosion and consistent flooding. Because of these existing issues, four solutions are proposed to help creek visibility, aesthetics, and to improve access across the creek. Below are several indicators that were developed to help compare and contrast the four creek scenarios.

<b>Indicators:</b>	<b>Estimated Cost</b>	<b>Footprint</b>	<b>Water Feature Value</b>
<b>Indicator Range:</b>	\$ - \$\$\$\$	Low - High	Low - High
<b>Indicator Description:</b>	Provides a high-level overview of how much this creek redevelopment project would cost.	Describes how large the footprint of the proposed creek improvement will be.	Describes the aesthetic value, look, and character the creek improvement will provide the community.
<b>Creek Option 1: Culvert Expansion</b>	\$\$\$\$	Low	Low
<b>Creek Option 2: Simple Earthen Stream</b>	\$	Medium/High	Medium
<b>Creek Option 3: Grass Lined Channel with Constructed Pools</b>	\$\$\$	High	High
<b>Creek Option 4: Naturalized Stream</b>	\$\$	High	Medium

## Creek Option 1 - Culvert Expansion

Estimated Cost	Footprint	Water Feature Value
\$\$\$\$	Low	Low

The first option would redesign and expand the existing culvert on the site to redirect all water flow underground within the new culvert. This would increase usable park area. Several considerations to this option are listed below:

- The City of Garland would need to verify with the Army Corps of Engineers and Environmental that the creek is not within their jurisdiction.
- This option will more than likely lead to detention requirements and will trigger a detention study.
- This option may experience velocity and flow volume issues that could result in downstream erosion and increased peak flows.



- Replacing the culvert would require upsizing the existing culvert crossing to convey upstream flows. The approximate pricing listed below is based on TxDOT's average low bid prices for a three-month statewide average:
  - ◊ Approximately 3-6'x4' Reinforced Concrete Box: \$2,000/Linear Foot
  - ◊ Approximately 4-6'x3' Reinforced Concrete Box: \$3,100/Linear Foot

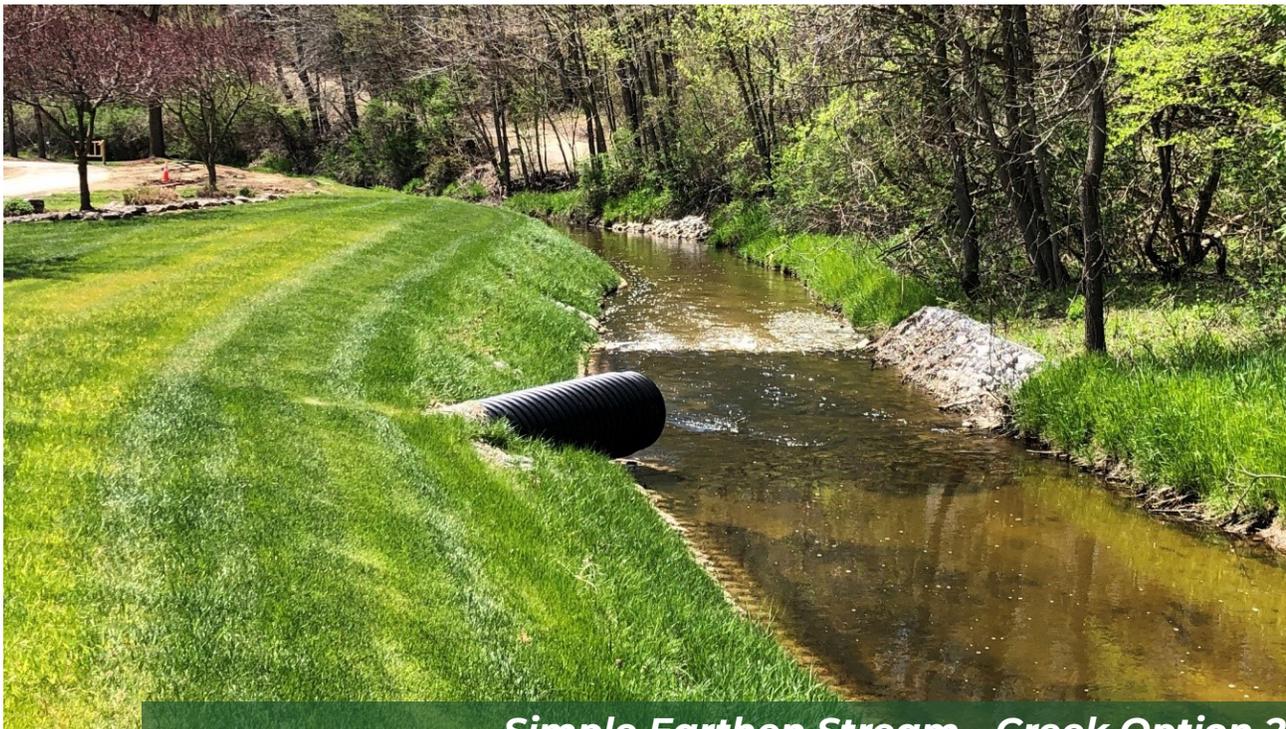
**Culvert Expansion - Creek Option 1**

## Creek Option 2 - Simple Earthen Stream

Estimated Cost	Footprint	Water Feature Value
\$	Medium/High	Medium

The second option would seek to remove the existing concrete culvert and add geotile “flexamat” for erosion control. Several considerations to this option are listed below:

- If this option were pursued, the creek should be graded at a 4:1 side slope. This is standard practice but requires a larger footprint for graded area.
- It is recommended that the creek beds be covered in short grass to enhance the creek’s aesthetics.
- This option would cost approximately \$400/Linear Foot.



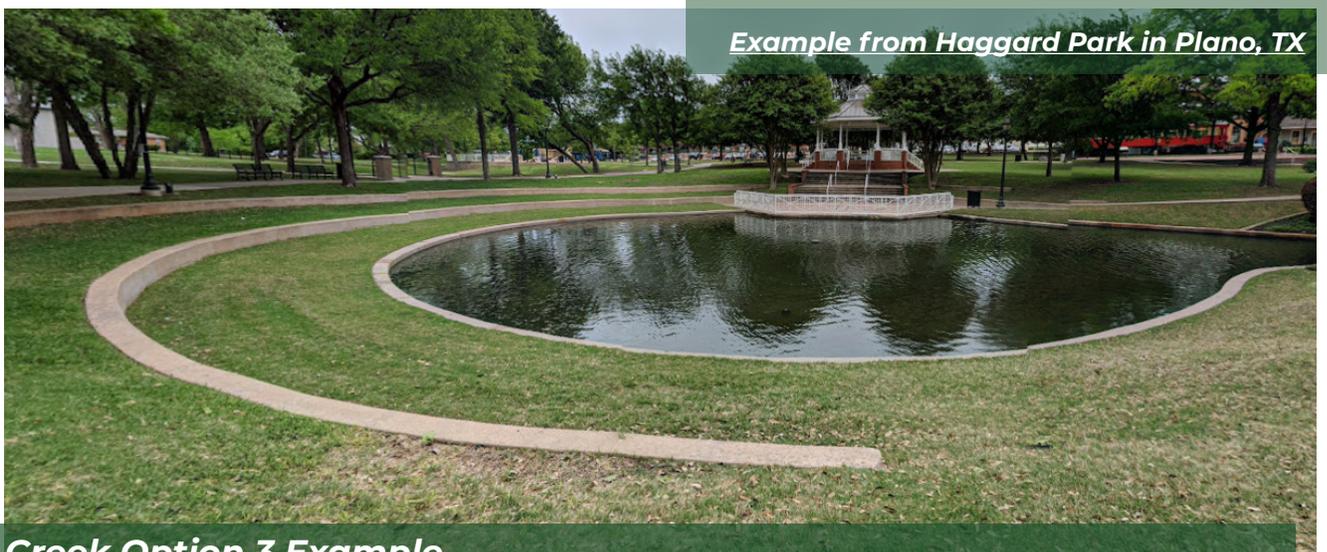
**Simple Earthen Stream - Creek Option 2**

## Creek Option 3 - Grass Lined Channel with Constructed Pools

Estimated Cost	Footprint	Water Feature Value
\$\$\$	High	High

Another design solution for this option would be to create a set of tiered walls, which could also make the creek a key park asset and also provide additional seating areas for the community to relax and enjoy the creek. Examples of these ideas are provided below. Several considerations for this design solution are presented below:

- This option will require a larger footprint and will modify the creek bed to have a graded series of tiered levels. Although this redesign requires a large footprint, much of the space is usable parkland where the public can sit and enjoy the afternoon (when the creek is not flooded).
- A drainage study would be required to quantify the amount of flow going through the creek. The design level would vary depending on the channel section selected.



**Creek Option 3 Example**

## Creek Option 4 - Naturalized Stream

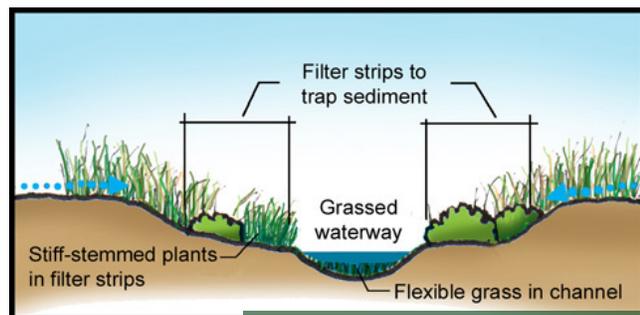
Estimated Cost	Footprint	Water Feature Value
\$\$	High	Medium



**Creek Option 4 Example**

The fourth recommendation includes naturalizing the stream by installing either natural or manmade riparian buffers to line the creek bed. Several considerations for this option are as follows:

- This option could include naturally tiered pools of wetland plants and stiff-stemmed plants in filter strips.
- This option will require a significantly larger footprint compared to Option 2 and will also be larger than Option 3.
- Geotile “flexamat” will also need to be installed in this option to control erosion.



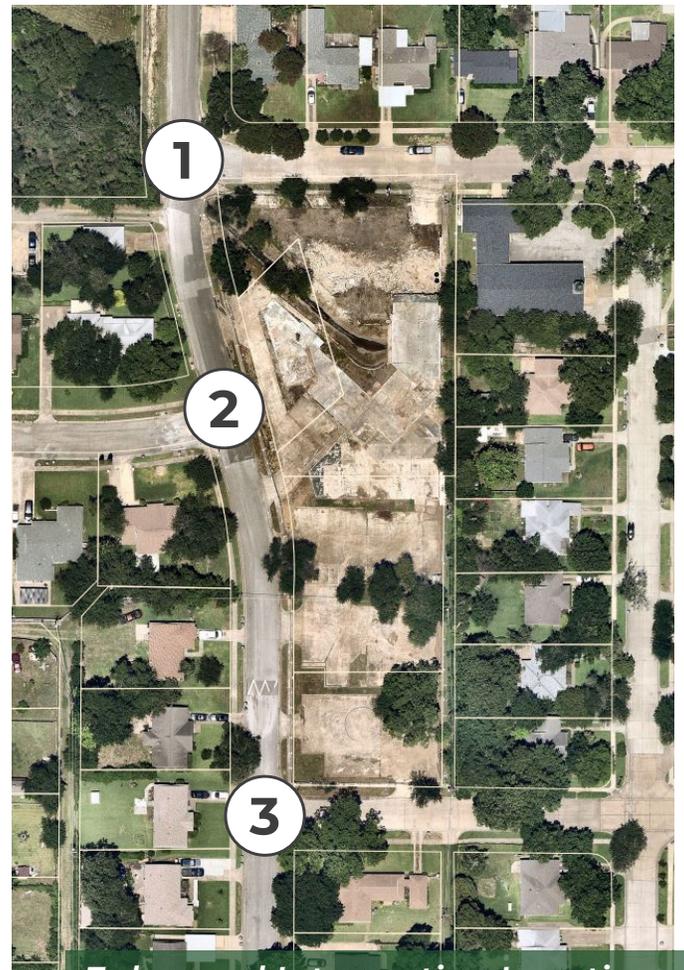
**Creek Option 4**

# ROADWAY NETWORK

During the public engagement process, high automobile speeds on the surrounding roads were commonly reported as a potential threat to the Las Brisas property. Since there is a break in the medians along S Garland Avenue at the intersection of Resistol Road, surrounding property owners noted that many employees who work at the Resistol Hat Company (located just northeast of the Las Brisas property) often route through Resistol Road to reach the factory. Because of this, special attention should be made to the surrounding street network if the property were to develop into a park.

It is recommended that the City of Garland should construct traffic calming measures along Resistol Road, such as speed bumps and textured/elevated crosswalks at key intersections. This will enhance pedestrian safety for all who visit the area and will slow automobile traffic. Specifically, it is recommended that the City construct three enhanced intersections with brick pavers and raised/textured crosswalks at the following locations:

1. Intersection of Resistol Road and Marion Drive
2. North intersection of Inwood Boulevard and Marion Drive
3. South intersection of Inwood Boulevard and Marion Drive

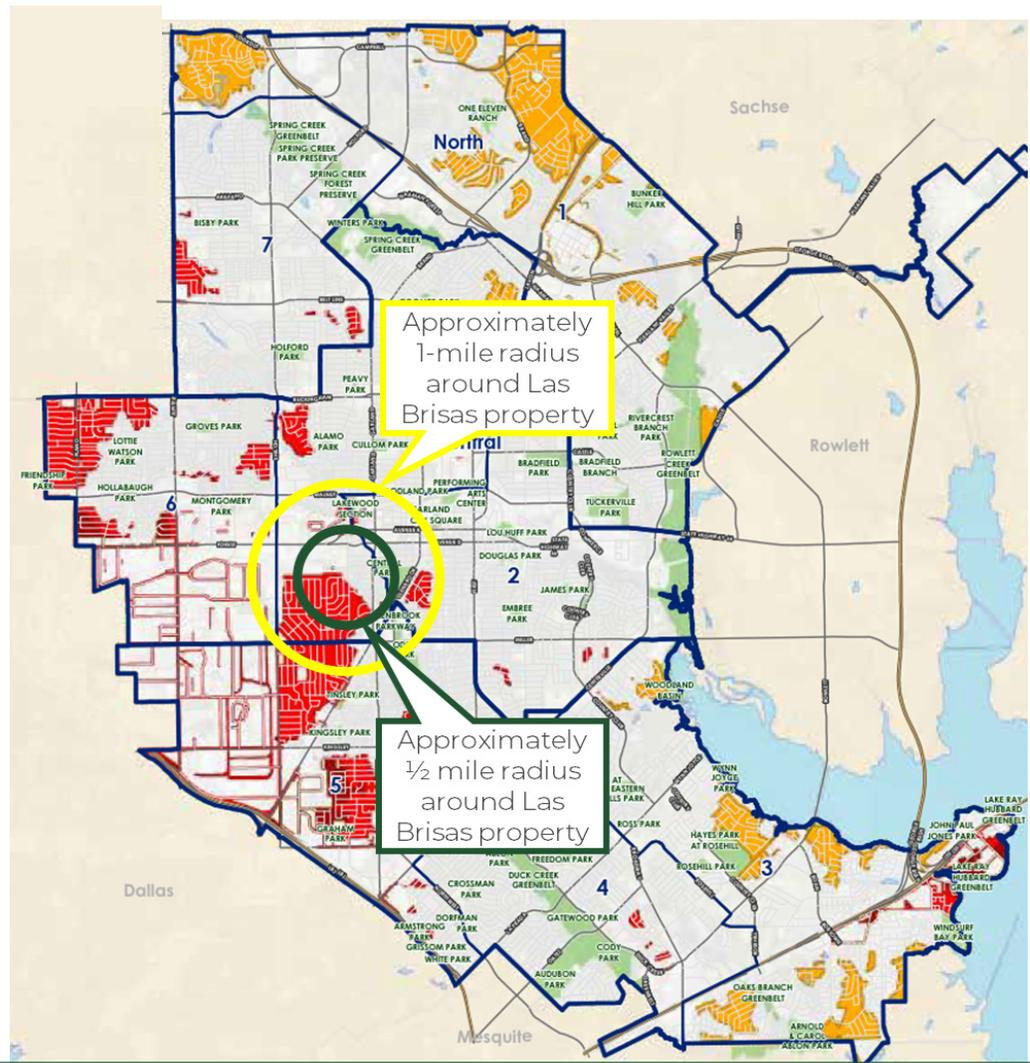


*Enhanced Intersection Locations*

# PARK NEEDS

Although the Las Brisas property is located fairly close to the City of Garland's Central Park, S Garland Avenue poses a significant pedestrian barrier to cross when coming from the neighborhood to the west. During the public engagement process, stakeholders agreed that a small neighborhood park to the west of S Garland Avenue is needed for the community. In addition to community support, the *Garland Parks, Recreation, and Cultural Arts Strategic Master Plan* identifies the area ripe for future park development.

A future park would serve neighborhoods that have “high” park needs based on existing park level of service and other social factors. Please see the *Our Garland Parks, Recreation, and Cultural Arts Strategic Master Plan* for more information about park needs.



*Half-Mile and Mile Radius Around Las Brisas Property  
(Parks, Recreation, & Cultural Arts Strategic Master Plan)*

# SURROUNDING POPULATIONS

The Williams Elementary School lies within a half mile of the Las Brisas property. Additionally, within a mile of the site is the Sam Houston Middle School and the Parkcrest Elementary School. Because of the site's proximity to the three schools, a variety of age groups are present in the surrounding neighborhood. The public expressed interest in many different site amenities and activities.

Since at least a portion of the site will most likely be developed into a park, the public encouraged diverse park amenities for all age groups, such as walking trails for adults, playgrounds for children, and potentially courts or fields for teens.



*Surrounding Key Destinations*

# INCORPORATING LOCAL GARLAND HISTORY

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*Garland Clinic and Hospital Historic Photo*

Stakeholders indicated the desire to incorporate historic tributes to the site's rich history. Many people thought it would be a great idea to name a future park development after one of the Garland Clinic and Hospital's infamous doctors, Dr. Speegle. The community would like to see history live through the park with public art installations and/or a plaque dedicated to the hospital and Dr. Speegle.

# CHAPTER 5

## DEVELOPMENT FRAMEWORK

This chapter introduces the strategic priority goals for future development of the Las Brisas property. The identified strategic goals discuss walkability, trails and open space, placemaking, partnerships, infrastructure, safety, parking, and equity.



# INTRODUCTION

Throughout the public engagement process, data was continually collected that helped shape the vision and strategic direction for the plan. Development scenarios were then crafted on that future vision which helped establish appropriate, community-supported strategies for future growth. The following statement represents a collective vision for the future of the site.

## LAS BRISAS PROPERTY VISION STATEMENT

*The Las Brisas property serves as a neighborhood and community anchor for the area, by providing ease of access, increased safety, and neighborhood serving open space amenities for local residents, and will support a development pattern and character that is scaled to the surrounding single family residential neighborhood.*

# STRATEGIC PRIORITY GOALS

From the input that was gained through the planning process, several strategic priority goals emerged that help provide overall direction when making decisions on the future of the Las Brisas property. As they relate to the plan, these goals apply across any of the development scenarios as critical points of emphasis and consideration. A broad range of topics are covered in these goals when collectively applied and are intended to produce the desired outcome for the community. Below is a list of the key strategic priority goals that act as guiding principles to consider when implementing the plan.



## ***Walkability Strategy***

*Construct connections to the existing neighborhood's sidewalk network that accommodates and prioritizes pedestrian access to promote multimodal mobility.*

### ***Walkability Action Items***

- Ensure ADA standards are met in all new multimodal infrastructure projects.
- Encourage pedestrian safety through the construction of highly visible crosswalks with raised and textured enhancements.
- Install sidewalks along the perimeter of the site, and trails and paths throughout the park, linking programmed areas together.



## ***Equity Strategy***

*Provide activity areas for people of all age groups, backgrounds, and abilities.*

### ***Equity Action Items***

- Ensure the surrounding neighborhood's demographic makeup is incorporated into future design of the site, such as constructing a playground for children, providing walking trails that are ADA accessible, or creating a central gathering space in the form of a public plaza or pavilion.



## ***Trails and Open Space Strategy***

*Construct trail network connections within the site and to surrounding trail networks.*

### ***Trails and Open Space Action Items***

- Construct the trail network connection in accordance with the Trails and Bikeways Master Plan for the trail identified along Resistol Road and Inwood Boulevard.
- Consider upgrading the on-street shared-use lane treatment to a dedicated bicycle lane. Although the speed limit along Resistol Road is less than 35MPH, residents report frequent speeding along this roadway. Extra precaution should be made to accommodate high bicycle usage of the proposed on-street facility.
- Promote linkages to the proposed trail along S Garland Avenue, when constructed.
- Establish appropriately scaled neighborhood park and open space, where amenities are tailored to residents of all ages and abilities.



## ***Safety Strategy***

*Provide for pedestrian, park, and neighborhood safety through urban design elements and traffic calming measures.*

### ***Safety Action Items***

- Enhance crosswalks to the site's intersecting streets with textured and raised crossings to boost pedestrian visibility and to slow traffic.
- Provide a consistent level of lighting throughout the park and along the right-of-way, to ensure there are no dark areas of the park at night and enhance pedestrian safety.
- Utilize bulb-outs, textured paving or pavers, and elevated crosswalk tables to enhance pedestrian safety and slow vehicular traffic.
- To improve access to and from the park, install crosswalks at each intersection on both sides of the street.



## Partnership Strategy

*Encourage partnerships with local organizations, developers, and the public when implementing the vision for the Las Brisas property.*

### Partnerships Action Items

- Encourage continued dialogue with neighborhood to realize vision.
- Encourage partnerships with the site's future developer to continue the existing sidewalk network and enhanced crosswalks to intersecting streets.
- Partner with the Garland Cultural Arts Commission to incorporate historical elements into the overall theming of the site.
- Partner with Neighborhood Vitality on future placemaking and urban design elements.



## Drainage and Infrastructure Strategy

*Address drainage and flooding issues with the creek when the site is redeveloped.*

### Drainage and Infrastructure Action Items

- Redevelop drainage channel and creek bed as an amenity to the neighborhood park.
- Address flooding and drainage infrastructure issues throughout the site in conjunction with sidewalk and intersection improvements.
- When redeveloping the site, resolve drainage and flooding issues along the right-of way by installation of newly engineered storm water infrastructure.
- Redevelop the northwest corner of the park to bridge over the drainage channel and widen the sidewalk so that pedestrian flow is uninterrupted and continuous along the right-of way.
- Transition the drainage channel that bisects the site into a neighborhood amenity by cleaning and re-grading the channel and providing pedestrian and access across it in key locations, linking the north and south portions of the site together.



## ***Placemaking and Development Character Strategy***

*Incorporate placemaking and urban design elements that will encourage park usage and will help the site become a special place for the community.*

### ***Placemaking and Development Character Action Items***

- Construct public art, sculptures, and other historic markers in future development that incorporates the area's rich history as the site of the first hospital in the City of Garland. Additionally, pay tribute to the hospital's founder, Dr. Robert E. Speegle.
- Ensure at least a portion of the site's future development include a park to support the feedback heard through the public input process.
- If any form of housing is to be constructed on the site, ensure new development fits in with the existing character of the surrounding neighborhood.
- Provide programmed areas within the park for neighborhood residents to enjoy, including a picnic area, playground, and open space area.
- Ensure tree canopy is established that provides shade and character to the park and streetscape along the right-of way.



## ***Parking Strategy***

*Provide an adequate amount of parking that is appropriately scaled to the surrounding neighborhood.*

### ***Parking Action Items***

- Provide on street parking to accommodate neighborhood scaled parks.
- Construct angled parking in key locations for neighborhood park access. However, limit angled parking to less than 20 spaces to maximize park they area and to develop the site in an appropriate manner to the surrounding neighborhood character.

# CHAPTER 6

## DEVELOPMENT SCENARIO CONSIDERATIONS

This chapter summarizes the three proposed development scenarios that the City of Garland can consider when seeking to redevelop and renovate the site.

# INTRODUCTION

Through the planning process, it was determined to provide three viable, community-backed options for the future redevelopment of the site. Although the park was the preferred option among residents, community stakeholders and property ownership (GFD) supported a blend of redevelopment choices that incorporated parks along with single family residential. When redeveloping the site, it is recommended that each scenario be evaluated carefully to ensure the best outcome for the community. The following section details each scenario and the respective considerations each scenario presents.

<p><b>Scenario 1</b></p>	<p>Scenario 1 reimagines the Las Brisas property as a neighborhood park. The entire property would be redeveloped to support activities for all age groups and park users. The park would be designed to include both active and passive play spaces, and would feature a playground, open space, walking trails, and parking facilities on the south. The creek would be developed to more of a natural state with gradual slopes and rocks which will act as a natural barrier.</p>
<p><b>Scenario 2</b></p>	<p>Scenario 2 designates the top portion of the Las Brisas property as a neighborhood park and the south portion for single-family residential development. The proposed single-family residential development would consist of four homes that are approximately 1,200 square feet, which is slightly larger than the surrounding houses, which have an average square footage of approximately 1,000 square feet (per story). The proposed houses would be a mix of one and one and a half story structures, as designed.</p>
<p><b>Scenario 3</b></p>	<p>Scenario 3 is similar to Scenario 2, but instead of single-family housing, small-lot single family residential units or townhomes would be constructed. The creek would be gradually tiered to create more of an outdoor amphitheater feel, great for picnics and hanging out. The small lot single-family residential units would allow approximately 8 new dwelling units to be constructed on the south end of the property. They would be approximately 1,000 - 1,200 square feet (townhomes would be approximately 900 square feet) and would be two stories, as designed. These units are comparable to the surrounding neighborhood, which has an average house size of approximately 1,000 square feet. The units are anticipated to be owner-occupied.</p>

# SCENARIO 1: FULL PARK



*Proposed Park Concept Rendering*



***Proposed Park Concept Representative Imagery***

The full park scenario envisions the study area to be redeveloped as a community park. Due to its size and location, this park is intended to serve as a neighborhood amenity for all age groups and abilities. This scenario is conceptually programmed with a playground on the north, a picnic area and passive open space in the center, and recreational areas on the south. The creek that runs diagonal east to west through the site is regraded to a gentle slope and remains an amenitized feature of the park. A network of wide sidewalks and trails traverse the site, linking one programmed area to the next. A pedestrian bridge is incorporated on the east side to maintain access across the creek. To improve access for visitors, convenience on-street angled parking is located on the north and south sides of the park. Because safety is a key priority, several elements are incorporated to improve access, slow traffic, increase lighting, and generally make the park and streets as safe as possible for all residents.

## **Key Action Items for a Successful Scenario 1**



***Proposed Park Representative Imagery***

- Develop entire property as a park.
- Program recreational space for all age groups. Include at a minimum an area for small children through the installation of a playground, an area for adults to utilize walking trails and street furniture amenities such as benches and picnic tables, and an area for teens in the form of a small ball court or half-court facility.
- Continue to work with local property owners as a list of park amenities is finalized and a final park design is created.
- Hire and fund a park designer to detail the park's specific design and construction plans.
- Facilitate community programs in the park such as exercise classes, after school programming, or a park clean up event.
- Develop a detailed strategy for this neighborhood gathering space for neighborhood-sponsored events. via partnerships with local organizations.
- Plant at minimum 30 new street trees on the site. Follow Garland's approved

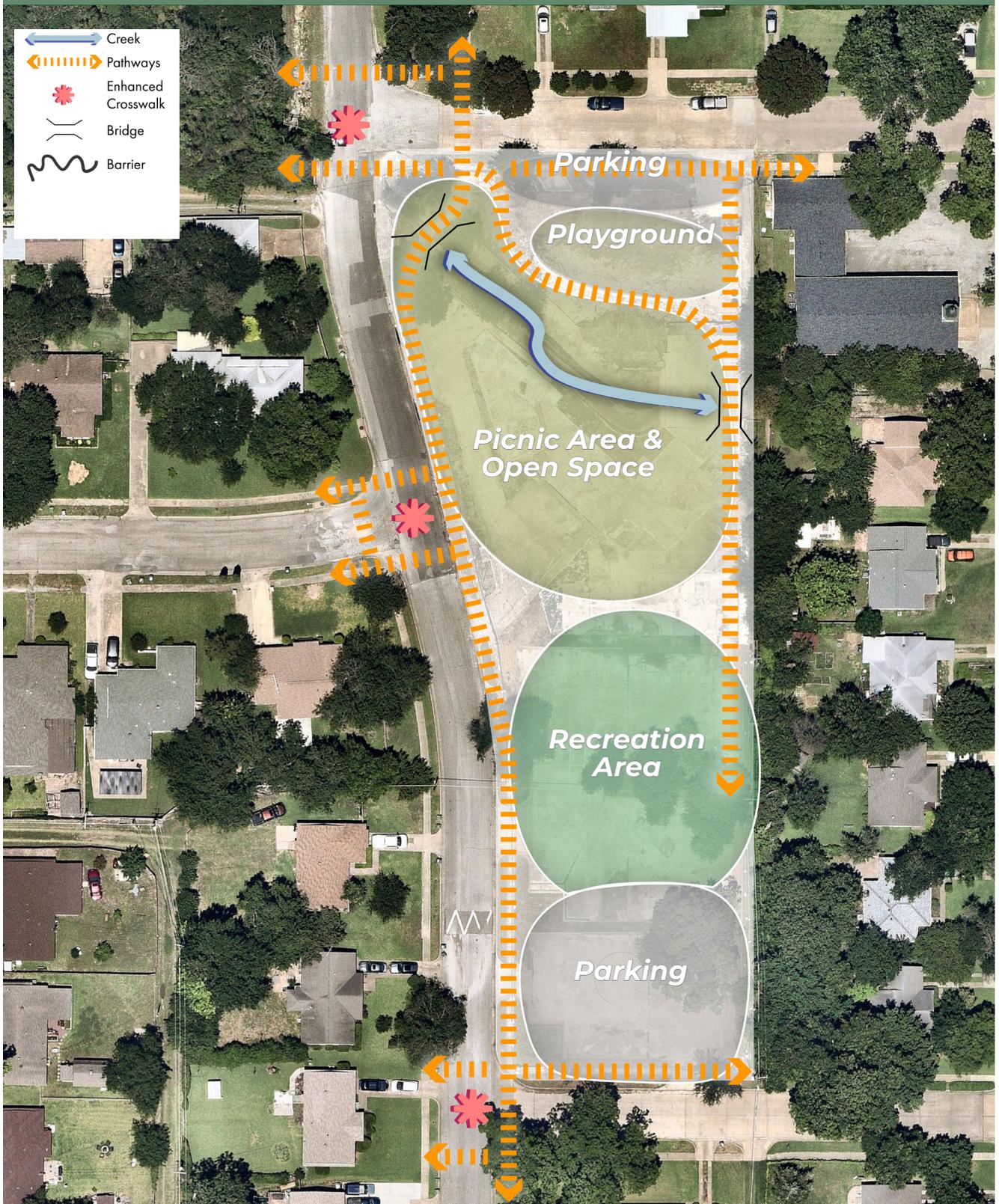
list of tree planters. Explore partnerships with local organizations to fund and plant the park's trees.

- Work with the City of Garland Cultural Arts Commission to identify key areas of the park where public art, sculptures, and other park art work can be incorporated.
- Incorporate the site's history into the park's design and public art efforts.
- Identify a way to pay tribute to the Garland Clinic and Hospital, as well as Dr. Speegle, by either creating a historical marker in the park, install a plaque, community sculpture, or statue representing this history, or dedicate the park by naming it in honor of Dr. Speegle.

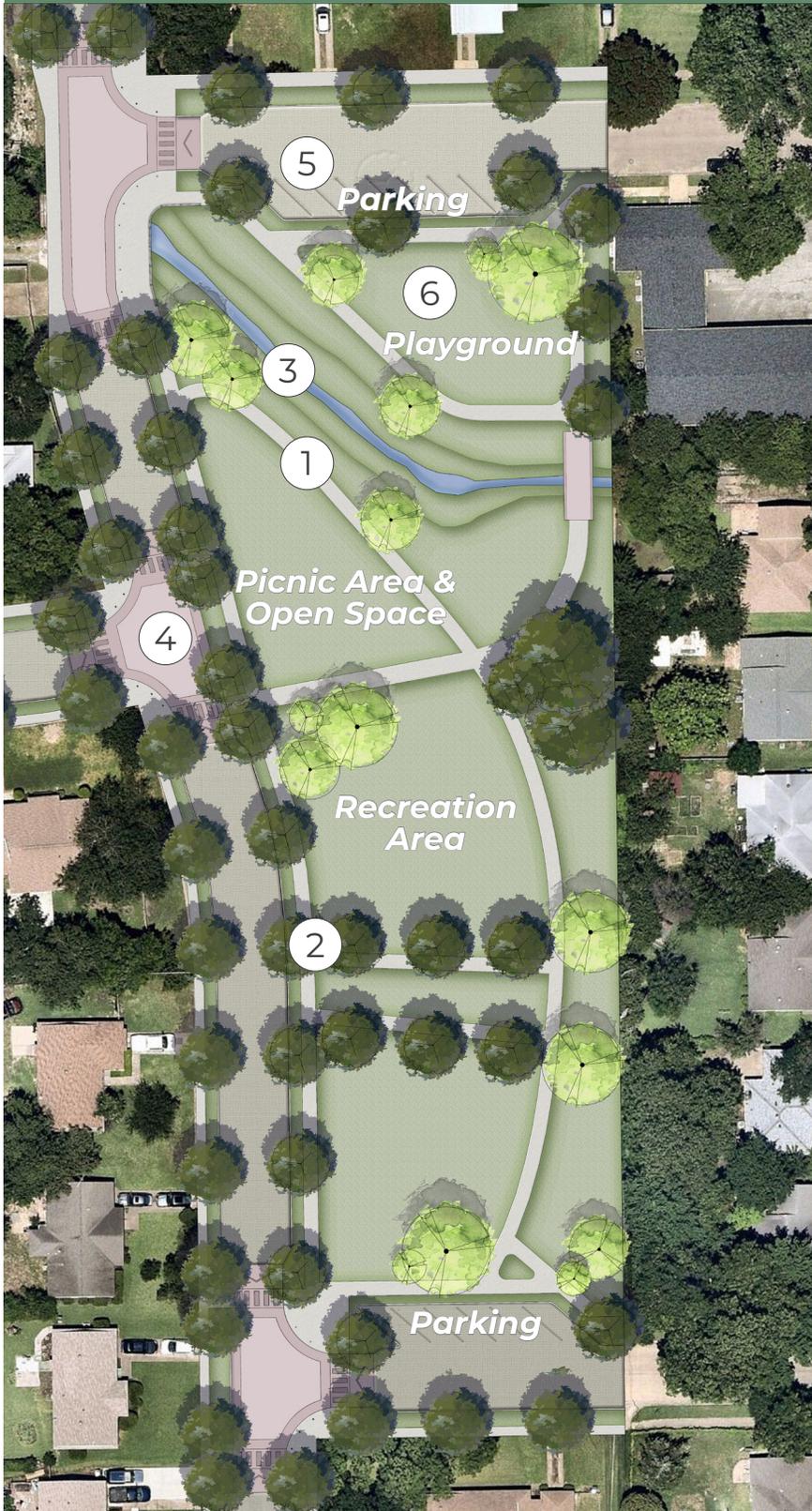


*Proposed Park Representative Imagery*

# Scenario 1 Diagram



## Scenario 1: Full Park Concept



### 1 Trails



### 2 Tree Canopy



### 3 Creek



### 4 Intersections



### 5 Parking



### 6 Playground



# SCENARIO 2: PARK/SINGLE FAMILY RESIDENTIAL



*Proposed Park/SF Residential Concept Rendering*



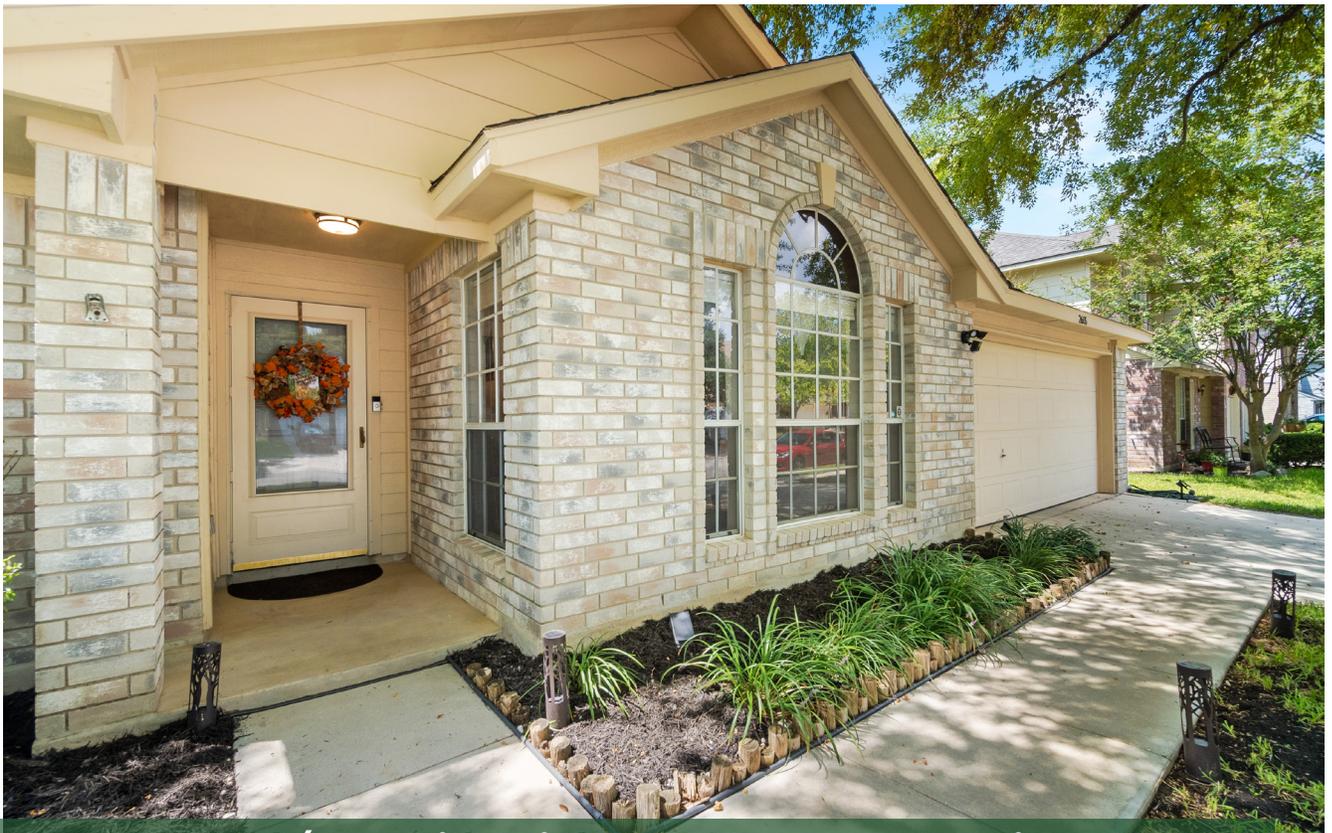
### ***Proposed Park/SF Residential Concept Representative Imagery***

The second scenario envisions a neighborhood park on the north side of the site, with single family detached homes on the south. The park will contain a picnic area, playground and passive open space along the creek, and serves as a neighborhood destination and anchor to the surrounding single family residential neighborhood. To ensure that park safety is enhanced, “eyes” on the street and open space is incorporated as the proposed residential properties front the park as well as along Marion Drive. In addition, the park is enhanced with a consistent lighting level from decorative pedestrian lighting and bollards. Angled, on-street parking is located on the north side of the site, giving direct access to the picnic area. To ensure walkability and pedestrian access to the park, wide sidewalks are located around the perimeter of the park as well as throughout the site. The drainage channel is enhanced and landscaped as an amenity for the park.

To be consistent with the surrounding single-family SF-7 zoning district, the single family residential would be designed in accordance with that base zoning. The code currently allows for smaller units than standard SF-7 sizes based on an average size of surrounding units. Should this scenario be utilized, this consideration for smaller units is important to ensure compatibility. Lot sizes and setbacks are consistent and provide the opportunity for four single family residential lots. Finally, to preserve the park-like streetscape setting and utilize existing alley right-of way, the lots are rear loaded along the alley.

## **Key Action Items for a Successful Scenario 2**

- Ensure northern most residential lot fronts both the proposed park and Marion Drive.
- Design all houses to face Marion Drive.
- Promote connectivity between the single-family homes and the park by ensuring homes are not fenced off entirely from the park and that gates to and from the park exist.
- Utilize existing alley right of way to ensure rear loaded lots and preserve streetscape along Marion for pedestrians.
- Ensure scale is compatible with adjacent neighbors with respect to building height and massing.



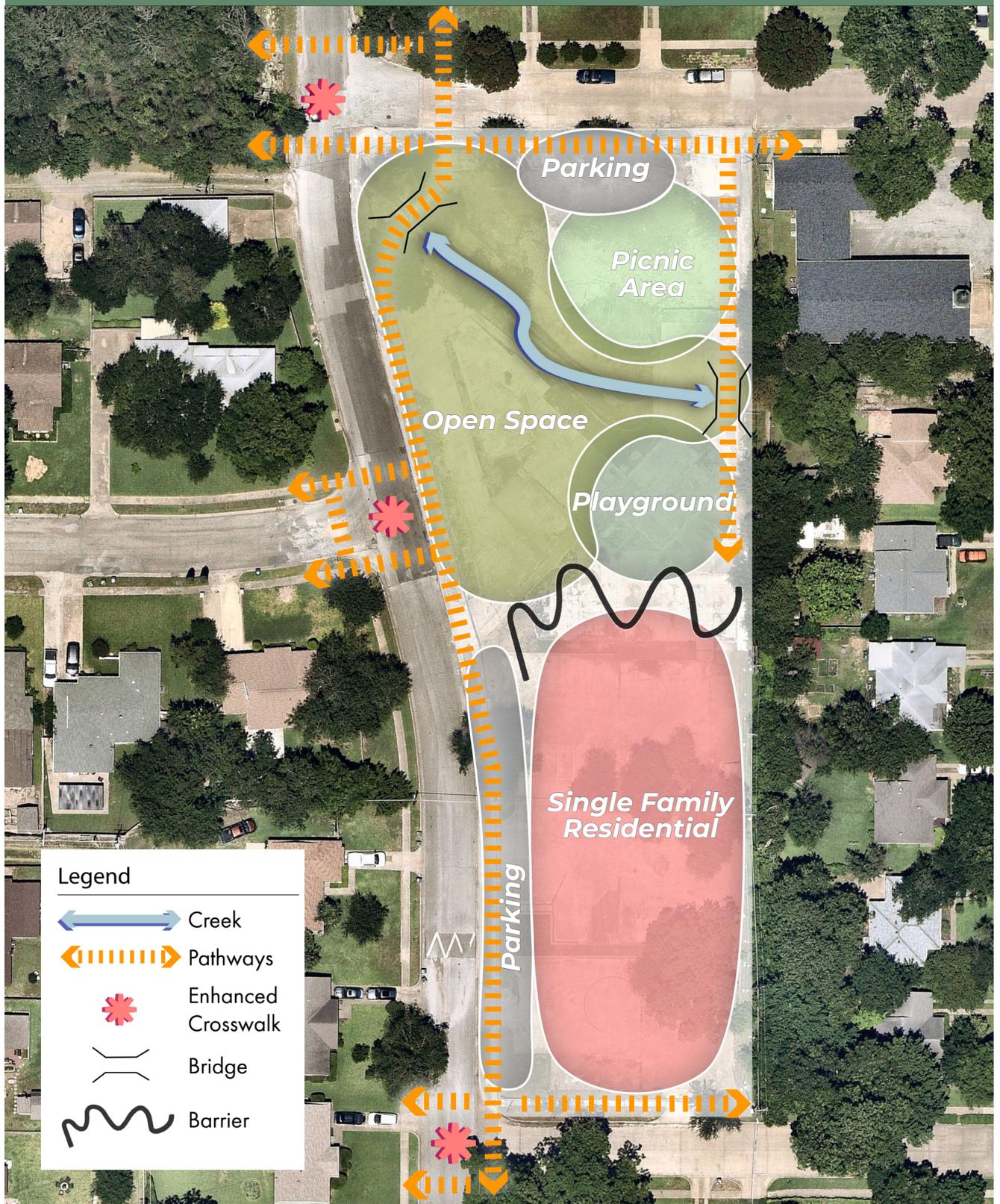
***Proposed Park/SF Residential Concept Representative Imagery***



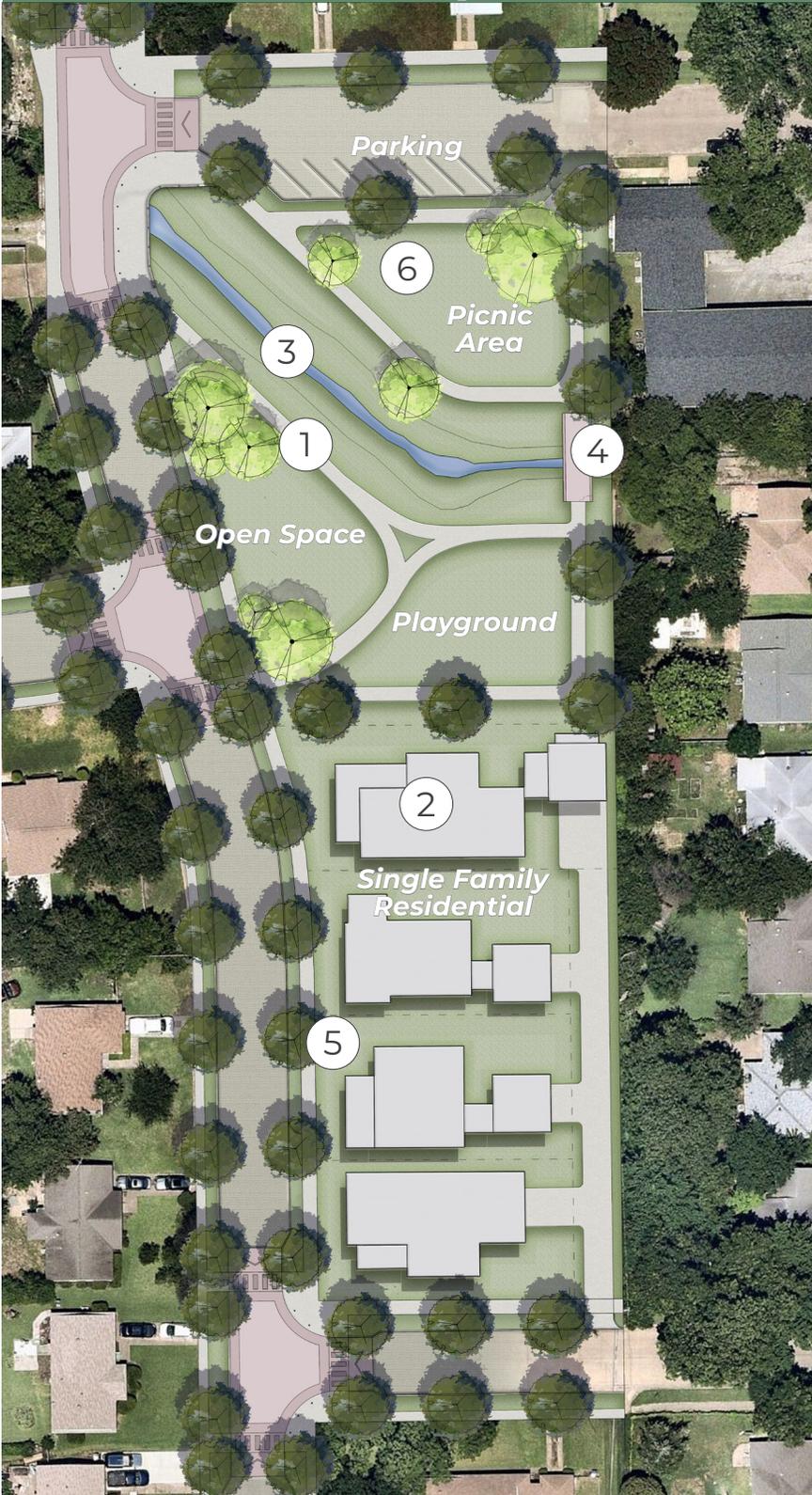
***Proposed Park/SF Residential Concept Representative Imagery***

- Limit single-family residential development to 1.5 stories to align with surrounding neighborhood's character and design.
- At a minimum, construct a playground and walking trails in the proposed park on the north side of the property.
- Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park. This action is more vital for Scenarios 2 and 3 since park access is limited on the south side of the park (north of the single-family residential homes).

## Scenario 2 Diagram



## Scenario 2: Park/SF Detached Concept



1 Trails



2 Residential



3 Creek



4 Pedestrian Bridge



5 Rear-Loaded



6 Picnic Area



# SCENARIO 3: PARK/ SMALL LOT SINGLE FAMILY RESIDENTIAL OR TOWNHOMES



*Proposed Park/Small Lot Residential Concept Rendering*



***Proposed Park/Townhome Concept Rendering***

The third scenario envisions a neighborhood park on the north side of the site, with small-lot single family residential (townhomes or tiny homes) on the south. Unlike the second scenario, the park is elongated to span the length of Marion Drive, maximizing the length of the park as well as the development potential of smaller lots to the southeast. On the north side of the drainage channel there is a playground with angled on-street parking for convenience. To the south of the creek, the park becomes more passive and unprogrammed, but is capped with a gazebo on the south and surrounded entirely by paths to ensure pedestrian access. Because the drainage channel lends itself to regrading as it changes direction heading east, a gradual slope is utilized for occasional flooding and is an asset and amenity that adds visual interest and serves as a focal element in a passive setting.

Consistent with the other two scenarios, safety is a primary point of emphasis. In this setting however, the residential lots front the park, providing direct front door access, and enhanced pedestrian paths around the perimeter. In addition, the park is enhanced with a consistent level of lighting from decorative pedestrian light poles and bollards.

Scenario 3 presents two options for residential that are either attached or detached single family housing. The first option obtains small lot single family residential homes that are similar in scale to the square footage of homes in the existing neighborhood (approximately 1000 square feet minimum). Because the houses are rear entry, garages are located in the alley, and lots are able to be narrower (30 feet wide), comfortably accommodating up to eight homes. Because the lots are small, they also are able to accommodate 25 feet of park in front of the homes, which create a greenway along Marion Drive. Should this redevelopment option be utilized, it will be important to ensure lots front the park with porches and front doors facing the park/Marion Drive and that a shared use pedestrian path is constructed along their frontage to provide consistent access and circulation around the perimeter of the park.

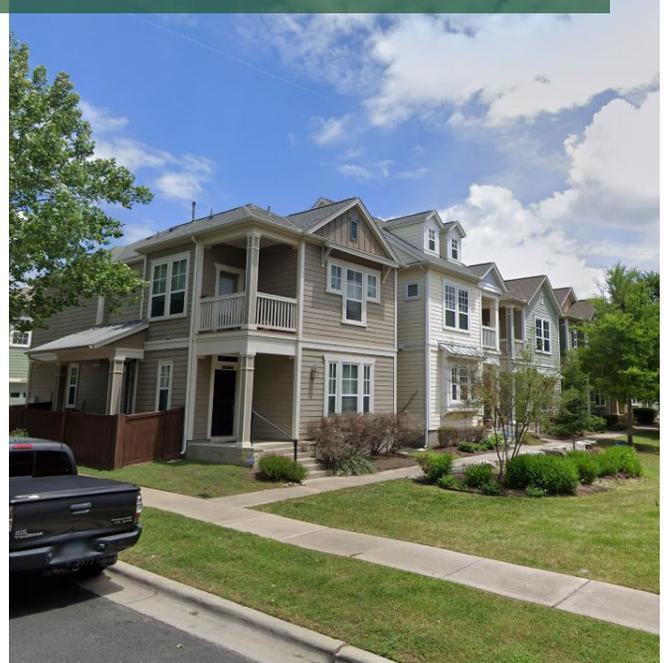


The second option of Scenario 3 is to construct townhomes located in a similar position as the small lot single family residential homes and have rear entry access located off of Marion Drive. This site orientation allows the (two story) townhomes to present their front door face along both Marion Drive and also Inwood Boulevard. Because townhome lots are not required to be as deep as typical detached residential lots, an additional 5 feet is added to the open space in front of the lots along Marion Drive (totaling 30 feet of open space). While townhomes are a complimentary use to the adjacent single family residential neighborhood, special attention should be given when utilizing this redevelopment option to ensure the scale is proportional and compatible with the surrounding neighborhood. From an urban design perspective, townhomes can be detailed with similar components, massing, fenestration, rhythm, materials and building height as their adjacent neighbors.

***Example of Small Lot Single Family Homes***



***Example of Potential Townhomes***



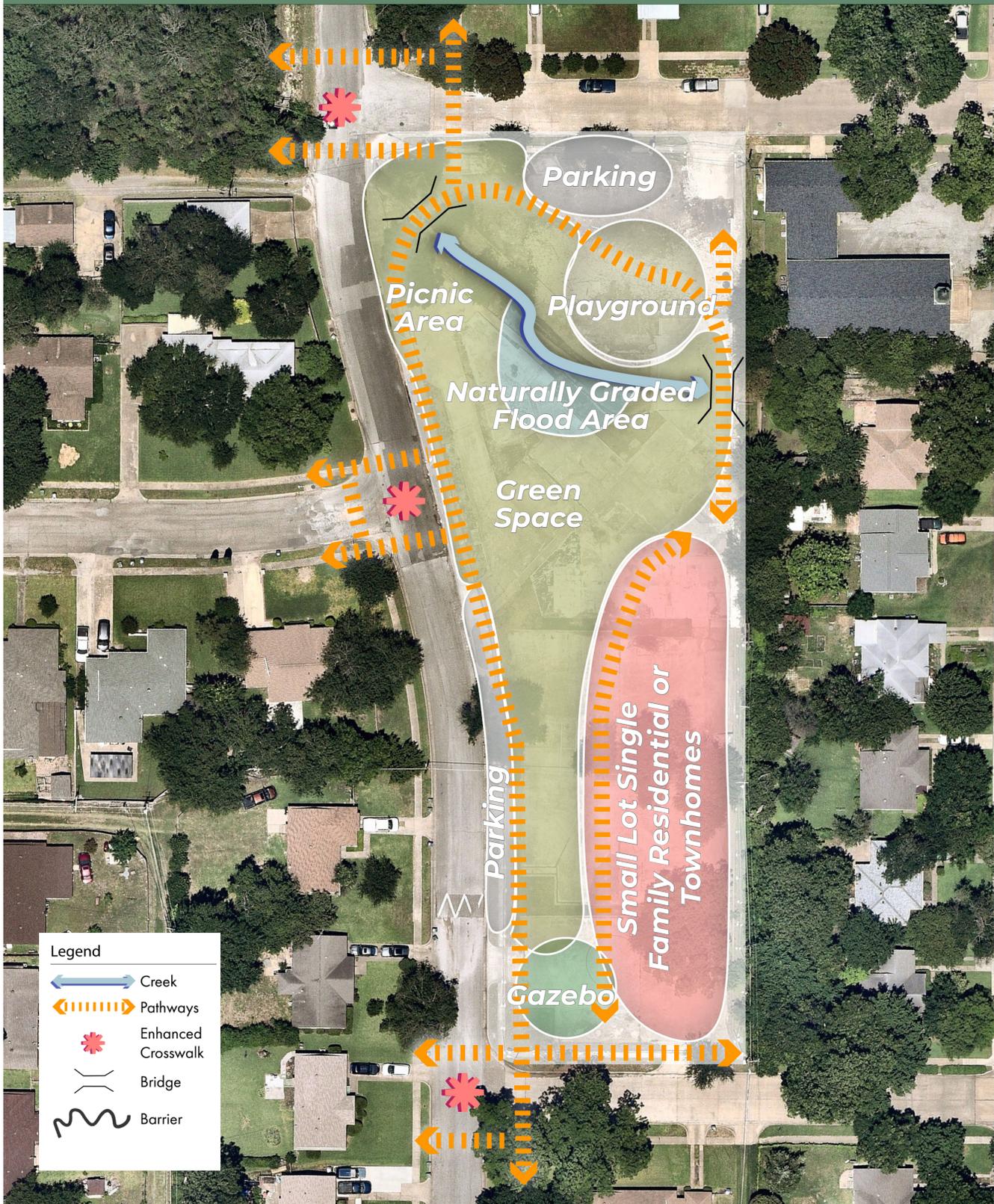
## **Key Action Items for a Successful Scenario 3 for Small Lot Single Family Residential Homes**

- Ensure all residential lots front the park.
- Utilize existing alley right of way to ensure rear loaded lots and preserve streetscape along the park for pedestrians.
- Install continuous sidewalk along front of residential lots to boost pedestrian connectivity and preserve the park green along the front.
- Ensure small lot home scale is compatible with adjacent neighbors with respect to building height and massing.
- Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park.
- If necessary, rezone the parcel to allow for tiny lots to be constructed on the south side of the site.
- Utilize a hybrid of form-based code zoning to allow tiny lots to be constructed on the south portion of the site.
- Integrate the site's rich history into gazebo design through public art, sculptures, and historic markers.

## **Key Action Items for a Successful Scenario 3 for Townhomes**

- Ensure all lots front outward towards the park and Marion Drive.
- Utilize alley served townhomes accessed off of Marion Drive, to preserve the streetscape and park amenities in front of the lots.
- Ensure townhome scale is compatible with adjacent neighbors with respect to similar components, massing, fenestration, rhythm, materials and building height.
- Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park.
- Integrate the site's rich history into gazebo design through public art, sculptures, and historic markers.

## Scenario 3 Diagram



## Scenario 3: Park/Small Lot Residential



1 Intersections



2 Creek



3 Green Space



4 Small Lot Homes



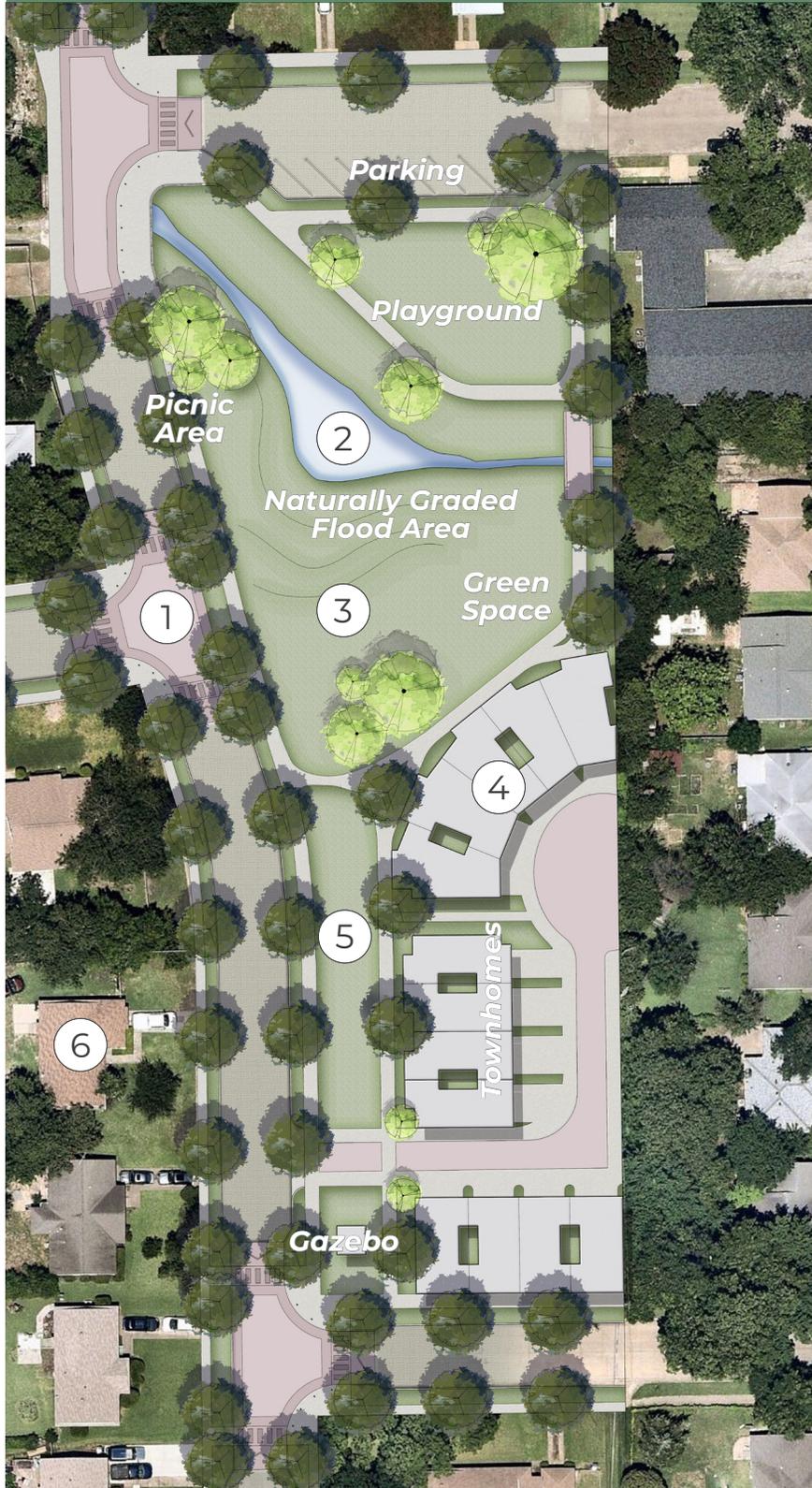
5 Continuous Sidewalk



6 Surrounding Neighborhood



## Scenario 3: Park/Townhomes



# CHAPTER 7

## IMPLEMENTATION

This chapter summarizes the recommended action items for the Las Brisas property and the three proposed site concepts.

# INTRODUCTION

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The Las Brisas Small Area Plan was created through a collaborative process that represents the community's vision for the future. Success in implementing the vision for this plan will require continued coordination with nearby residents, property owners, and key partners. The City of Garland should allocate adequate staff and financial resources to ready the property for future development, investment, and activity.

If the City decides to pursue any scenario that is not a full park, additional outreach is recommended to build support and consensus. If any form of residential is built on the Las Brisas property, surrounding property owners should be educated on how this will affect their property taxes in the future since that was the largest concern heard in the public feedback process.

In order for this plan's action items to be optimally achieved, overarching site action items and scenario-specific action items were summarized and are provided in a table on the following pages. With continued adherence and dedication to the recommendations and implementation strategies outlined in this plan, oncoming community support and strong, visionary leadership, the City will be able to achieve its overall vision to transform the Las Brisas property into a local neighborhood asset.

## OVERARCHING SITE ACTION ITEMS

***Walkability Strategy: Construct connections to the existing neighborhood’s sidewalk network that accommodates and prioritizes pedestrian access to promote multimodal mobility.***

<b>Action 1</b>	Ensure ADA standards are met in all new multimodal infrastructure projects.
<b>Action 2</b>	Encourage pedestrian safety through the construction of highly visible crosswalks with raised and textured enhancements.
<b>Action 3</b>	Install sidewalks along the perimeter of the site, and trails and paths throughout the park, linking programmed areas together.

***Equity Strategy: Provide activity areas for people of all age groups, backgrounds, and abilities.***

<b>Action 4</b>	Ensure the surrounding neighborhood’s demographic makeup is incorporated into future design of the site, such as constructing a playground for children, providing walking trails that are ADA accessible, or creating a central gathering space in the form of a public plaza or pavilion.
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***Trails and Open Space Strategy: Construct trail network connections within the site and to surrounding trail networks.***

<b>Action 5</b>	Construct the trail network connection in accordance with the Trails and Bikeways Master Plan for the trail identified along Resistol Road and Inwood Boulevard.
<b>Action 6</b>	Consider upgrading the on-street shared-use lane treatment to a dedicated bicycle lane. Although the speed limit along Resistol Road is less than 35MPH, residents report frequent speeding along this roadway. Extra precaution should be made to accommodate high bicycle usage of the proposed on-street facility.
<b>Action 7</b>	Promote linkages to the proposed trail along S Garland Avenue, when constructed.
<b>Action 8</b>	Establish appropriately scaled neighborhood park and open space, where amenities are tailored to residents of all ages and abilities.



## OVERARCHING SITE ACTION ITEMS

### ***Safety Strategy: Provide for pedestrian, park, and neighborhood safety through urban design elements and traffic calming measures.***

<b>Action 9</b>	Enhance crosswalks to the site’s intersecting streets with textured and raised crossings to boost pedestrian visibility and to slow traffic.
<b>Action 10</b>	Provide a consistent level of lighting throughout the park and along the right-of way, to ensure there are no dark areas of the park at night and enhance pedestrian safety
<b>Action 11</b>	Utilize bulb-outs, textured paving or pavers, and elevated crosswalk tables to enhance pedestrian safety and slow vehicular traffic.
<b>Action 12</b>	To improve access to and from the park, install crosswalks at each intersection on both sides of the street.

### ***Partnership Strategy: Encourage partnerships with local organizations, developers, and the public when implementing the vision for the Las Brisas property.***

<b>Action 13</b>	Encourage continued dialogue with neighborhood to realize vision.
<b>Action 14</b>	Encourage partnerships with the site’s future developer to continue the existing sidewalk network and to create enhanced crosswalks to intersecting streets.
<b>Action 15</b>	Partner with the Garland Cultural Arts Commission to incorporate the site’s rich history into future placemaking and urban design elements.

### ***Drainage and Infrastructure Strategy: Address drainage and flooding issues with the creek when the site is redeveloped.***

<b>Action 16</b>	Redevelop drainage channel and creek bed as an amenity to the neighborhood park.
<b>Action 17</b>	Address flooding and drainage infrastructure issues throughout the site in conjunction with sidewalk and intersection improvements.
<b>Action 18</b>	When redeveloping the site, resolve drainage and flooding issues along the right-of way by installation of newly engineered storm water infrastructure.

<b>Action 19</b>	Redevelop the northwest corner of the park to bridge over the drainage channel and widen the sidewalk so that pedestrian flow is uninterrupted and continuous along the right-of way.
<b>Action 20</b>	Transition the drainage channel that bisects the site into a neighborhood amenity by cleaning and re-grading the channel and providing pedestrian and access across it in key locations, linking the north and south portions of the site together.
<b><i>Placemaking and Development Character Strategy: Incorporate placemaking and urban design elements that will encourage park usage and will help the site become a special place for the community.</i></b>	
<b>Action 21</b>	Construct public art, sculptures, and other historic markers in future development that incorporates the area's rich history as the site of the first hospital in the City of Garland. Additionally, pay tribute to the hospital's founder, Dr. Robert E. Speegle.
<b>Action 22</b>	Ensure at least a portion of the site's future development include a park to support the feedback heard through the public input process.
<b>Action 23</b>	If any form of housing is to be constructed on the site, ensure new development fits in with the existing character of the surrounding neighborhood.
<b>Action 24</b>	Provide programmed areas within the park for neighborhood residents to enjoy, including a picnic area, playground, and open space area.
<b>Action 25</b>	Ensure tree canopy is established that provides shade and character to the park and streetscape along the right-of way.
<b><i>Parking: Provide an adequate amount of parking that is appropriately scaled to the surrounding neighborhood.</i></b>	
<b>Action 26</b>	Provide on street parking to accommodate neighborhood scaled parks.
<b>Action 27</b>	Construct angled parking in key locations for neighborhood park access. However, limit angled parking to less than 20 spaces to maximize park area and to develop the site in an appropriate manner to the surrounding neighborhood character.



### SCENARIO 1 ACTION ITEMS

<b>Action 1</b>	Develop entire property as a park.
<b>Action 2</b>	Program recreational space for all age groups. Include at a minimum an area for small children through the installation of a playground, an area for adults to utilize walking trails and street furniture amenities such as benches and picnic tables, and an area for teens in the form of a small ball court or half-court facility.
<b>Action 3</b>	Continue to work with local property owners as a list of park amenities is finalized and a final park design is created.
<b>Action 4</b>	Hire and fund a park designer to detail the park’s specific design and construction plans.
<b>Action 5</b>	Facilitate community programs in the park such as exercise classes, after school programming, a local regularly scheduled farmers market event, or a park clean up event.
<b>Action 6</b>	Develop a detailed strategy for programing the park through both active play areas and through neighborhood park programs via partnerships with local organizations.
<b>Action 7</b>	Plant at minimum 30 new street trees on the site. Follow Garland’s approved list of tree planters. Explore partnerships with local organizations to fund and plant the park’s trees.
<b>Action 8</b>	Work with the City of Garland Cultural Arts Commission to identify key areas of the park where public art, sculptures, and other park placemaking and urban design elements can be created.
<b>Action 9</b>	Incorporate the site’s history into the park’s design and public art efforts.
<b>Action 10</b>	Identify a way to pay tribute to the Garland Clinic and Hospital, as well as Dr. Speegle, by either creating a historical marker in the park, install a plaque, community sculpture, or statue representing this history, or dedicate the park by naming it in honor of Dr. Speegle.

## SCENARIO 2 ACTION ITEMS

<b>Action 1</b>	Ensure northern most residential lot fronts both the proposed park and Marion Drive.
<b>Action 2</b>	Design all houses to face Marion Drive.
<b>Action 3</b>	Promote connectivity between the single-family homes and the park by ensuring homes are not fenced off entirely from the park and that gates to and from the park exist.
<b>Action 4</b>	Utilize existing alley right of way to ensure rear loaded lots and preserve streetscape along Marion for pedestrians.
<b>Action 5</b>	Ensure scale is compatible with adjacent neighbors with respect to building height and massing.
<b>Action 6</b>	Limit single-family residential development to 1.5 stories to align with surrounding neighborhood's character and design.
<b>Action 7</b>	At a minimum, construct a playground and walking trails in the proposed park on the north side of the property.
<b>Action 8</b>	Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park. This action is more vital for Scenarios 2 and 3 since park access is limited on the south side of the park (north of the single-family residential homes).



### SCENARIO 3 (SMALL LOT) ACTION ITEMS

<b>Action 1</b>	Ensure all residential lots front the park.
<b>Action 2</b>	Utilize existing alley right of way to ensure rear loaded lots and preserve streetscape along the park for pedestrians.
<b>Action 3</b>	Install continuous sidewalk along front of residential lots to boost pedestrian connectivity and preserve the park green along the front.
<b>Action 4</b>	Ensure small lot home scale is compatible with adjacent neighbors with respect to building height and massing.
<b>Action 5</b>	Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park.
<b>Action 6</b>	If necessary, rezone the parcel to allow for tiny lots to be constructed on the south side of the site.
<b>Action 7</b>	Utilize a hybrid of form-based code zoning to allow tiny lots to be constructed on the south portion of the site.
<b>Action 8</b>	Integrate the site’s rich history into gazebo design through public art, sculptures, and historic markers.

### SCENARIO 3 (TOWNHOME) ACTION ITEMS

<b>Action 1</b>	Ensure all lots front outward towards the park and Marion Drive.
<b>Action 2</b>	Utilize alley served townhomes accessed off of Marion Drive, to preserve the streetscape and park amenities in front of the lots.
<b>Action 3</b>	Ensure townhome scale is compatible with adjacent neighbors with respect to similar components, massing, fenestration, rhythm, materials and building height.
<b>Action 4</b>	Ensure a pedestrian bridge is built so a strong connection is made between the north and south sides of the park.
<b>Action 5</b>	Integrate the site’s rich history into gazebo design through public art, sculptures, and historic markers.

# APPENDIX A

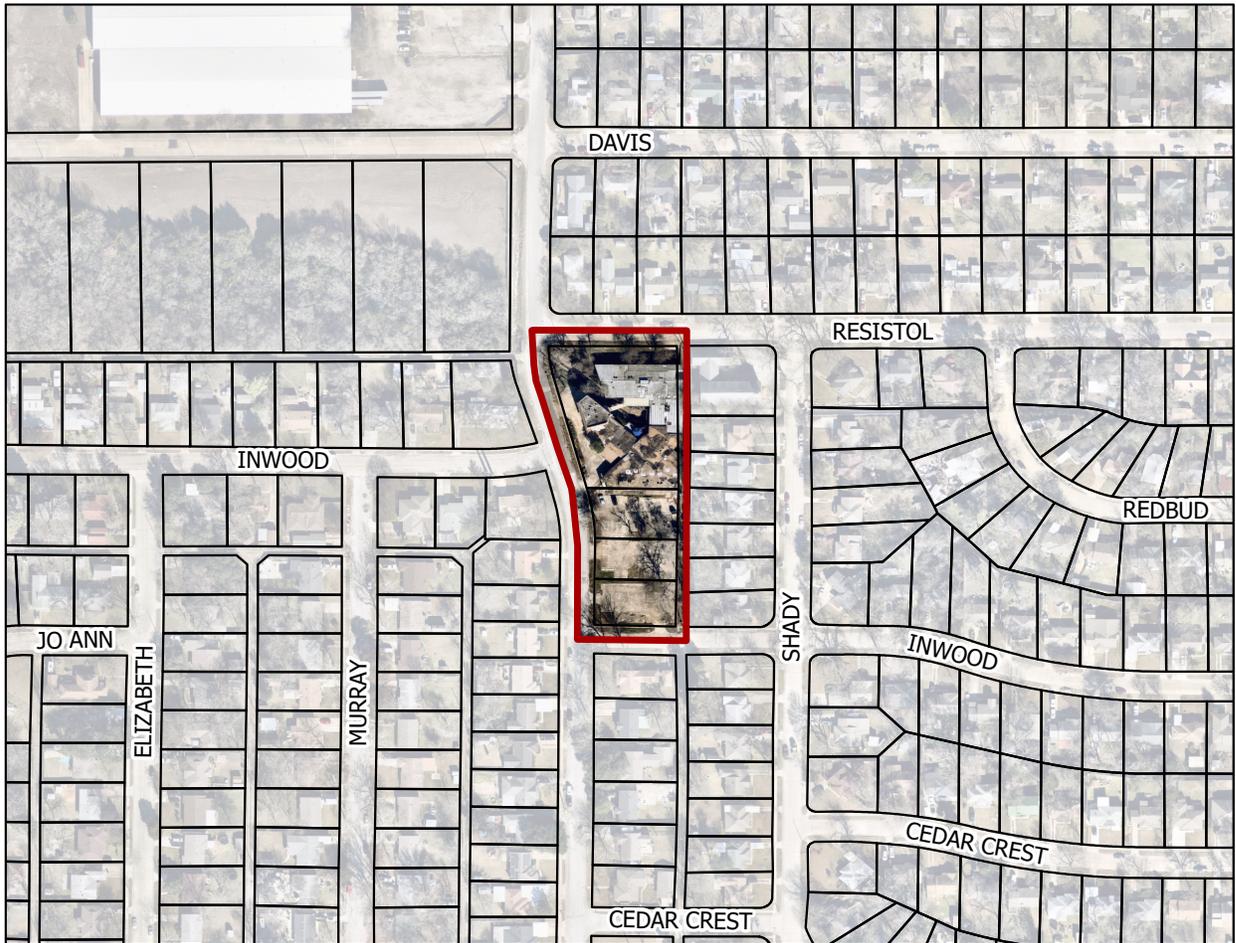
## EXISTING CONDITIONS MAPS

## **Table of Contents**

- Study Area
- Existing Land Use
- Existing Floodplain
- Existing Multimodal Infrastructure
- Existing and Future Parks and Trails
- Existing Parcel Ownership
- Existing Parcel Size
- Existing Transportation Systems
- Existing Tree Covering
- Existing Vacant Land
- Future Land Use
- Existing and Planned Public Facilities
- Existing Utility Infrastructure
- Existing Zoning Map

# Garland Las Brisas Small Area Plan

## Study Area



### Legend

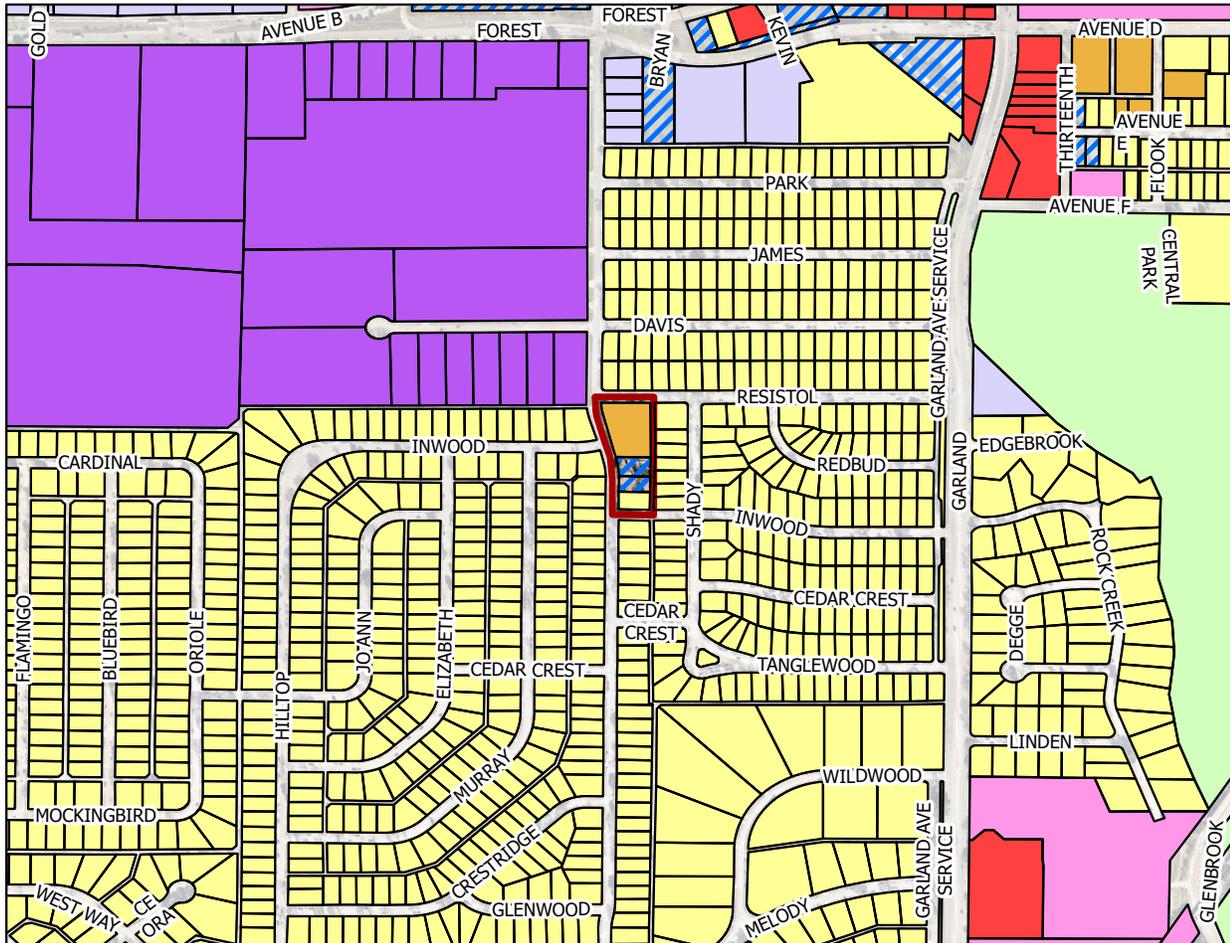


-  Study Area Boundary
-  Parcels



# Garland Las Brisas Small Area Plan

## Existing Land Use



### Legend



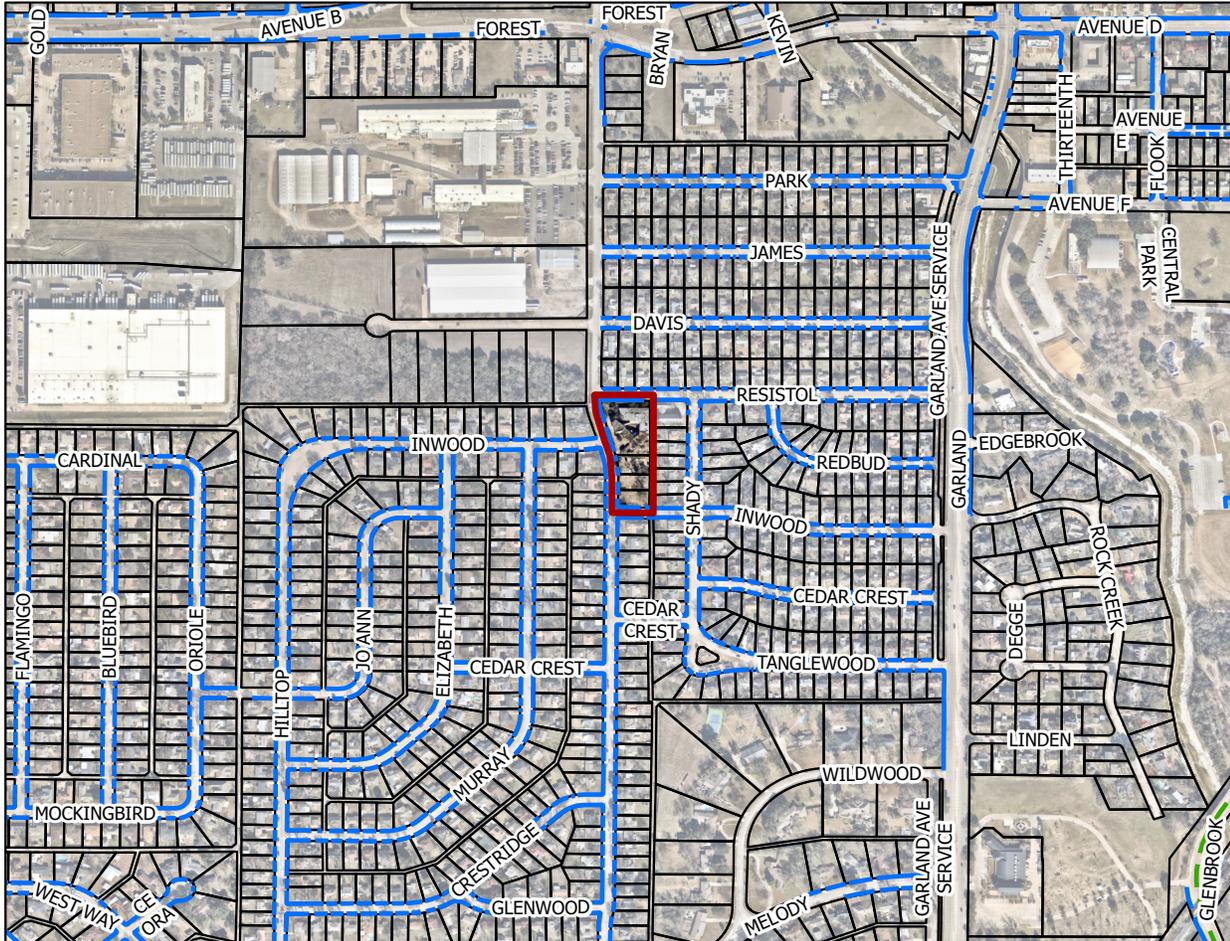
-  Study Area Boundary
-  Commercial & Retail
-  Community Facilities
-  General Industrial
-  Low Density Residential
-  Medium Density Residential
-  High Density Residential
-  Office & Professional Services
-  Parks & Open Space
-  Vacant





# Garland Las Brisas Small Area Plan

## Existing Multimodal



### Legend

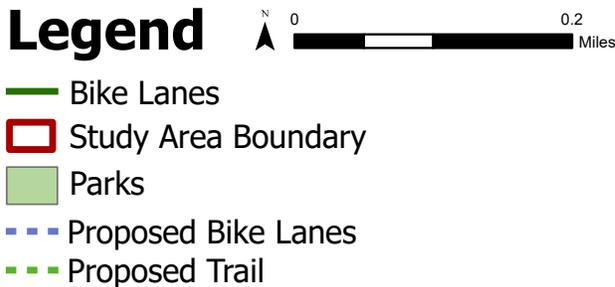
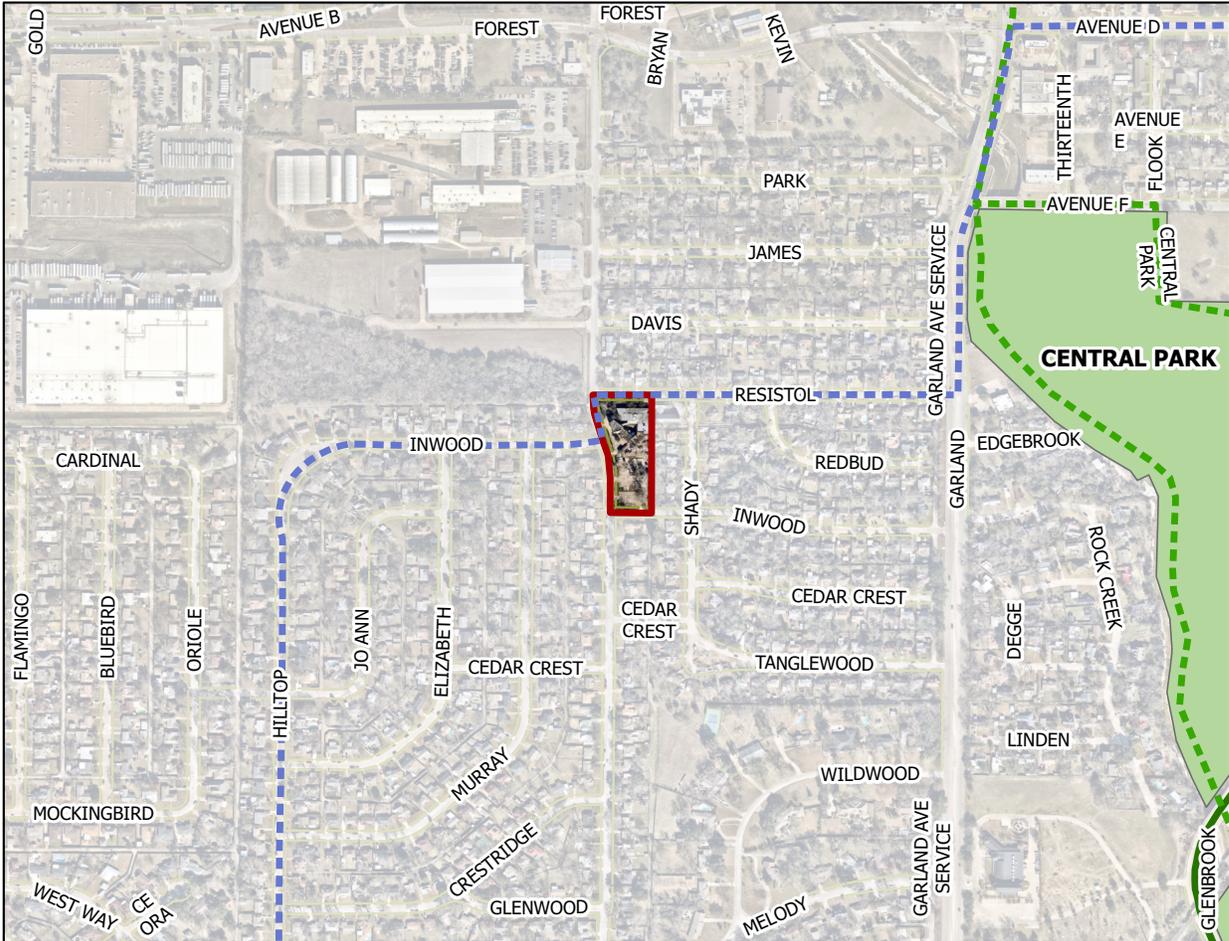


- Study Area Boundary
- Multimodal**
- Bike Lanes
- Sidewalks



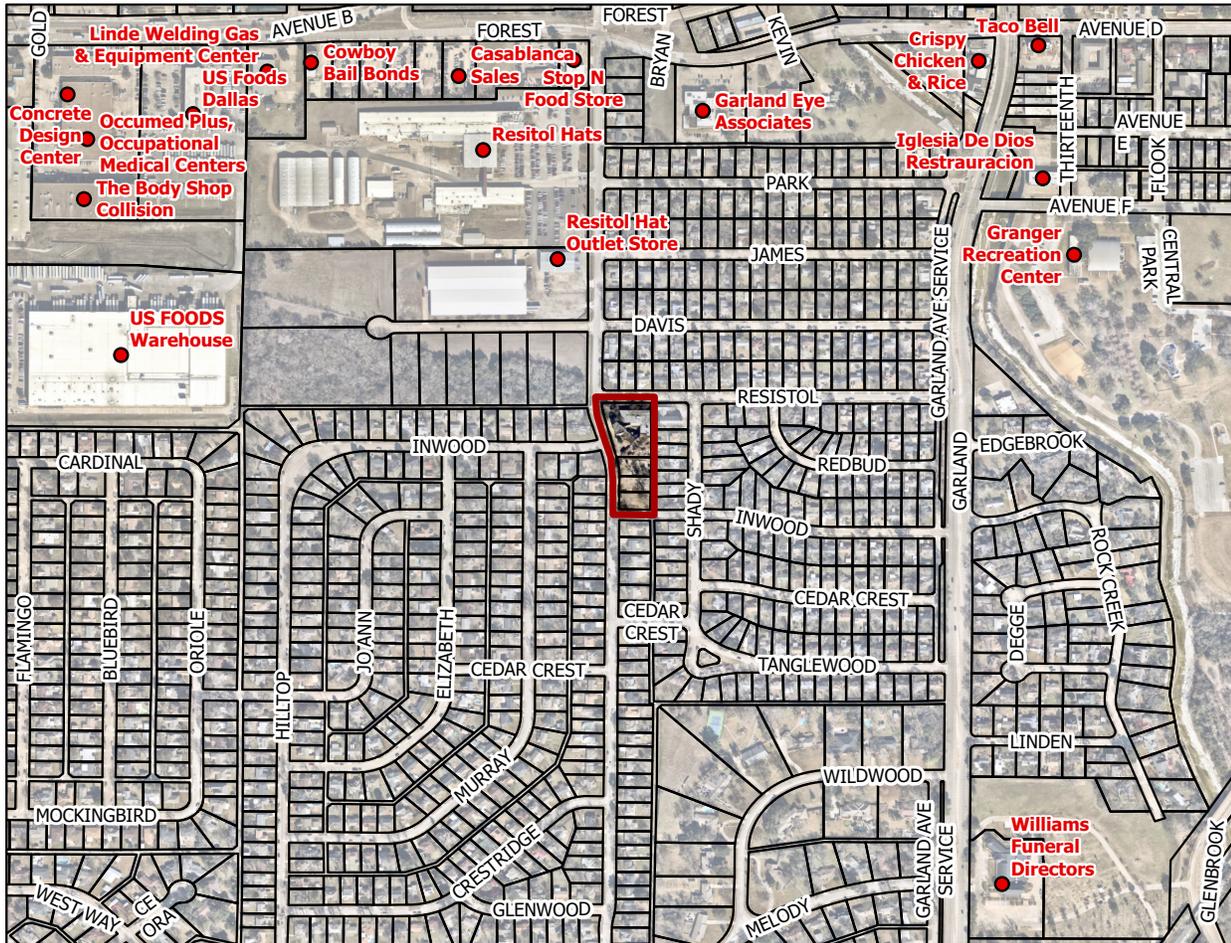
# Garland Las Brisas Small Area Plan

## Existing and Future Parks and Trails



# Garland Las Brisas Small Area Plan

## Existing Parcel Ownership



### Legend

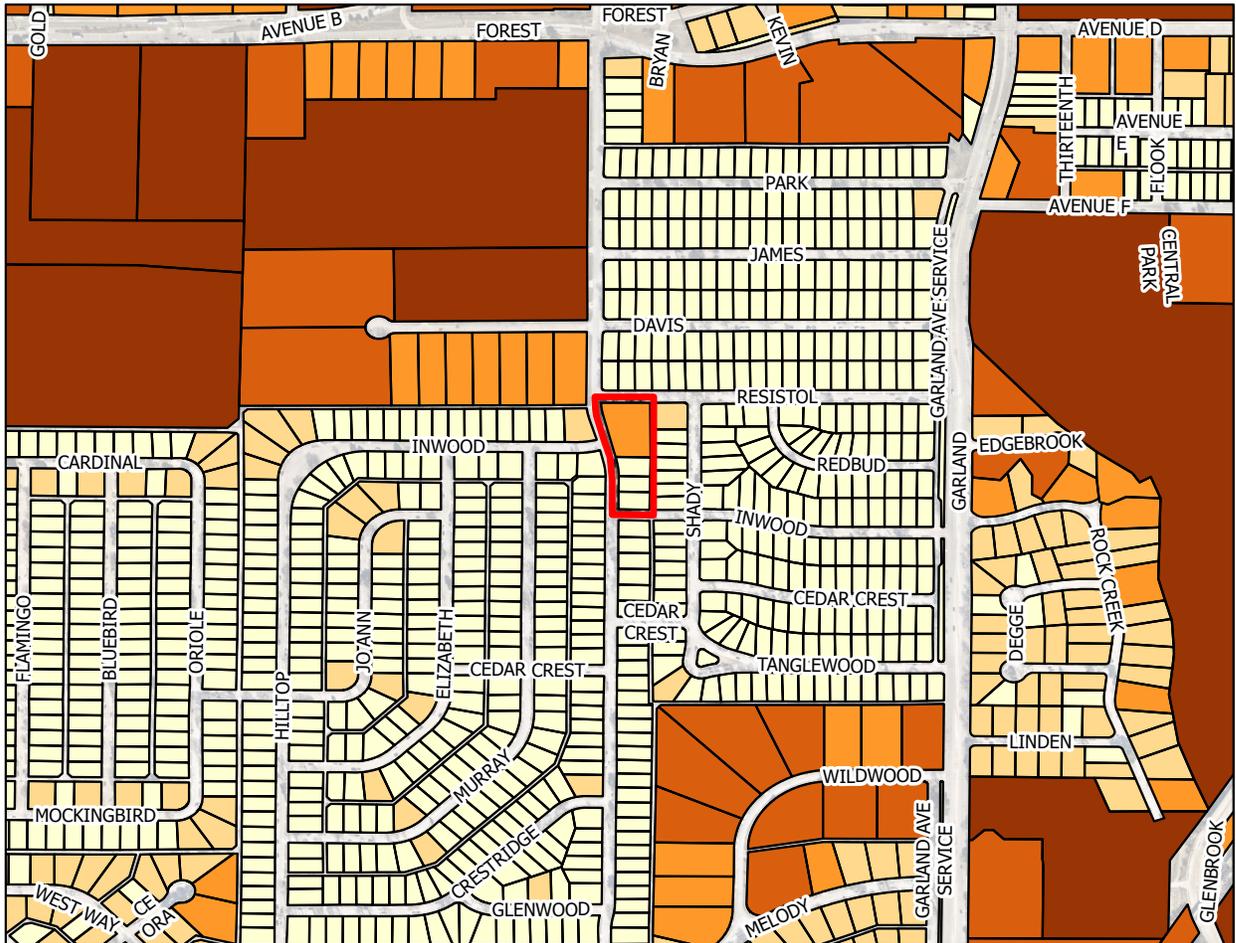


- Study Area Boundary
- Parcel Ownership



# Garland Las Brisas Small Area Plan

## Existing Parcel Sizing



 Study Area Boundary

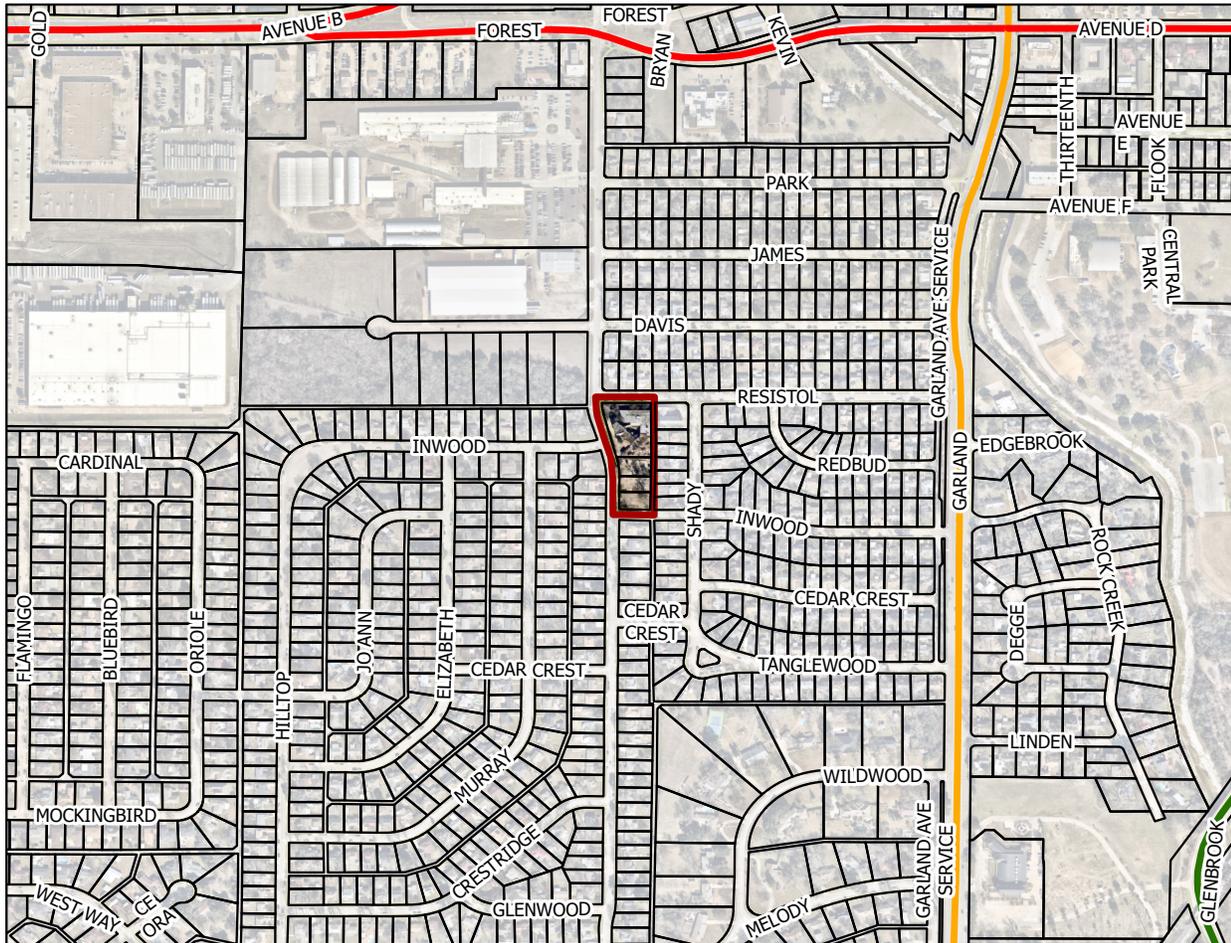
**Parcel Sizes**

-  0 - 0.25 Acre
-  0.25 - 0.5 Acre
-  0.5 - 1 Acre
-  1-5 Acres
-  5+ Acres



# Garland Las Brisas Small Area Plan

## Existing Transportations Systems



### Legend



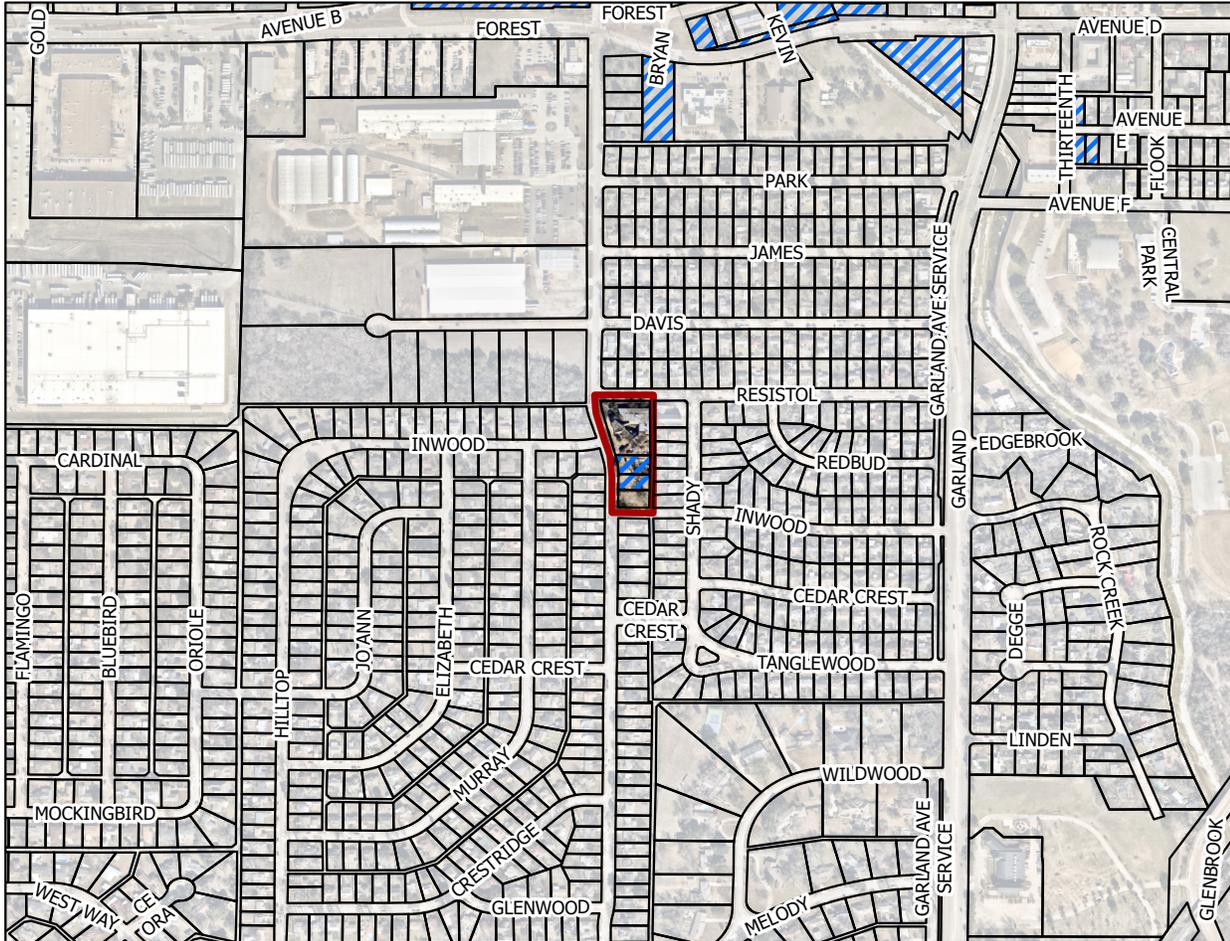
- Study Area Boundary
- Garland Thoroughfare Plan**
- A-C 3-Lane
- B-120' 6-Lane Divided
- C1-100' 4-Lane Divided
- G-5 50' Local





# Garland Las Brisas Small Area Plan

## Existing Vacant Land



### Legend

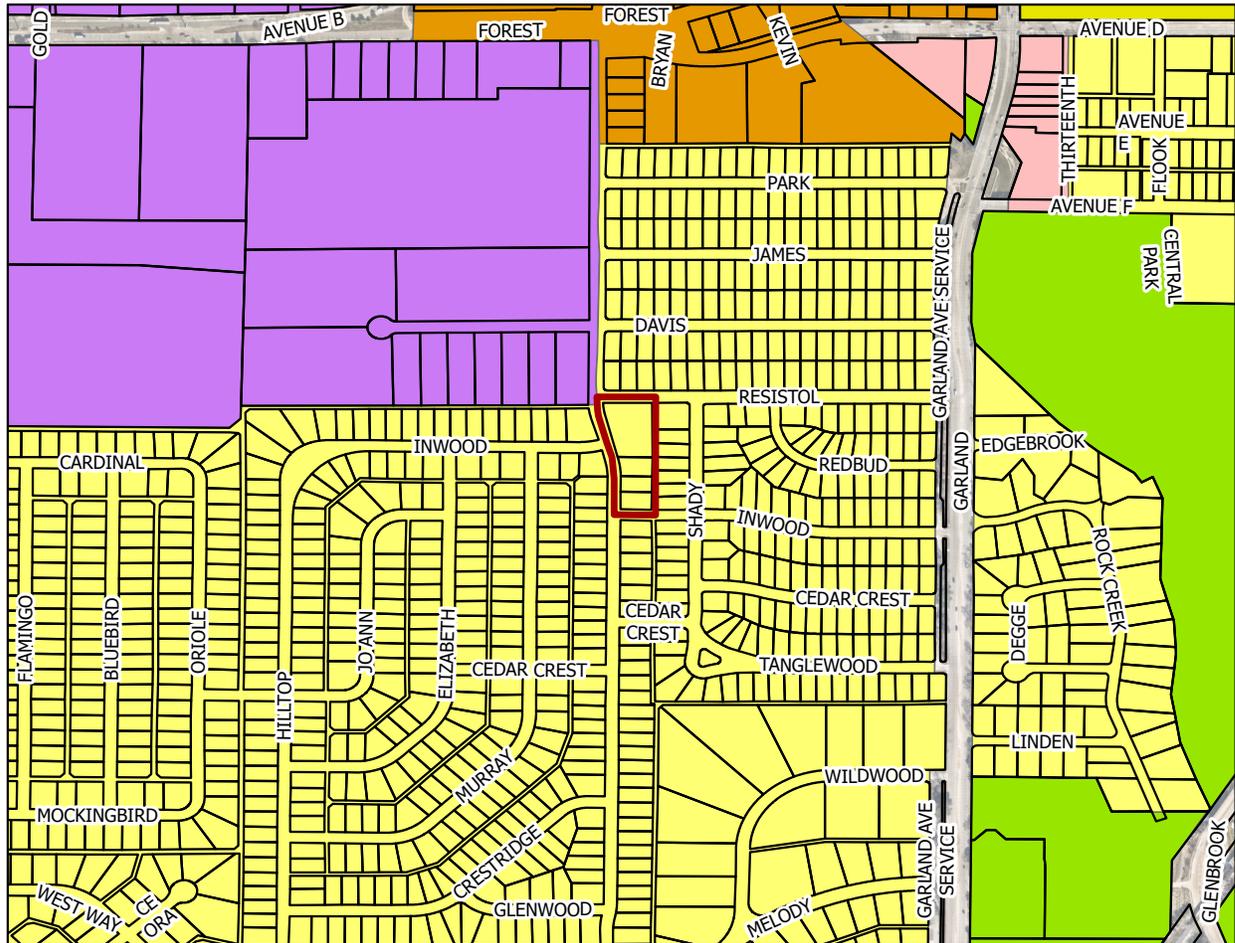


-  Study Area Boundary
-  Vacant Land



# Garland Las Brisas Small Area Plan

## Future Land Use



### Legend

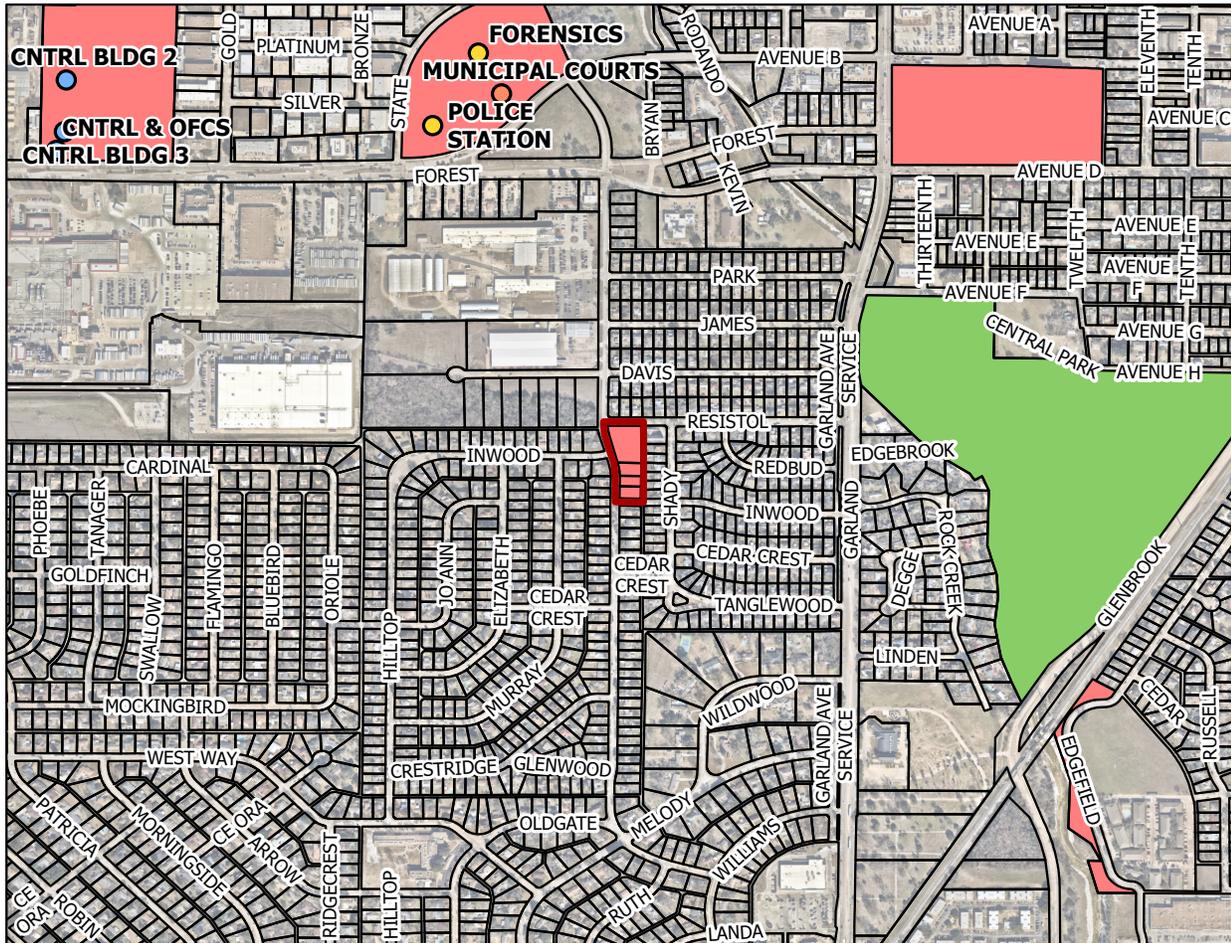


-  Study Area Boundary
-  Business
-  Neighborhood Centers
-  Parks & Open Space
-  Traditional Neighborhoods
-  Compact Neighborhoods
-  Urban Neighborhoods



# Garland Las Brisas Small Area Plan

## Existing and Planned Public Facilities



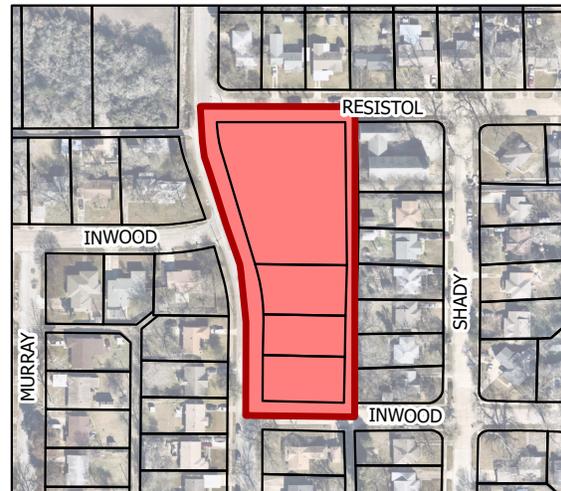
### Legend



□ Study Area Boundary

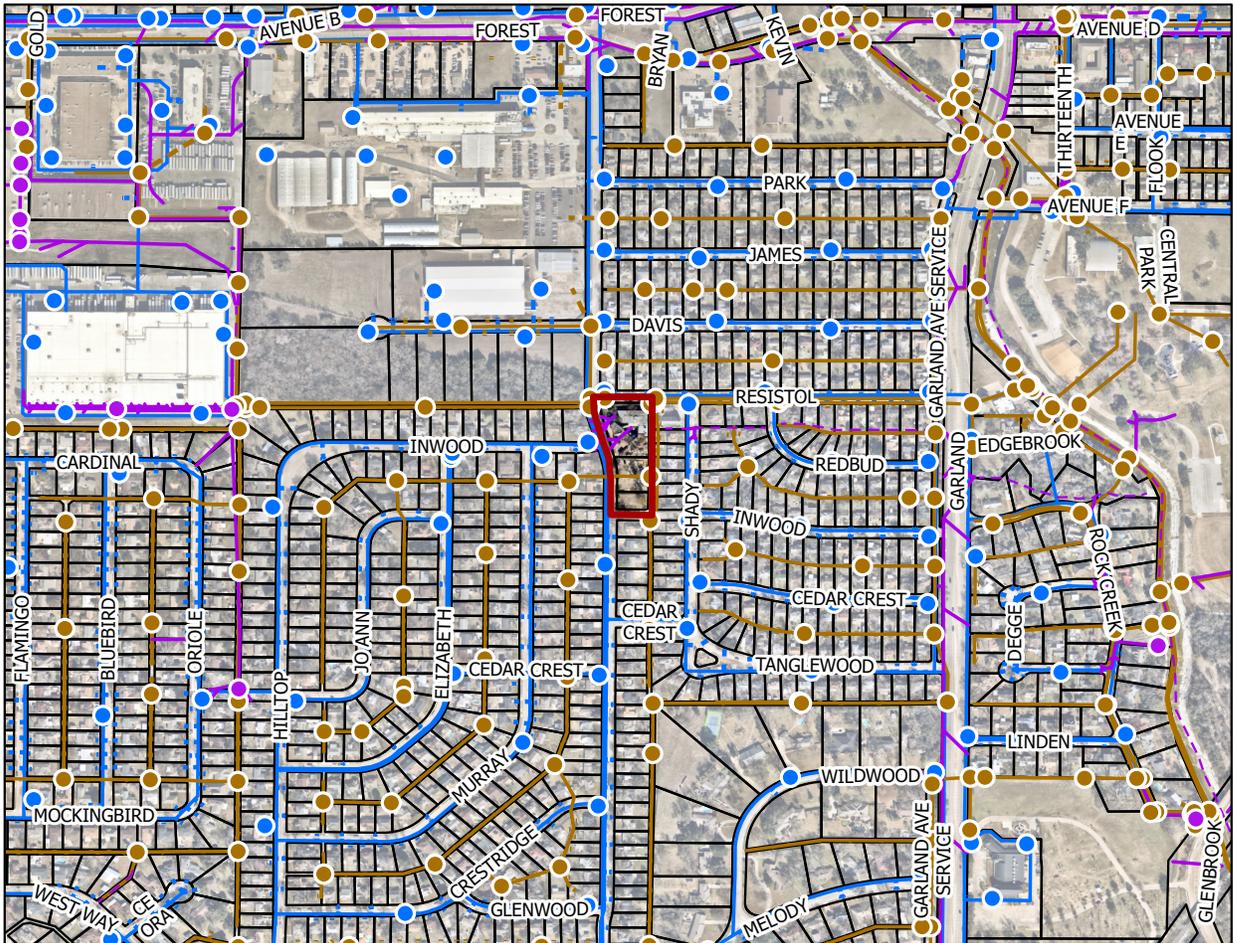
#### Facilities

- Courts
- Police
- Water
- City Owned Properties
- City Park



# Garland Las Brisas Small Area Plan

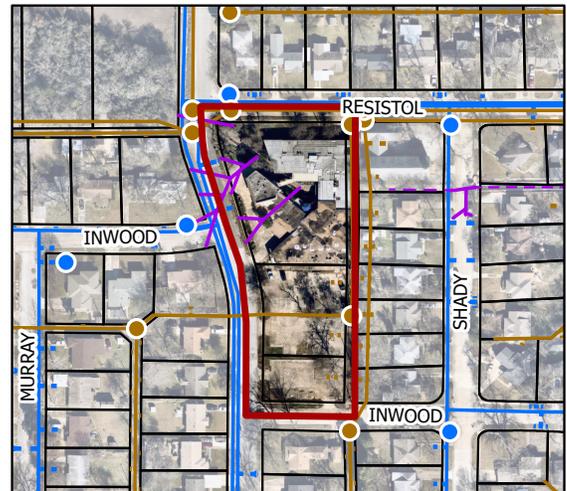
## Existing Utility Infrastructure



### Legend

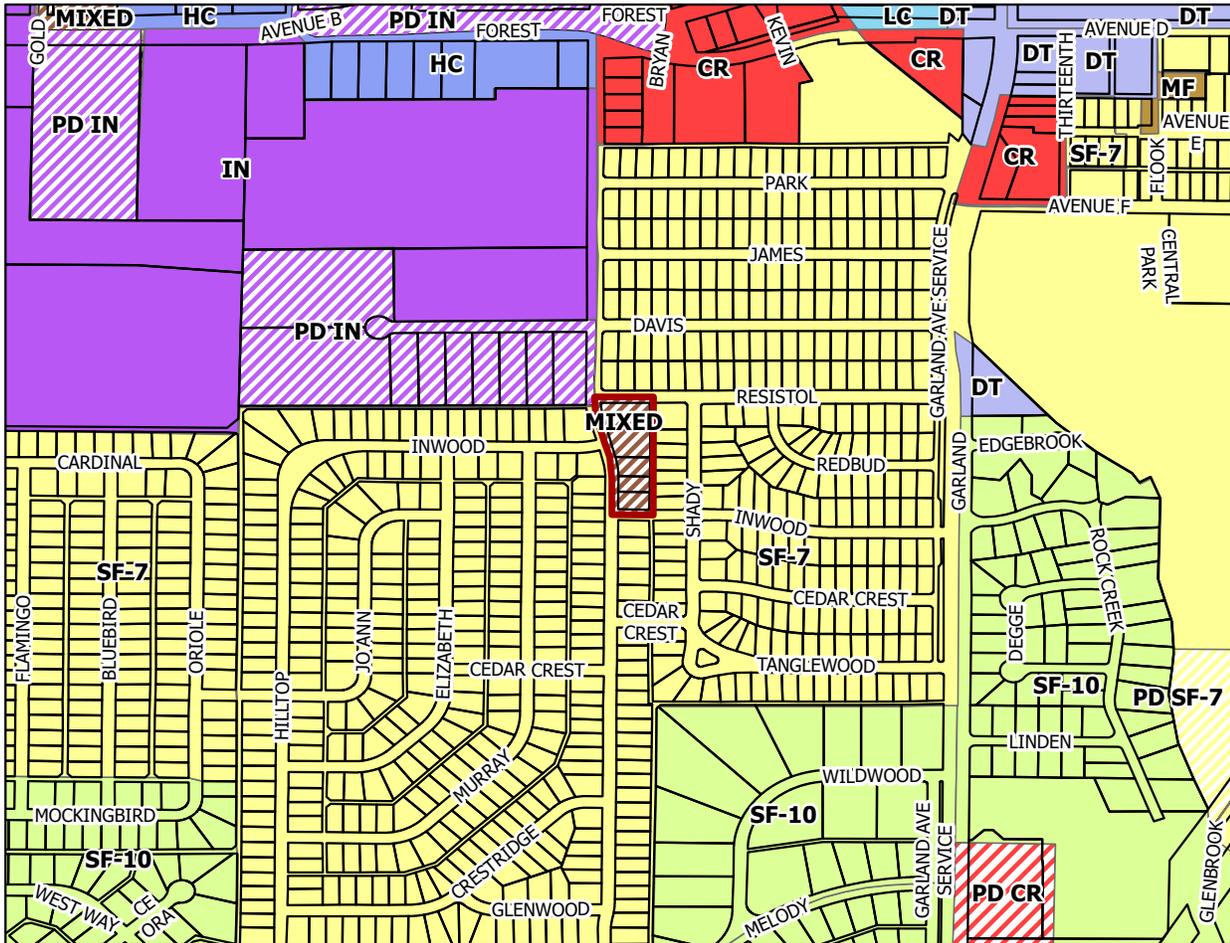


-  Study Area Boundary
-  Water Hydrants
-  Sewer Laterals
-  Water Pipes
-  Sewer Manholes
-  Water Service Lines
-  Sewer Pipes
-  Storm Channel
-  Storm Pipes
-  Storm Manholes



# Garland Las Brisas Small Area Plan

## Existing Zoning Map



### Legend



- Zoning**
-  Study Area Boundary
  -  Community Retail District (CR)
  -  Downtown District (DT)
  -  Heavy Commercial District (HC)
  -  Industrial District (IN)
  -  Light Commercial District (LC)
  -  Planned Development (CR)
  -  Multi-Family District (MF)
  -  Planned Development (IN)
  -  Single-Family 10 District (SF-10)
  -  Single Family 7 District (SF-7)
  -  Multiple Districts (Mixed)
  -  Planned Development (SF-7)



# APPENDIX B

## ONLINE SURVEY REPORT



**GARLAND**

TEXAS MADE HERE

# Garland Las Brisas Small Area Plan Survey Report

**Garland, Texas**

July 2022

DRAFT

**Kimley»Horn**



## Table of Contents

Survey Summary..... 3

Q1: What is your primary involvement with the study area? ..... 4

Q2: I have lived in Garland... ..... 5

Q3: How would you describe the best possible way for this area to contribute to the City of Garland..... 6

Q4: How appropriate are the following land uses in this area? ..... 7

Q5: If a portion of this property were to develop into a public park, which park amenities/features are most appropriate for the proposed future park to contain? ..... 8

Q6: Do you have suggestions for public art, gathering spaces, or other types of..... 9

Q7: Please leave any additional thoughts you may have on the idea of..... 10

Q8: If a portion of this property were to develop new housing opportunities, which of the following would be most appropriate for the site? ..... 11

Q9: How important are these goals for the future of the Las Brisas property overall? (*Select all that apply*) ..... 12

Q10: What are your ideas on how we can incorporate this property's rich history into future redevelopment plans? ..... 13

Q11: Do you have any additional thoughts about the future of the Las Brisas property? ..... 14



The City of Garland is conducting a Small Area Plan on the former Las Brisas Residence Club property, located at **1002 Marion Drive, Garland, TX 75042**. The site is bound by Resistol Drive on the north, Inwood Boulevard on the south, Marion Drive on the west, and Shady Lane on the east. Over the past month, the City hosted an online survey to gather feedback on the future development of the Las Brisas property.

## Survey Summary



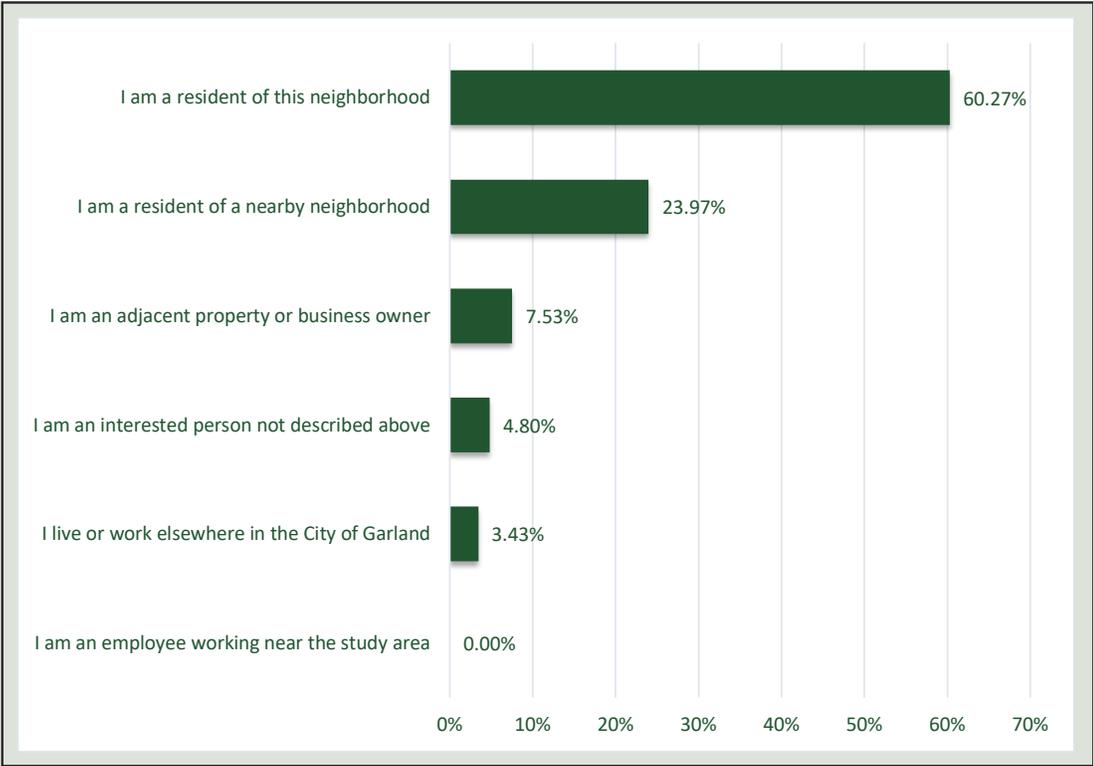
*Figure 1- The Las Brisas Property Historic Photo (Source: City of Garland)*

- 146 Responses
- 11 Questions

The online survey for the Garland Las Brisas Small Area Plan was hosted on the SurveyMonkey platform and was active between May 26, 2022 – July 1, 2022. The survey asked the public a total of 11 questions to gain a better understanding of the surrounding neighborhood’s desires for future development of the property. The property has a unique and rich history as it was once the first hospital in the Garland area. This survey report will review the responses gathered from this online survey.



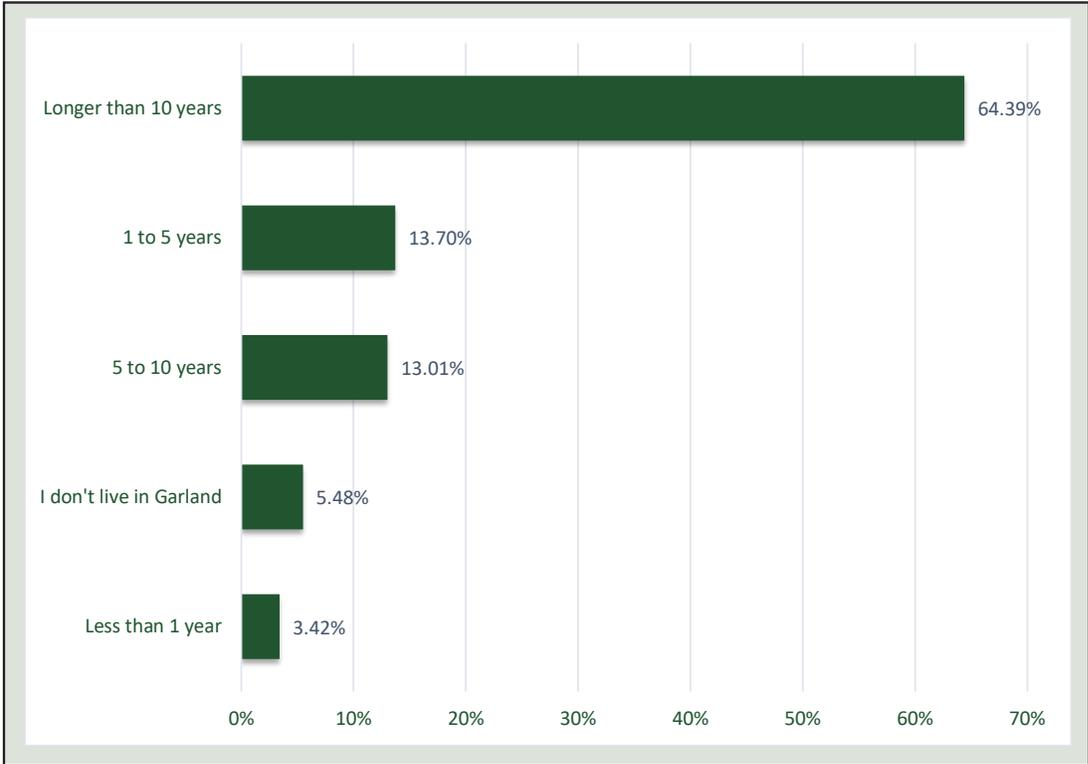
## Q1: What is your primary involvement with the study area?



Approximately 60% of respondents indicated that they are a resident of the neighborhood surrounding the Las Brisas property. The second highest answer at 24% was, "I am a resident of a nearby neighborhood". The top two survey responses are as expected, since the study area is smaller in size and directly impacts the adjacent and surrounding community.



## Q2: I have lived in Garland...



Approximately 64% of the population has lived in the Garland area for longer than 10 years, which shows that the City of Garland has been home to many individuals living in this community or the surrounding neighborhoods for over a decade. The other 36% of respondents feature individuals that have been there for 1 to 5 years (14%), 5 to 10 years (13%), individuals who do not live in Garland (5%), less than 1 year, (3%).





**Q4: How appropriate are the following land uses in this area?**

Land Uses (Organized by Most Appropriate to Least Appropriate)	Very Inappropriate	Somewhat Inappropriate	Unsure/No Preference	Somewhat Appropriate	Very Appropriate
<b>Park</b>	2.74%	0.68%	1.37%	8.22%	86.99%
<b>Public Open Space</b>	11.19%	0.70%	8.39%	20.28%	59.44%
<b>Housing for Active Seniors or Assisted Living</b>	38.62%	10.34%	14.48%	21.38%	15.18%
<b>Low Density Homes (Medium to Large Lot Detached Homes)</b>	51.05%	9.79%	8.39%	16.08%	14.69%
<b>Retail Uses</b>	68.79%	12.77%	3.55%	6.38%	8.51%
<b>Medium Density Homes (Townhomes or Small Lot Detached Homes)</b>	60.42%	13.19%	9.03%	9.03%	8.33%
<b>Medical or Health Services</b>	61.97%	12.68%	11.27%	7.04%	7.04%
<b>Restaurants</b>	65.97%	10.42%	7.64%	9.03%	6.94%
<b>Office or Employment</b>	71.83%	11.97%	8.45%	3.52%	4.23%
<b>Higher Density Homes (Multifamily or Condos)</b>	78.47%	10.41%	2.78%	4.17%	4.17%
<b>Mixed Use Buildings with Residential and Commercial Uses</b>	71.53%	9.03%	11.81%	4.85%	2.78%

Survey respondents by far see a park or public open space as the most appropriate future land use for the Las Brisas property. Approximately 95% of responses agreed that a park development is “Very Appropriate” or “Somewhat Appropriate” for the site. Additionally, approximately 79% of the survey respondents saw public open space as being an appropriate future land use as well. The remaining land uses fall steeply in terms of overall appropriateness for the site, according to the public.



**Q5: If a portion of this property were to develop into a public park, which park amenities/features are most appropriate for the proposed future park to contain?**

Garland Las Brisas Small Area Plan	Very Inappropriate	Somewhat Inappropriate	Unsure/No Preference	Somewhat Appropriate	Very Appropriate
<b>Benches</b>	4.17%	1.39%	2.08%	6.94%	85.42%
<b>Shade Structure/Pavilion</b>	4.17%	4.17%	6.94%	11.80%	72.92%
<b>Walking Trails</b>	6.16%	5.48%	4.11%	12.33%	71.92%
<b>Natural Water Feature (i.e., creek or street with rocks and flowing water)</b>	5.49%	2.05%	10.27%	11.64%	70.55%
<b>Public Open Space</b>	4.90%	0.70%	6.99%	18.18%	69.23%
<b>Play Area</b>	8.33%	3.47%	10.42%	10.42%	67.36%
<b>Picnic Tables</b>	3.47%	5.56%	5.56%	19.44%	65.97%
<b>Plaza/Community Gathering Space</b>	11.03%	7.59%	11.72%	24.14%	45.52%
<b>Manufactured Water Features (i.e., fountain with statue)</b>	9.72%	5.56%	20.14%	19.44%	45.14%

The community generally supported all the proposed park amenities or features, as seen through the 65% - 92% support rate from respondents who answered either "Very Appropriate" or "Somewhat Appropriate" for all amenity options. The top three options the community had chosen very appropriate were benches, a shade structure or pavilion, and walking trails. A manufactured water feature was the least desirable amenity to the public, only gathering 65% of the "Very Appropriate" or "Somewhat Appropriate" votes. This can be attributed to the fact that much of the feedback heard supported the idea of bringing the creek back to its natural state, rather than constructing a new water feature on the property.







**Q9: How important are these goals for the future of the Las Brisas property overall? (Select all that apply)**

Answer Choices	Responses
The property should include usable public green space or park within the study area.	87.67%
The property should strengthen the area as a distinctive place within the neighborhood and community.	80.82%
The property should contain a sidewalk and/or trail network that provides safe connections to the existing sidewalk network on the surrounding streets.	74.66%
The property should include housing opportunities specifically designed for seniors (including senior-specific housing or assisted living facilities).	18.49%
The property should contain small, neighborhood retail services, such as a coffee shop, a restaurant, or a corner store to serve the surrounding community.	13.01%
Other (please specify)	11.64%
The property should provide new low density single-family housing.	8.90%
The property should provide new medium-density housing opportunities (including small lot detached homes, single-family attached homes, or duplexes).	3.42%
The property should provide new high-density housing opportunities (including townhomes, a small apartment complex, or a mixed-use building).	1.37%

Question 9 reiterates the community’s desire for a public green space or park since this was the top preferred goal with an 87.67% selection rate. The second top goal was the property’s distinctive sense of place within the community, followed by the desire to have a robust sidewalk and trail network. The remaining listed goals drop significantly in terms of approval from the public.

Below summarizes the “Other” responses seen in this question:

- Water features that include a pond, a splash pad, and/or the use of the local creek
- Small or local shops such as a coffee/ice cream shop, a small grocery store, or boutiques
- Gathering areas for the community
- Parking for the park and for the nearby church





# APPENDIX C

## CHARRETTE WORKSHOP RESULTS



# GARLAND

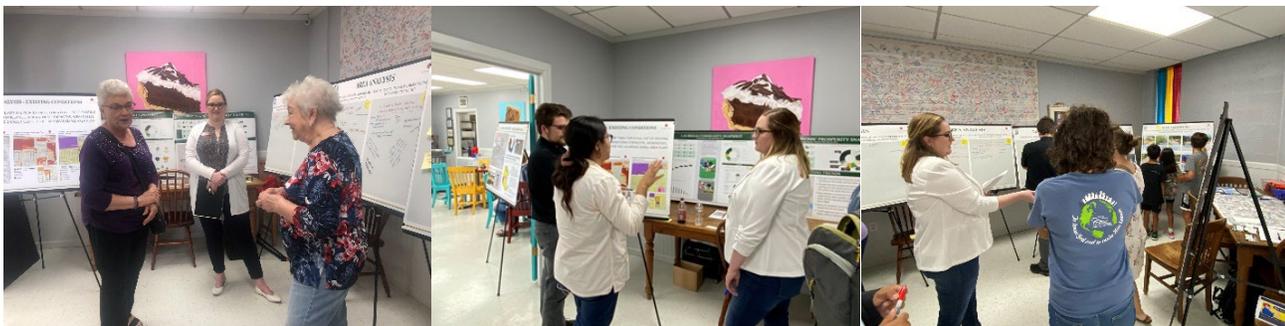
## Garland Las Brisas Townhall Charette

June 9<sup>th</sup> & 10<sup>th</sup>, 2022

### Event Recap

#### Introduction

The Garland Las Brisas Townhall Charette had at least 43 participants on the days of June 9<sup>th</sup> and 10<sup>th</sup>, 2022, and there was a fantastic level of collaboration. Several introductory stations outlined project basics. The activities and high-level takeaways from each station are described in the sections that follow.



#### Introductory Stations

- The introductory stations allowed the public to have a greater understanding of the local community and the Las Brisas study area.
- The existing conditions maps made up the majority of the introduction stations, being displayed on two different boards and on handouts given to the attendees.
- The existing maps included: Parks & Trails, Infrastructure, Zoning, Future Land Use, Vacant Land, Tree Coverage, Parcel Sizing, Parcel Ownership, Multimodal, Land Use, Floodplain, Transportation, and the Study Area Map.
- One of the boards featured was the Las Brisas Community Snapshot which dove into the demographic and market analysis of the property with comparisons to Dallas County. The data included the demographics, population trends, psychographics, average household size, median household income, educational attainment, and much more.



# GARLAND

## AREA ANALYSIS - EXISTING CONDITIONS

CHECK THE HANDOUTS ON THE NEARBY TABLE FOR A FULL LIST OF EXISTING CONDITIONS MAPS TO HELP YOU BRAINSTORM STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND CHALLENGES FOR THE LAS BRISAS SMALL AREA PLAN!

### Garland Las Brisas Small Area Plan Existing Transportation Systems

### Garland Las Brisas Small Area Plan Existing Parcel Sizing

### Garland Las Brisas Small Area Plan Existing Land Use

**Legend**

- Study Area Boundary
- Garland Thoroughfare Plan
  - A-C 3 Lane
  - B 120' 6 Lane Divided
  - C1 100' 4 Lane Divided
  - G-5 50' Local
- Parcel Sizes
  - 0 - 0.25 Acre
  - 0.25 - 1.5 Acre
  - 0.5 - 1 Acre
  - 1-5 Acres
  - 5+ Acres
- Land Use
  - Office & Professional Services
  - Public & Open Space
  - Commercial & Retail
  - Community Facilities
  - General Residential
  - Low-Density Residential
  - Medium-Density Residential
  - High-Density Residential

## LAS BRISAS COMMUNITY SNAPSHOT

(3-Mile Radius Around 1002 Marion Dr.)

### POPULATION

Garland Study Area: 134,319 Population, 32.0 Median Age, 42% Homeownership, 85.4 Median Income

Garland Metropolitan Area: 7.83M Population, 35.2 Median Age, 39.6% Homeownership, 77.1 Median Income

#### POPULATION TRENDS, CITY OF GARLAND, 1980-2020

Year	Population
1980	118,000
1990	130,000
2000	151,700
2010	170,800
2020	246,018

#### COMPARISON OF SHARE OF POPULATION BY AGE, 2021

### PSYCHOGRAPHICS

- Puts a 'face' on the numbers
- In addition to demographic information, includes preferences on housing, spending, and labor force
- 67 segments across the US
- Used by developers and retailers to understand the character of a community

#### FORGING OPPORTUNITY

- Helps leaders identify critical issues and work together to address them
- Helps find ways to grow businesses in an area
- Identifies housing and transportation needs
- Identifies opportunities for economic and social development
- Identifies areas for investment and growth

#### URBAN EDGE FAMILIES

- Helps identify families who live near and work in the urban edge
- Helps identify families who live near and work in the urban edge
- Helps identify families who live near and work in the urban edge
- Helps identify families who live near and work in the urban edge

### DEMOGRAPHICS

#### SHARE OF RESIDENTS BY RACE, GARLAND STUDY AREA, 2021

Race	Share
White	68%
Black	27%
American Indian	0%
Asian	3%
Other Race	2%
Two or More Races	0%

#### ETHNICITY

Ethnicity	Share
Hispanic or Latino	55.4%
Non-Hispanic or Latino	44.6%

#### AVERAGE HOUSEHOLD SIZE, 2021

Area	Average Household Size
Garland Study Area	3.24
Dallas County	2.75
Dallas-Fort Worth Metroplex	2.76

#### MEDIAN HOUSEHOLD INCOME, 2021

Area	Median Household Income
Garland Study Area	\$54,714
Dallas County	\$73,503
Dallas-Fort Worth Metroplex	\$73,503

#### EDUCATIONAL ATTAINMENT

Category	Share
No High School Diploma	27%
High School Graduate	30%
Some College	27%
Bachelor's Degree	16%



# GARLAND

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## SWOT Analysis

The SWOT analysis activity asked participants to find out the strengths, weaknesses, opportunities, and threats that the local community envisions for the Las Brisas property. Below are the results.

### Strengths

- The Creek
- Location
- Nice Trees
- Beautiful Property

### Weaknesses

- Unattractive/Eyesore
- Bad Roads
- Sidewalks
- No ADA
- Fence Covers Sidewalks
- Not Pedestrian Friendly
- Drainage Issues

### Opportunities

- Walking Path or Trails
- Grills
- Community Center
- Garden or Senior Center
- Kids Park with Shade
- Small Shade Structure
- Dog Park
- Once a Month Food Truck Visits

### Threats

- No Apartments or Townhomes
- Flooding if the Creek is Kept
- May Become Overcrowded if not a Park
- Ugly Retail Potential
- Not Open Creek
- Strict Zoning Regulation
- Daily Creek Clean Ups
- Not Having the Creek



# GARLAND

## AREA ANALYSIS

WHAT ARE SOME OF THE GREATEST **STRENGTHS** OF THE LAS BRISAS PROPERTY TODAY?

- Beautiful! ✓  
Promoting living future! ✓  
and central
- Location ✓  
Creek ✓  
Nice Trees ✓  
Good landscaping ✓  
Small ✓  
Creek potential ✓  
Surrounded by small houses and well-kept lawns ✓

WHAT ARE SOME OF THE MAJOR **WEAKNESSES** OF THE LAS BRISAS PROPERTY TODAY?

- Unattractive ✓
- Bad roads ✓
- Exposed ✓
- Drainage issues ✓
- Sidewalks NO ADA ✓
- Concrete hole ✓  
Fence covers sidewalks ✓
- Homeless community along the greenbelt ✓
- Not pedestrian friendly ✓  
Sidewalk ✓

## AREA ANALYSIS

WHAT ARE SOME OF THE GREATEST **OPPORTUNITIES** FOR THE LAS BRISAS PROPERTY'S FUTURE?

- Park - Shade ✓
- Rebuild / Renovate / Retain ✓
- Kids Park with shade ✓
- Botanical Garden or Senior center ✓
- Amused area or night Food Trucks? ✓
- Community Garden ✓
- Dog Park ✓
- walking path or trails ✓
- cement ✓
- Community enrichment ✓
- Bike Lanes + Trails ✓
- grills ✓
- Small shade structure ✓
- Scrape off concrete. Plant Grass. ✓
- Getting people out of the house + making their neighbors ✓

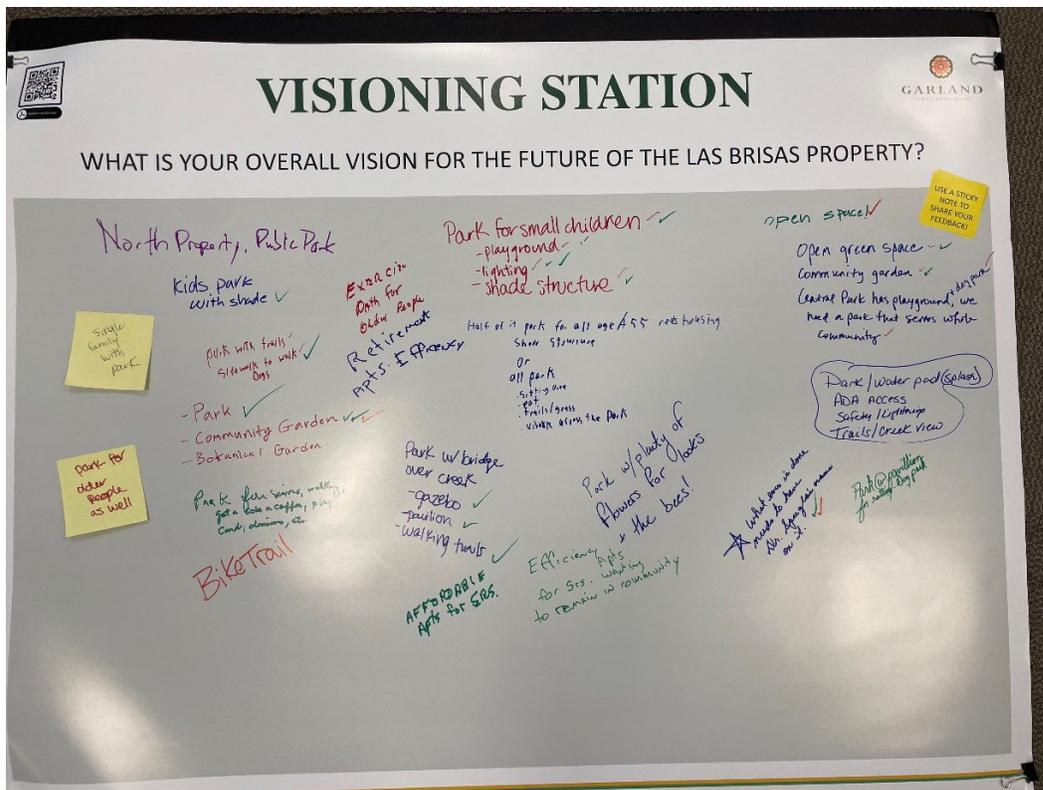
WHAT ARE SOME OF THE MAJOR **THREATS** FOR THE LAS BRISAS PROPERTY'S FUTURE?

- If its not a park, then the ecological integrity of the creek is at threat ✓
- Not open Creek ✓  
(Not allow kids to get in) ✓  
zoning regulation strict (Don't leave room) ✓
- Dirty looking creek - clean up! ✓  
Safety for kids near creek ✓
- ugly retail potential ✓
- No clinics ✓
- Kids playground ✓
- If the creek is kept, how will heavy rain impact the overall area? ✓
- If the creek location is not used, it may become overgrown or worse, instead ✓
- No apts or townhomes ✓



## Visioning Station

- The purpose of the visioning station was to get feedback from the community on what they envision for the overall vision of the Las Brisas property in the future.
- Most respondents wanted to see a park with open space that would feature trails, shading, a playground, and lighting. The park ideas differed as some saw it fit to be a park for children, but others wanted to see a park created for the older population.
- There was a minority response of having affordable and efficient apartments for seniors to remain in the community.



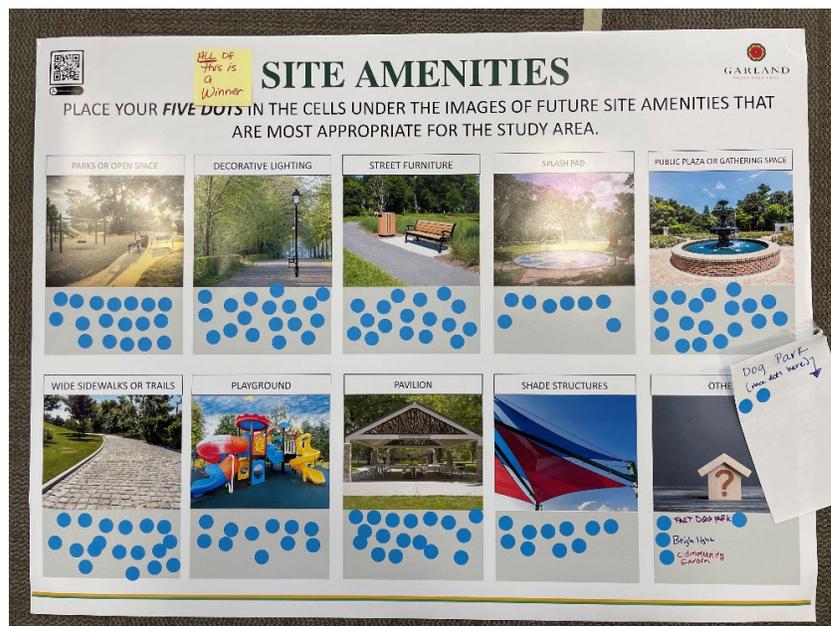
## Future Land Use Station

- The intention of the future land use station was to figure out what land uses the community would see the most appropriate for the study area.
- Respondents were given five dots to put on the ten different land use options. The parks or open space was the clear favorite of the activity as many did not use all five dots. Many respondents only placed one dot on the parks or open space, which placed an emphasis on their answer.
- Three other options received dots that being single-family detached, mixed-use, and assisted living/senior living. The three options received a total of seven dots compared to the twenty-four that parks or open space received.



### Site Amenities Station

- The site amenities station followed the same premise of the future land use station as people were given five dots with ten options.
- The ten options all received a great number of votes as the dots were spread out. The other option received a few for a dog park or a community garden.
- The quote that resonated with a lot of the community was that “all of this is a winner” since many wanted all the amenities to be featured in the park.





# GARLAND

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## Character and Design Station

- The premise of the character and design station activity was for the community to map out their ideas or comments on the satellite view of the Las Brisas property. The map also featured a letter from Linda Speegle that detailed her desire for the property to become a park.
- The feedback given was a mix of critiques and opportunities that the property could use. Listed below are a few of the critiques and opportunities presented by the community.

### Critiques

- Parking issues with the church
- Traffic on Resistol Road
- A dog park could cause dangerous situations
- Sidewalks blocked along the property
- Creek is too open
- Safety issues with creek
- Marion sidewalks need help
- No low income housing

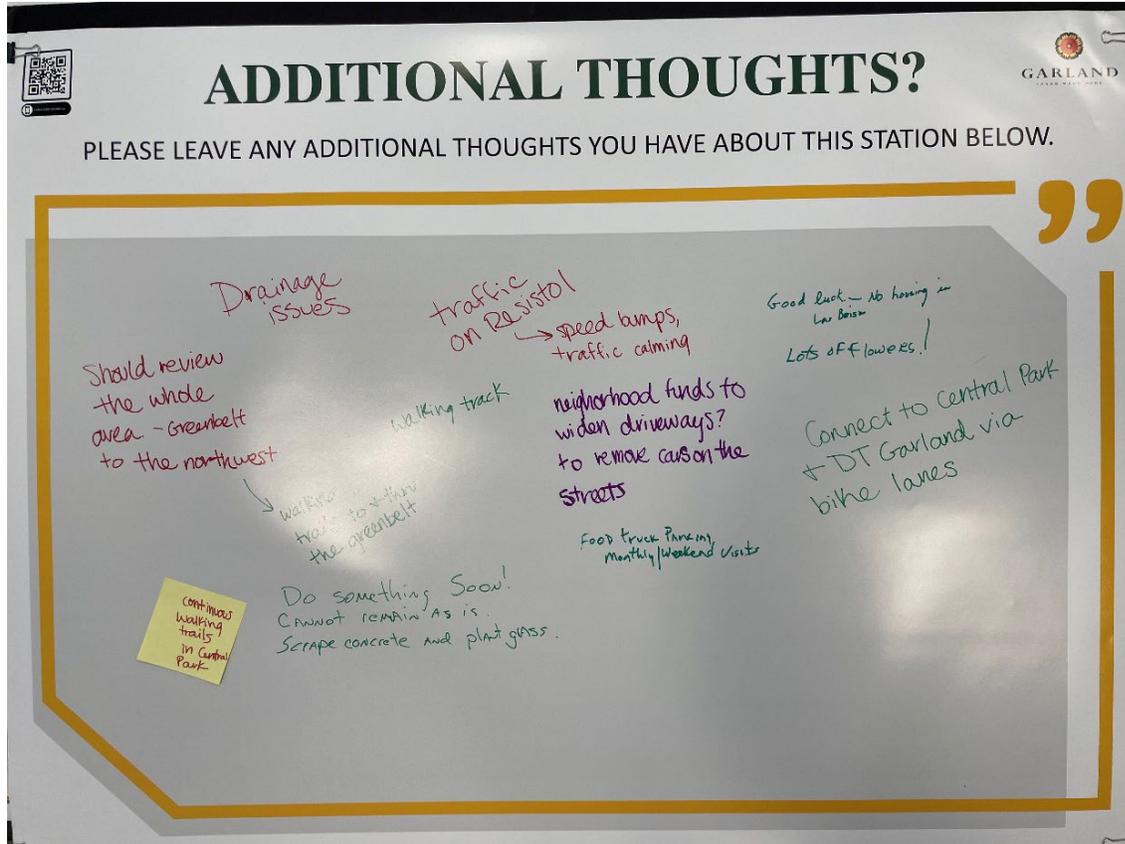
### Opportunities

- Kid/elderly friendly
- Senior Center
- Community Center
- Park with landscaping
- Lots of trails in neighborhood
- Dog park
- Elevated sidewalks
- Bridge
- Cover Creek
- Safety/lighting





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### Next Steps

The feedback gathered from the Garland Las Brisas charrette in addition with all other feedback received, will be incorporated into the Draft Small Area Plan. Over the next few months, the planning team will create strategies and actions aligned with the community's vision for review.

# APPENDIX D

## FOCUS GROUP WORKSHOP MATERIAL

# LAS BRISAS PROPERTY SMALL AREA PLAN

## FOCUS GROUP PRESENTATION



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June 13, 2022

Kimley»Horn

## AGENDA



WELCOME AND  
INTRODUCTIONS



PROJECT AND  
PROCESS  
OVERVIEW



ASSESSMENT TO  
DATE



KEYPAD POLLING  
AND SWOT  
ANALYSIS



NEXT STEPS

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## INTRODUCTIONS



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## KEY OBJECTIVES

# KEY OBJECTIVES

SHARE WITH YOU THE  
INFORMATION AND PROCESS  
FOR CREATING THE LAS  
BRISAS SMALL AREA PLAN.

BENEFIT FROM YOUR  
CREATIVE IDEAS ABOUT THE  
BEST WAY TO ACHIEVE THE  
OVERALL VISION FOR THE  
SITE.



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## PROJECT OVERVIEW

## SITE DATA AND CONSIDERATIONS

- o STUDY AREA SIZE
- o ADJACENT USES
- o ACCESS & CONNECTIVITY
- o FRONTAGE
- o TOPOGRAPHY & DRAINAGE
- o VISIBILITY
- o PARKING



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## SCOPE OF WORK



## SCOPE OF WORK

### PHASE I - (FEBRUARY - APRIL)

TASK 1 – PROJECT INITIATION

TASK 2 – DATA COLLECTION

TASK 3 – MAPPING

TASK 4 – MARKET CONDITIONS & ANALYSIS

### PHASE II - (MARCH - JUNE)

**TASK 5 – PUBLIC ENGAGEMENT**

STAKEHOLDER INTERVIEWS

TOWN HALL/CHARENTE

COMMUNITY OUTREACH

ONLINE SURVEY

### PHASE III - (JUNE - JULY)

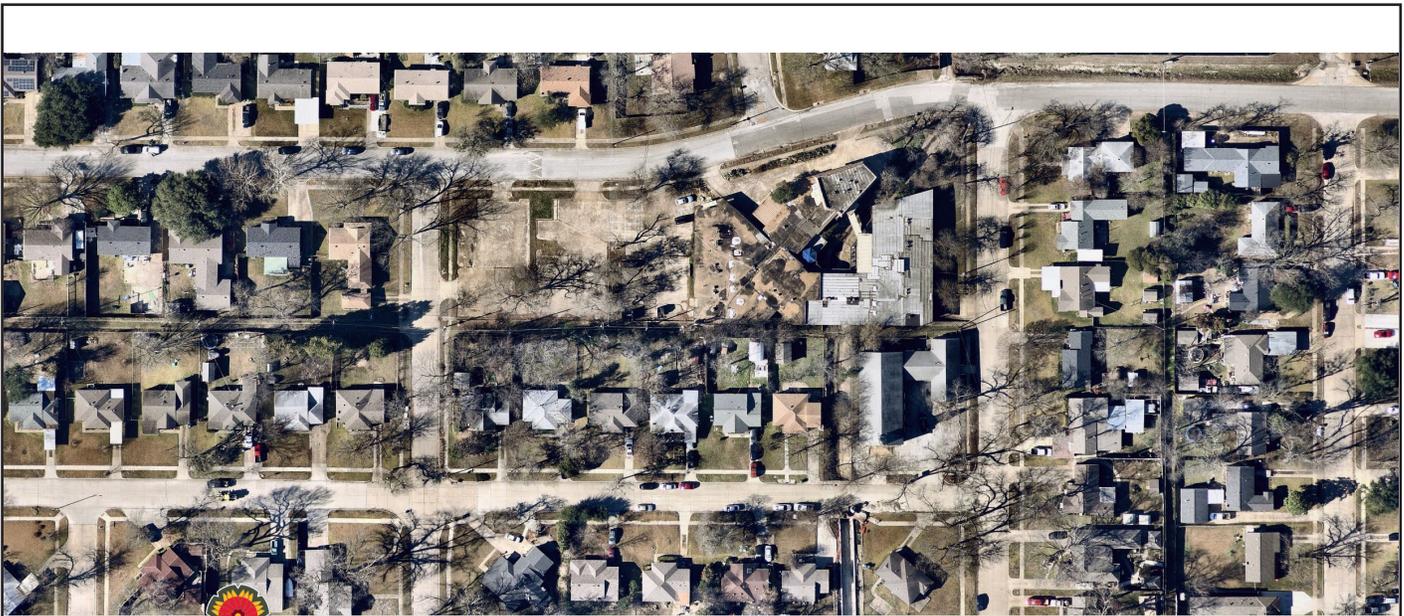
TASK 6 – DEVELOPMENT CONCEPT

TASK 7 – IMPLEMENTATION STRATEGY

### PHASE IV - (JULY - AUGUST)

TASK 8 – FINAL REPORT & PLANS

TASK 9 – FINAL ADOPTION



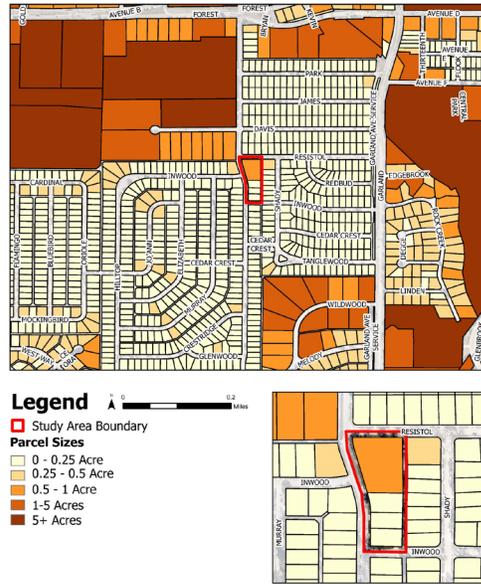
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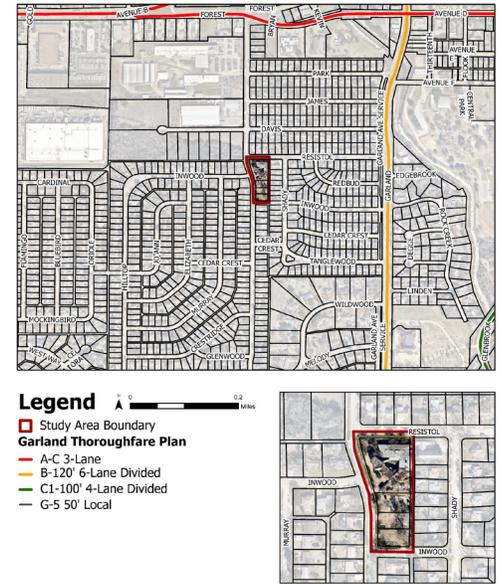
## ASSESSMENT TO DATE

EXISTING CONDITIONS MAPPING

**Garland Las Brisas Small Area Plan**  
Existing Parcel Sizing



**Garland Las Brisas Small Area Plan**  
Existing Transportations Systems



EXISTING CONDITIONS MAPPING

**Garland Las Brisas Small Area Plan**  
Existing Tree Covering

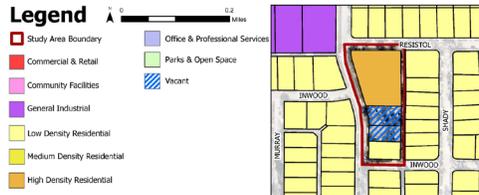
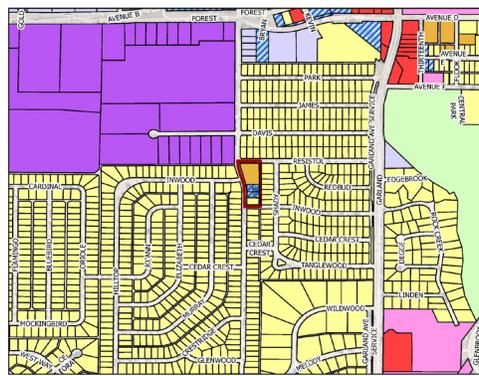


**Garland Las Brisas Small Area Plan**  
Existing and Future Parks and Trails

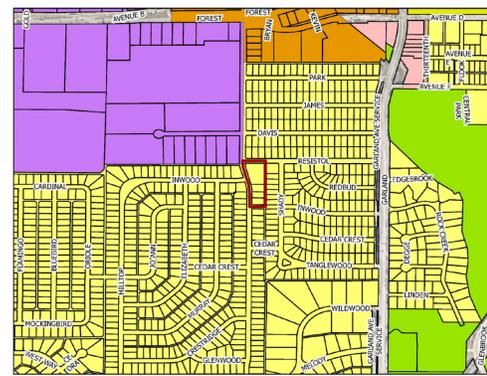


EXISTING  
CONDITIONS  
MAPPING

**Garland Las Brisas Small Area Plan**  
Existing Land Use

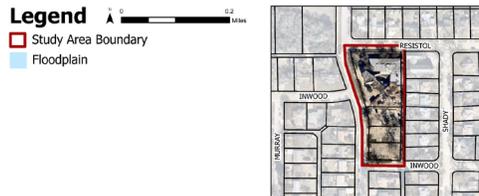


**Garland Las Brisas Small Area Plan**  
Future Land Use

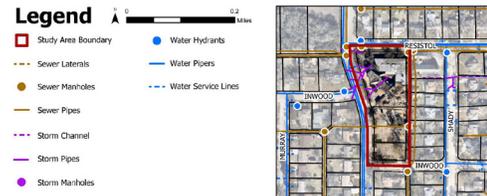
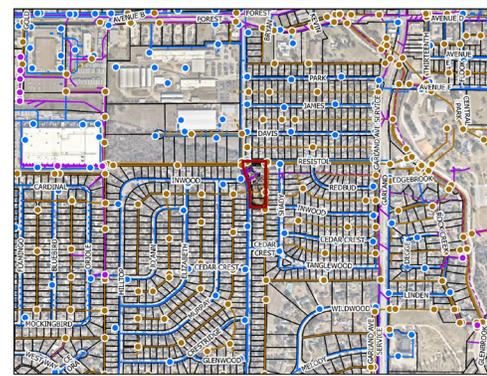


EXISTING  
CONDITIONS  
MAPPING

**Garland Las Brisas Small Area Plan**  
Existing Floodplain



**Garland Las Brisas Small Area Plan**  
Existing Utility Infrastructure



EXISTING  
CONDITIONS  
MAPPING

Garland Las Brisas Small Area Plan  
Existing Parcel Ownership



**Legend** 0 0.2 Miles  
 ■ Study Area Boundary  
 ● Parcel Ownership



Garland Las Brisas Small Area Plan  
Existing Vacant Land

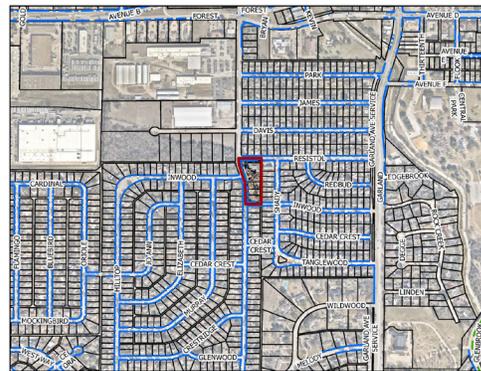


**Legend** 0 0.2 Miles  
 ■ Study Area Boundary  
 ▨ Vacant Land



EXISTING  
CONDITIONS  
MAPPING

Garland Las Brisas Small Area Plan  
Existing Multimodal



**Legend** 0 0.2 Miles  
 ■ Study Area Boundary  
 - - - Bike Lanes  
 — Sidewalks



Garland Las Brisas Small Area Plan  
Existing and Planned Public Facilities



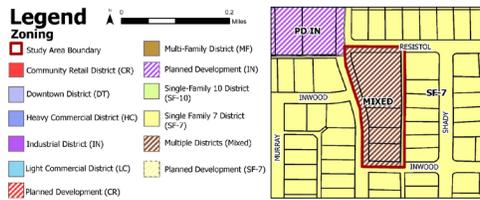
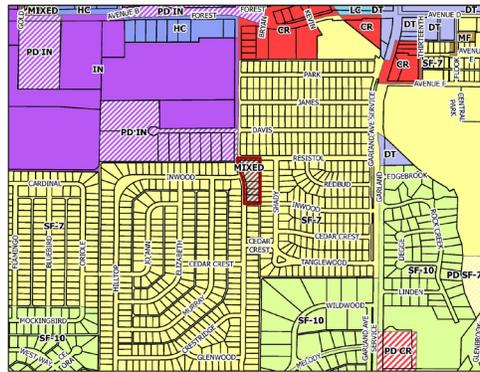
**Legend** 0 0.2 Miles  
 ■ Study Area Boundary  
**Facilities**  
 ● Courts  
 ● Police  
 ● Water  
 ■ City Owned Properties  
 ■ City Park





EXISTING  
CONDITIONS  
MAPPING

Garland Las Brisas Small Area Plan  
Existing Zoning Map



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MARKET PROFILE

# WHY DO A MARKET ANALYSIS?

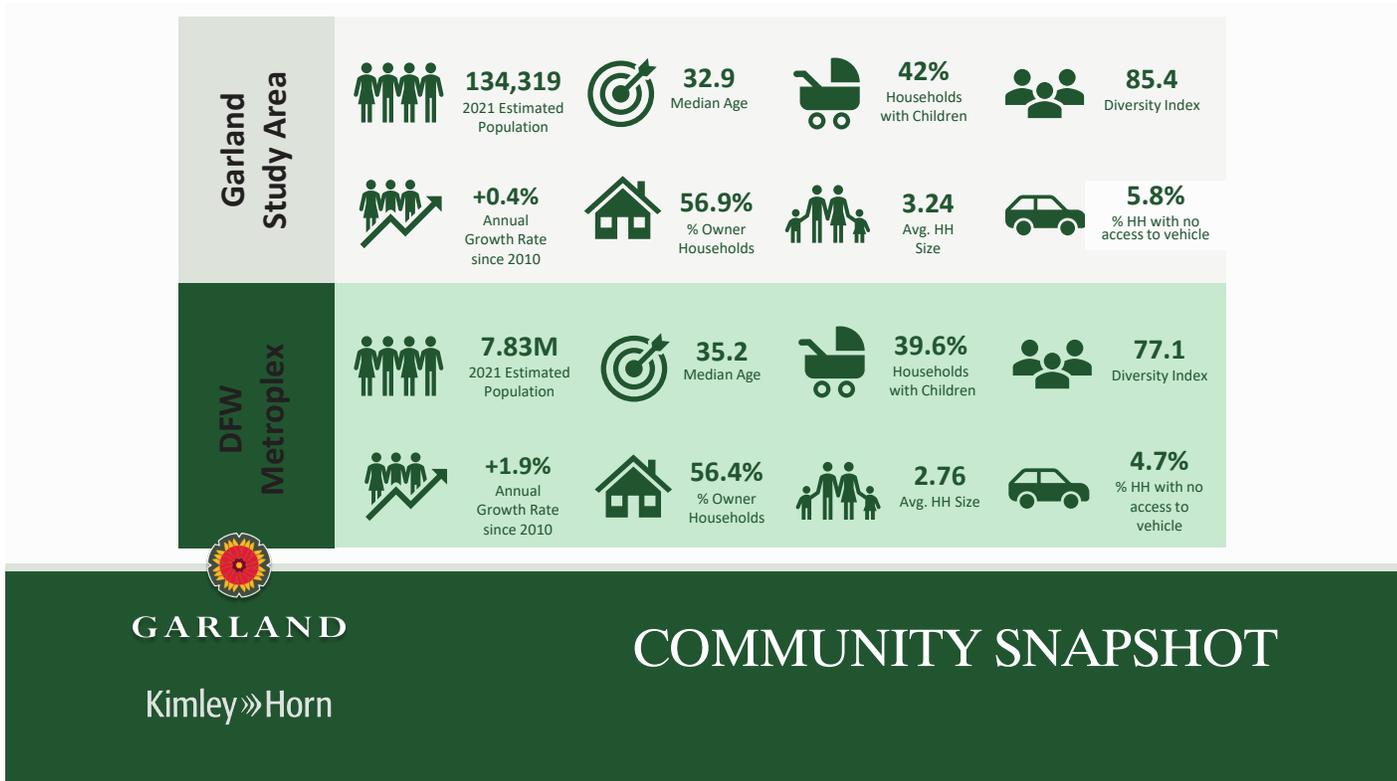
- Establish a baseline of community-specific information

*Where are we today?*

- Identify unique advantages for Garland and understand weaknesses

*Where are we going? Where should we be going?*

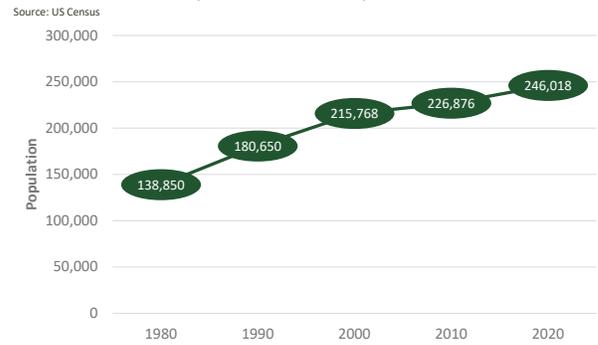
- Inform near-, mid-, and long-term strategies for the future



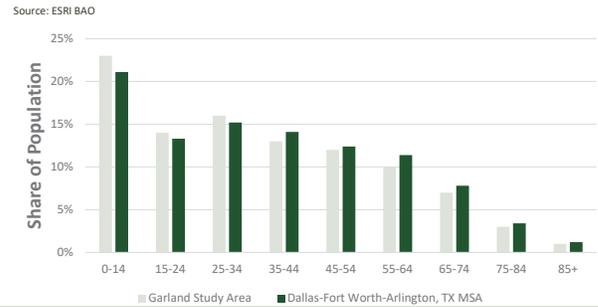
## POPULATION TRENDS

- Population growth in the City of Garland has been steady over the last several decades
- The more specific Garland Study Area increased by .4% since 2010.
- When compared to the Metroplex, the Study Area has slightly higher shares of children and residents aged 35-54 demonstrating attractiveness to families

**POPULATION TRENDS, CITY OF GARLAND, 1980-2020**



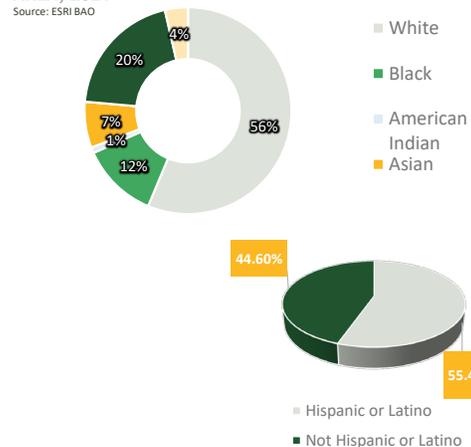
**COMPARISON OF SHARE OF POPULATION BY AGE, 2021**



## POPULATION CHARACTERISTICS

- Approximately 56.3% of Study Area residents identify as White
- Based on US Census reporting, people of Hispanic origin may identify with any race and may select one or more categories; 55.4% of residents in the Study Area have Hispanic origin
- Diversity Index provides a score between 0 (all residents belong to one racial/ethnic group) and 100 (many racial/ethnic groups represented)
  - The Study Area has a Diversity Index of 85.4
  - Measure is higher than 77.1 for the MSA

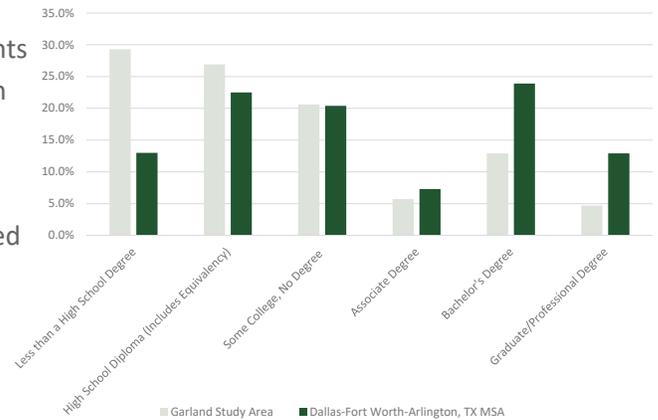
**SHARE OF RESIDENTS BY ETHNICITY, GARLAND STUDY AREA, 2021**



# POPULATION CHARACTERISTICS

- Educational attainment is for residents 25 years and older
- Garland Study Area has lower shares of residents holding a Bachelors and Graduate degrees when compared to the region
- Approximately 17.3% of residents in the Study Area have at least a Bachelor’s Degree, compared to 36.8% for the Metroplex

**COMPARISON OF SHARE OF EDUCATIONAL ATTAINMENT, 2021**  
Source: ESRI BAO



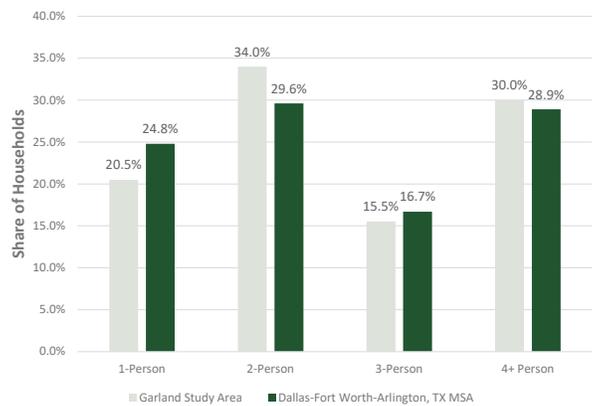
# HOUSEHOLD CHARACTERISTICS

- Household sizes are larger than the region
- Nearly one-half of all households have children living at home
- Larger households are the most prevalent in the Study Area

**AVERAGE HOUSEHOLD SIZE, 2021**  
Source: ESRI BAO



**COMPARISON OF SHARE OF HOUSEHOLDS BY SIZE, 2021**  
Source: ESRI BAO



# INCOME CHARACTERISTICS

- Median household income in the Study Area is lower than the region
- Households earning \$50-\$75k represent the largest share in the Study Area

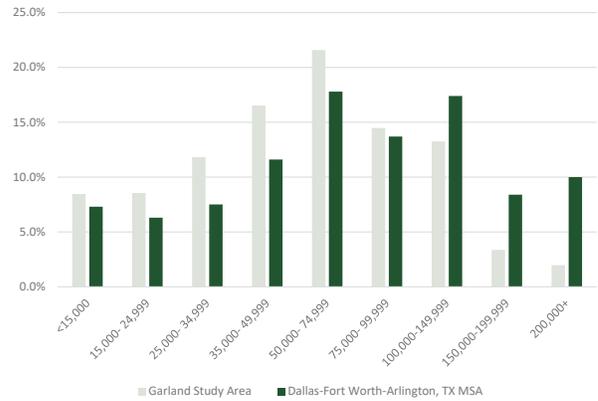
## MEDIAN HOUSEHOLD INCOME, 2021

Source: ESRI BAO



## COMPARISON OF HOUSEHOLDS BY INCOME, 2021

Source: ESRI BAO

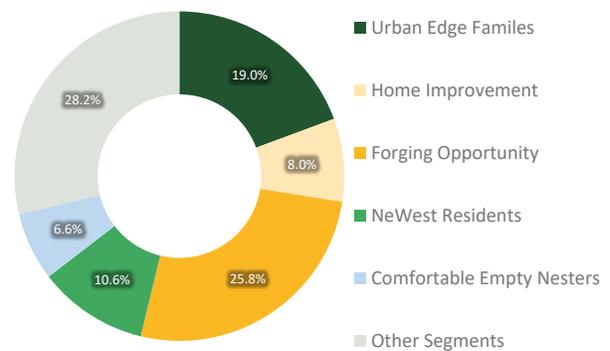


# PSYCHOGRAPHICS

- Puts a ‘face’ on the numbers
- In addition to demographic information, includes preferences on housing, spending, and labor force
- 67 segments across the US
- Used by developers and retailers to understand the character of a community

## TAPESTRY SEGMENTATION FOR GARLAND STUDY AREA, 2021

Source: ESRI BAO



### FORGING OPPORTUNITY



**25.8%**  
of area households

- Young families with children or single-parent with multiple generations living in one house
- More than one in four households in poverty
- Spending focused on necessities and few residents have investments
- Employment concentrated in skilled trades
- Primary focus is on family

### URBAN EDGE FAMILIES



**19.0%**  
of area households

- Younger married couples with children and often extended family
- Affordable single-family housing outside the city
- Median household income slightly below-average
- High labor force participation with long commute times
- Spending is focused on necessities



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# PSYCHOGRAPHICS

Area	Businesses	Jobs	Largest Sector	% Adults with Bachelor's Degree +	White Collar Occupation	Median Home Value	Median HH Income	Percent of Income for Mortgage
<b>Garland Study Area</b>	5,318	62,699	15.9% Construction	17.5%	44.4%	\$183,945	\$53,714	14.4%
<b>Dallas Metroplex</b>	267,339	3.47M	14.0% Healthcare	36.8%	65.4%	\$266,838	\$73,903	15.2%

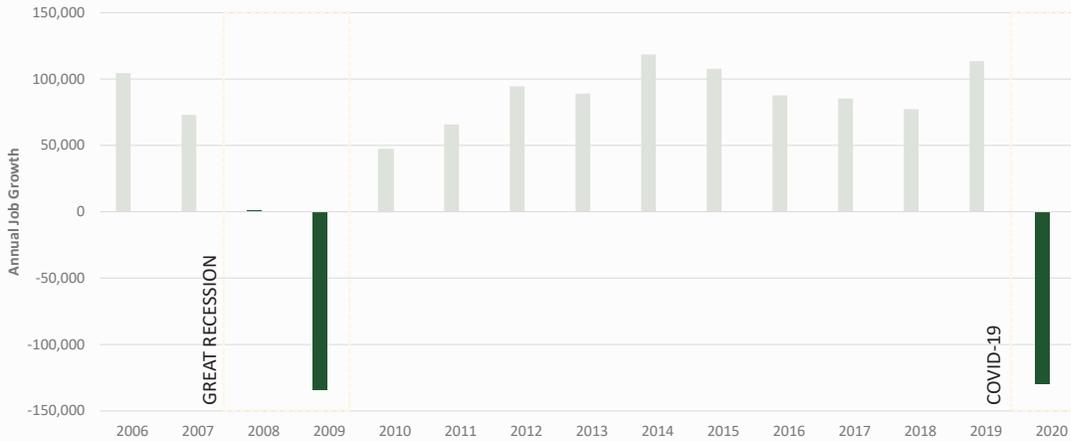


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# ECONOMIC & PROSPERITY SNAPSHOT

### ANNUAL JOB GROWTH IN DFW METROPLEX, 2006-2020

Source: Texas LMI



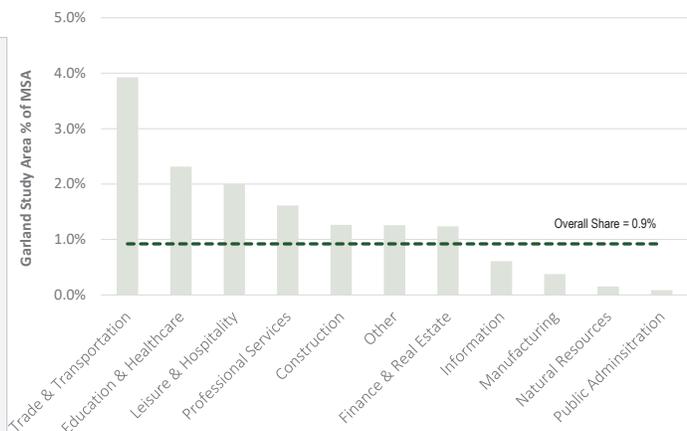
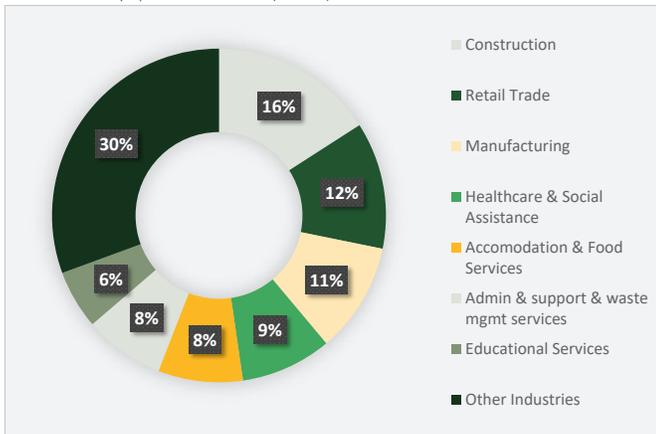

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## REGIONAL JOB GROWTH

## EMPLOYMENT IN GARLAND

### SHARE OF GARLAND STUDY AREA JOBS BY INDUSTRY, 2021

Source: ESRI ACS Key Population & Household Facts (2015-2019)

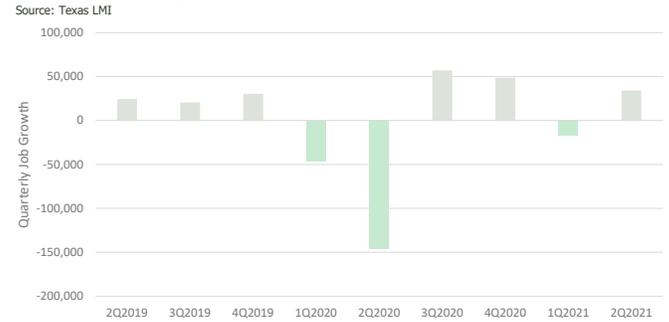


# COVID-19 JOB RECOVERY

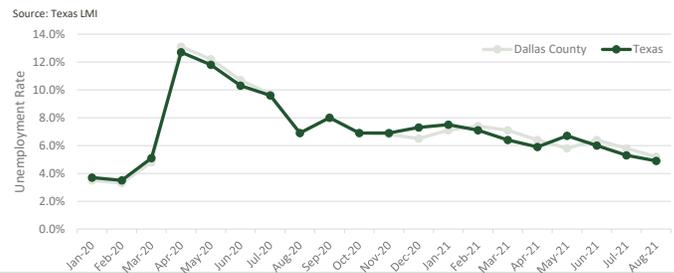


- COVID-19 pandemic resulted in rapid job losses across the United States
- Drastic reduction in business and personal travel
- Leisure and Hospitality jobs impacted immediately and have had longer-term recovery
- Despite continued recovery, Dallas County still has ~70,000 fewer jobs when compared to the start of the pandemic

## ANNUAL QUARTERLY JOB GROWTH, DALLAS COUNTY, 2019-2021

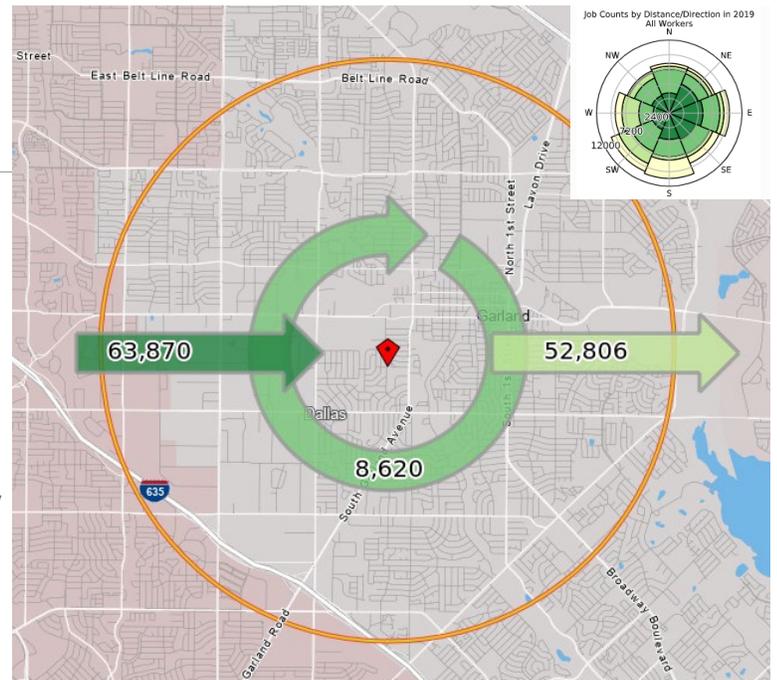


## UNEMPLOYMENT RATE TRENDS, DALLAS COUNTY, 2020-2021



# COMMUTING TRENDS

- Strong in-commuting driven by outside residents traveling to the study area for their employment.
- People that live outside the Garland Study Area are coming into the study area to work while people that live within the study area are leaving to go to work.
- May indicate a mismatch in housing and job opportunity. More people are going into the site to work, which indicates Garland’s growth as a job center since 2009.
- Share of residents out commuting has remained steady the last ten years
- Travel patterns favor southwestern movement toward Dallas; 44% of residents commute less than 10 miles



# KEYPAD POLLING

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PLEASE VISIT [MENTI.COM](https://www.menti.com)

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PUT IN CODE **7760 6212**

PLEASE VISIT [MENTI.COM](https://www.menti.com) PUT IN CODE [7760 6212](https://www.menti.com)

## STREET DESIGN

○ Please rank the following items that should be included with the future road network (Marion, Resistol, and Inwood).

- Sidewalks
- Bicycle lanes
- Crosswalks
- On-street Parking
- Street trees
- Pedestrian-Level Street lighting
- Street furniture (i.e., benches, trash receptacles, bike racks, etc.)



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## SPEED MANAGEMENT

○ We have heard feedback that drivers often speed along Resistol and other streets surrounding the site. What elements should we use to address speed issues around the Las Brisas property? Please RANK the following elements based on what you think would be most appropriate for the site.

**SPEED BUMPS**



**RAISED CROSSWALKS**



**TEXTURED CROSSWALKS**



**SIGNAGE**



**BULB-OUTS**



**ON-STREET PARKING**



**STREET NARROWING**



**LOWERING SPEED LIMIT**



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## DRAINAGE/CREEK

○ How do you envision the creek being improved in the future? Below are several pictures showing different creeks in urban areas. Please choose TWO PICTURES you think embodies your vision for the future of this creek.



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## SAFETY

○ “How important are these elements to improving/sustaining safety for the future park or public facility?”

- Lighting
- Visibility
- Access
- Maintenance



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## PARK-SPECIFIC AMENITIES

---

- What are your TOP THREE favorite amenities for the future park that is proposed on this site?
  - Trail system (wide sidewalks)
  - Benches
  - Grills
  - Picnic Tables
  - Public Plaza or Gathering Space
  - Playground
  - Pavilion or gazebo
  - Shade structures
  - Dog park
  - Creek Feature
  - Shade trees

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## OTHER SITE AMENITIES

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- What are your TOP THREE favorite amenities for the rest of the future site?
  - Decorative Pedestrian Lighting
  - Community Garden
  - Decorative Water Fountain/Feature
  - Public/Local art
  - Area for food trucks
  - Parking lot
  - On-street parking
  - Connected sidewalks
  - Bike lanes
  - Trails or wide sidewalks
  - Pedestrian bridge

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## PROGRAMMING

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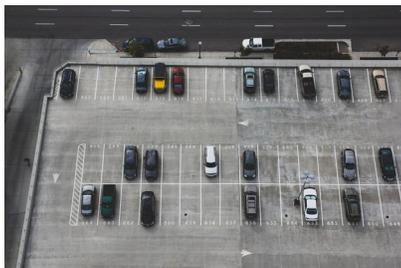
- What type of regularly-scheduled (monthly, bi-monthly, etc.) neighborhood event would you like to see be held in this future park to enhance neighborhood vitality? Pick your top THREE favorite programming events.
  - Food truck event
  - Farmers market
  - “Movie on the Lawn” event
  - Exercise classes
  - Senior-specific event
  - Pet-specific events (i.e., dog training classes, shelter-sponsored events)
  - Small concerts
  - Art events
  - After-School Programs for Children

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## PARKING

---

- How should the city approach parking for the proposed park?
  - The City should create a parking lot somewhere on the site.
  - The City should line the site with on-street parking (parallel or angled).
  - The City should create a combination of both on street and surface lot parking.



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## PARKING

- Should parking on a future proposed park be metered/time-restricted?
  - Yes
  - No



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## FUTURE LAND USE (NON-PARK)

- If a portion of the site was to NOT develop into a park, which of the following land uses below would be suitable for the site? Please rank the following land uses from MOST APPROPRIATE to LEAST APPROPRIATE.
  - Senior/Assisted Living
  - Tiny homes
  - Houses facing the park
  - Community facility (hall, gathering space, civic center, etc.)
  - Senior Center
  - Small Recreation Center
  - Coffee Shop
  - Single-Family Detached Homes
  - Townhomes

# IMPLEMENTING THE SWOT ANALYSIS

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FLIP CHART EXERCISE



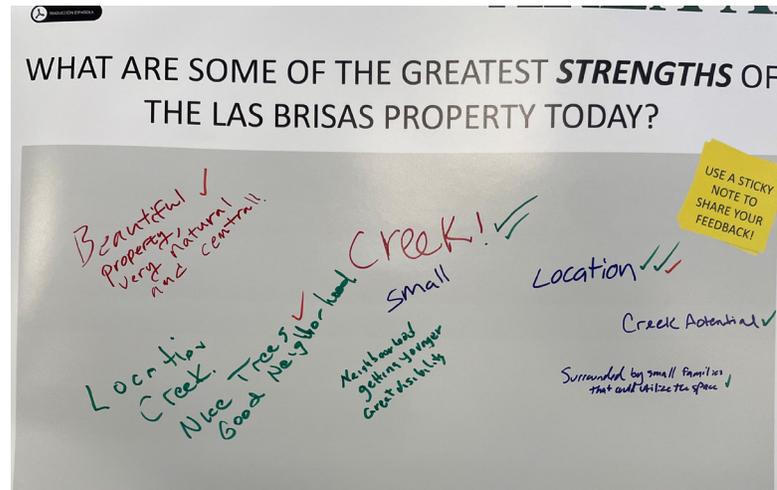
## THINGS TO CONSIDER

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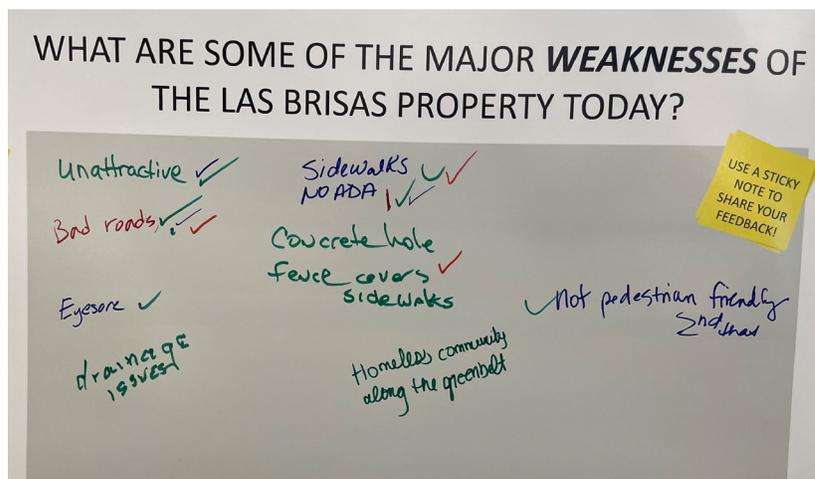
- How do we enhance our strengths, improve our weaknesses, capitalize on our opportunities, and mitigate our threats?



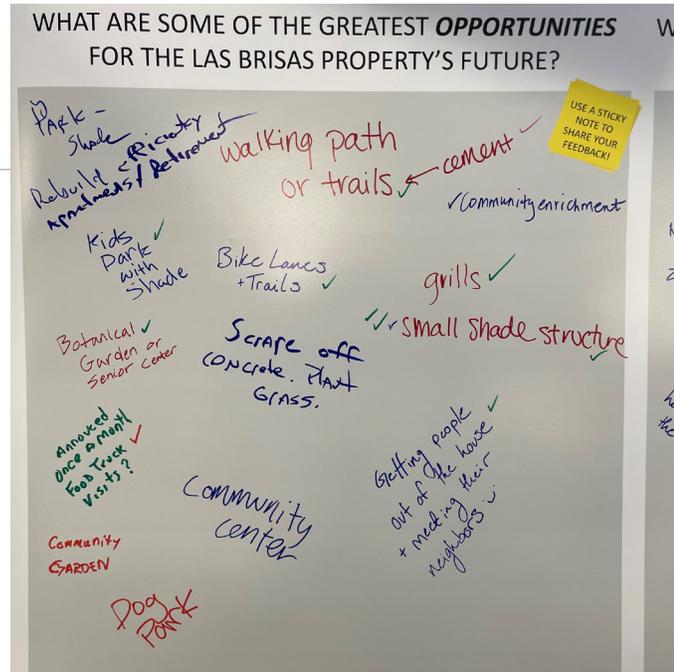
# STRENGTHS



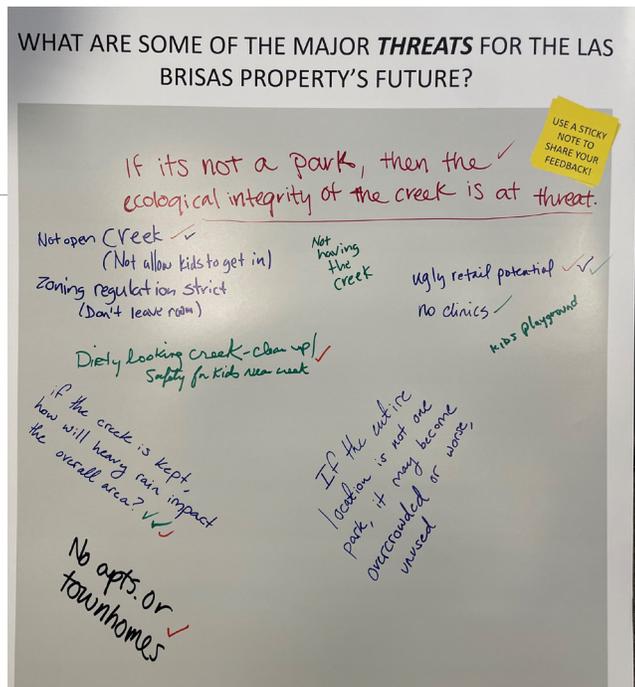
# WEAKNESSES



# OPPORTUNITIES



# THREATS



# NEXT STEPS

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## NEXT STEPS

### PHASE I

TASK 1 – PROJECT INITIATION

TASK 2 – DATA COLLECTION

TASK 3 – MAPPING

TASK 4 – MARKET CONDITIONS & ANALYSIS

### PHASE II

TASK 5 – PUBLIC ENGAGEMENT

- STAKEHOLDER INTERVIEWS
- TOWN HALL/CHARETTE
- COMMUNITY OUTREACH
- ONLINE SURVEY

### PHASE III

TASK 6 – DEVELOPMENT CONCEPT

TASK 7 – IMPLEMENTATION STRATEGY

### PHASE IV

TASK 8 – FINAL REPORT & PLANS

TASK 9 – FINAL ADOPTION



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# THE PROJECT SURVEY IS LIVE!

<https://www.surveymonkey.com/r/C55TS6J>

THANK YOU!

# ANALYSIS

WHAT ARE SOME OF THE MAJOR **WEAKNESSES** OF THE LAS BRISAS PROPERTY TODAY?

Handwritten notes on the left side of the whiteboard, including "sidewalks", "concrete walk", "fence", "open", and "R.D. Banner D.O. DENNER".

# AREA ANALYSIS

WHAT ARE SOME OF THE GREATEST **OPPORTUNITIES** FOR THE LAS BRISAS PROPERTY'S FUTURE?

WHAT ARE SOME OF THE MAJOR **THREATS** FOR THE LAS BRISAS PROPERTY'S FUTURE?

Handwritten notes on the right side of the whiteboard, including "path", "cement", "community", "ade structure", "Wetmore Creek", "Zoning regulation on street", "Daily leaving creek clean up!", "If the creek is kept clean will leaving rain impact the overall area?", "ugly road parcel", "no chairs", "If the creek is kept clean will leaving rain impact the overall area?", "If the creek is kept clean will leaving rain impact the overall area?".



**GARLAND**  
TEXAS MADE HERE

**Kimley»Horn**

# LAS BRISAS SMALL AREA PLAN

# LAS BRISAS PROPERTY

## SPECIAL AREA STUDY

### CITY COUNCIL WORK SESSION



GARLAND

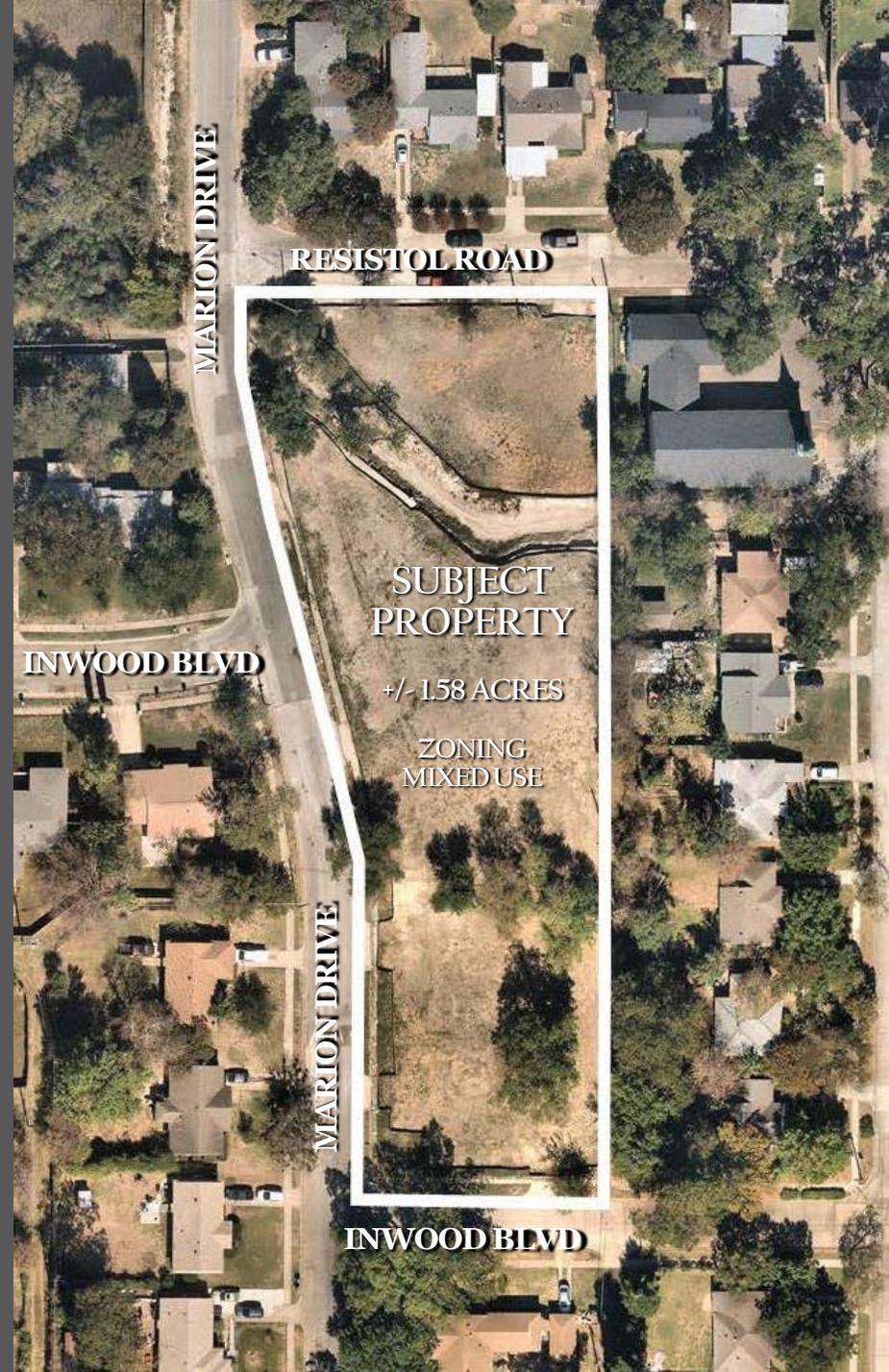
January 9, 2023

# OVERVIEW

- I. INTRO
- II. COMMUNITY ENGAGEMENT ACTIVITIES
- III. DEVELOPMENT SCENARIOS
- IV. RESIDENT FEEDBACK
- V. SUMMARY
- VI. NEXT STEPS



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Kimley»Horn



# BACK TO SCHOOL 07.29.21



# KEEP GARLAND BEAUTIFUL LITTER CLEANUP 10.23.21



# RETREET 11.13.21



# FAREWELL PARTY 03.24.22



WHERE THE HEART IS

## Garland Clinic/Las Brisas Farewell

Thursday, March 24  
5 to 7 p.m.  
1002 Marion Dr, Garland

[Click Here](#)



# FAREWELL PARTY 03.24.22



# COMMUNITY ENGAGEMENT ACTIVITIES

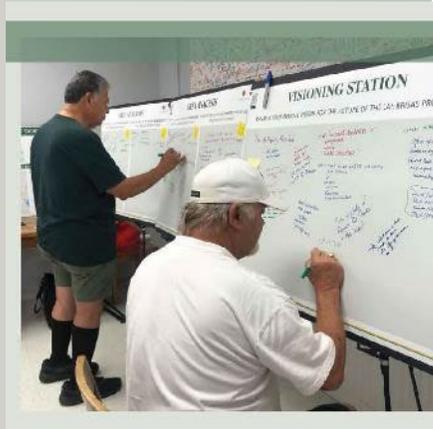
- CITY STAFF KICKOFF
- CHARENTE WORKSHOP
- FOCUS GROUP DISCUSSION
- SCENARIO REVIEWS



GARLAND

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Engagement Photos



## PUBLIC ENGAGEMENT HIGHLIGHTS

### SWOT Analysis

#### Strengths

- The creek
- Great site location
- Mature trees in the area
- Located in a great neighborhood

#### Weaknesses

- Needs aesthetic improvements
- Drainage issues
- Roads surrounding the site in need of upgrades/traffic calming
- Poor pedestrian access

#### Opportunities

- Park development for community
- Walking paths and trails
- Playground for kids
- Shade structures and other amenities
- Creek redevelopment

#### Threats

- Flooding and drainage issues with the creek
- Upkeep, maintenance, and sustained aesthetics of the creek
- Potential park overcrowding

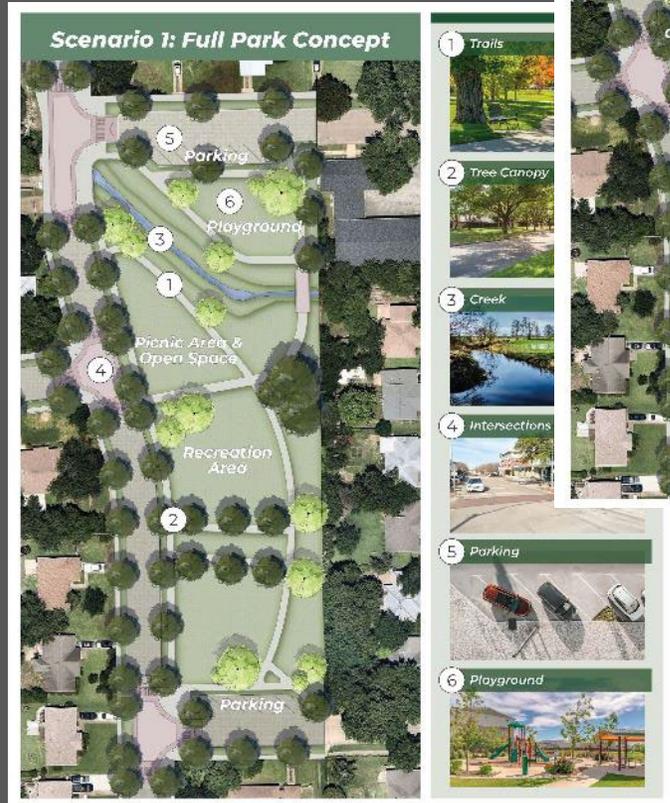
### Charrette Workshop



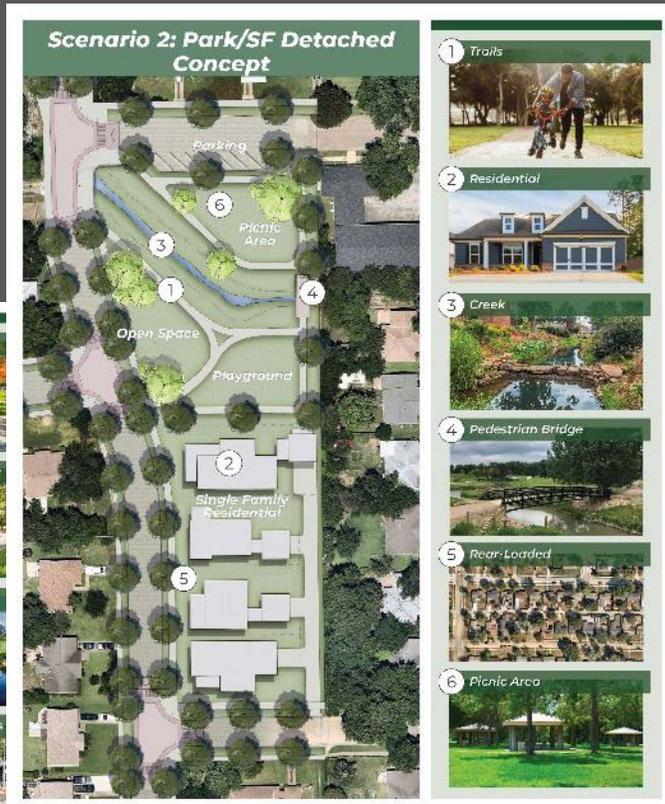
### Focus Group



# DEVELOPMENT SCENARIOS



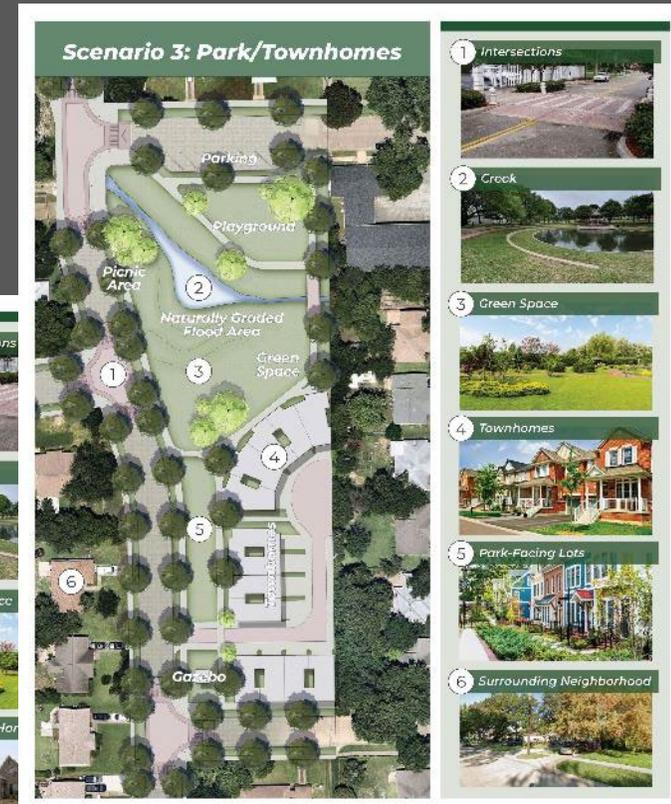
SCENARIO 1



SCENARIO 2



SCENARIO 3



# DEVELOPMENT SCENARIOS



Proposed Park Concept Rendering

## SCENARIO 1 – FULL PARK



# CONSIDERATIONS

## MAJOR FEATURES

- FULL PARK SCENARIO
- ACTIVE PROGRAMMED SPACE
- CREEK
- TRAILS
- PARKING
- CROSSWALK ENHANCEMENTS

## ADVANTAGES

- LARGE COMMUNITY GATHERING SPACE
- AMENITY TO THE COMMUNITY
- PROGRAMMING OPPORTUNITIES

## DISADVANTAGES

- DEVELOPMENT POTENTIAL IGNORED

## IMPLEMENTATION

### Scenario 1: Full Park Concept

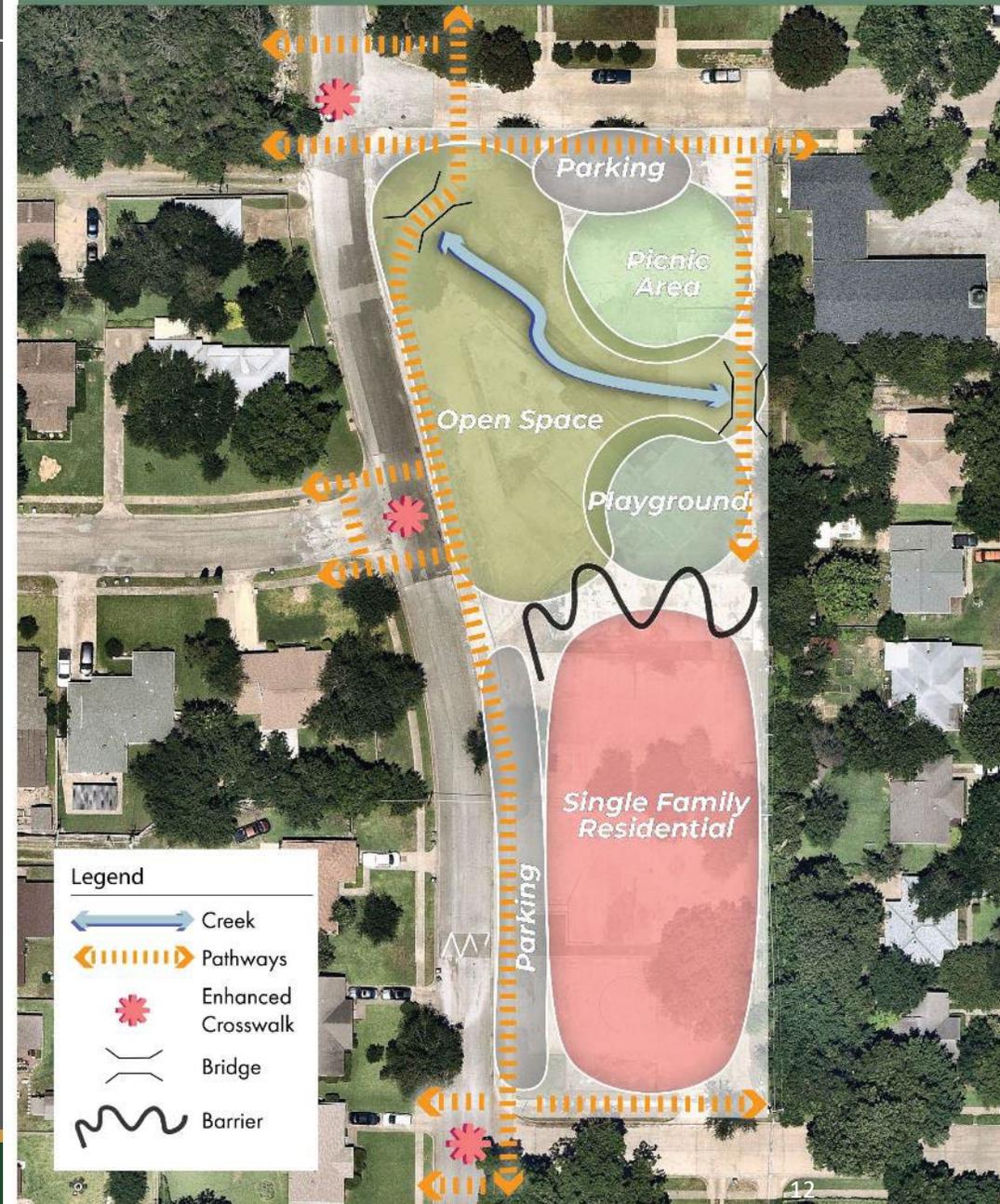


# DEVELOPMENT SCENARIOS



Proposed Park/SF Residential Concept Rendering

## Scenario 2 Diagram



## SCENARIO 2 – PARK/SF DETACHED

# CONSIDERATIONS

## MAJOR FEATURES

- SPLIT PARK WITH SF-7 RESIDENTIAL
- LOT SIZES SIMILAR AND COMPATIBLE WITH ADJACENT DEVELOPMENT
- CREEK
- TRAILS
- PARKING
- CROSSWALK ENHANCEMENTS

## ADVANTAGES

- PROPERTY OWNER GETS A RETURN ON INVESTMENT
- EYES ON THE PARK
- SMALL NEIGHBORHOOD SCALE PARK

## DISADVANTAGES

- SMALLEST PARK PROPOSED
- LIMITED PROGRAMMING OPPORTUNITIES
- FOOTPRINT OF HOUSES ARE LARGER THAN EXISTING CONTEXT

## IMPLEMENTATION

## Scenario 2: Park/SF Detached Concept



### 1 Trails



### 2 Residential



### 3 Creek



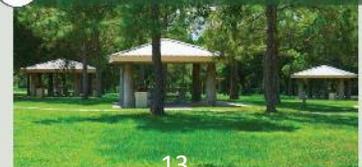
### 4 Pedestrian Bridge



### 5 Rear-Loaded



### 6 Picnic Area



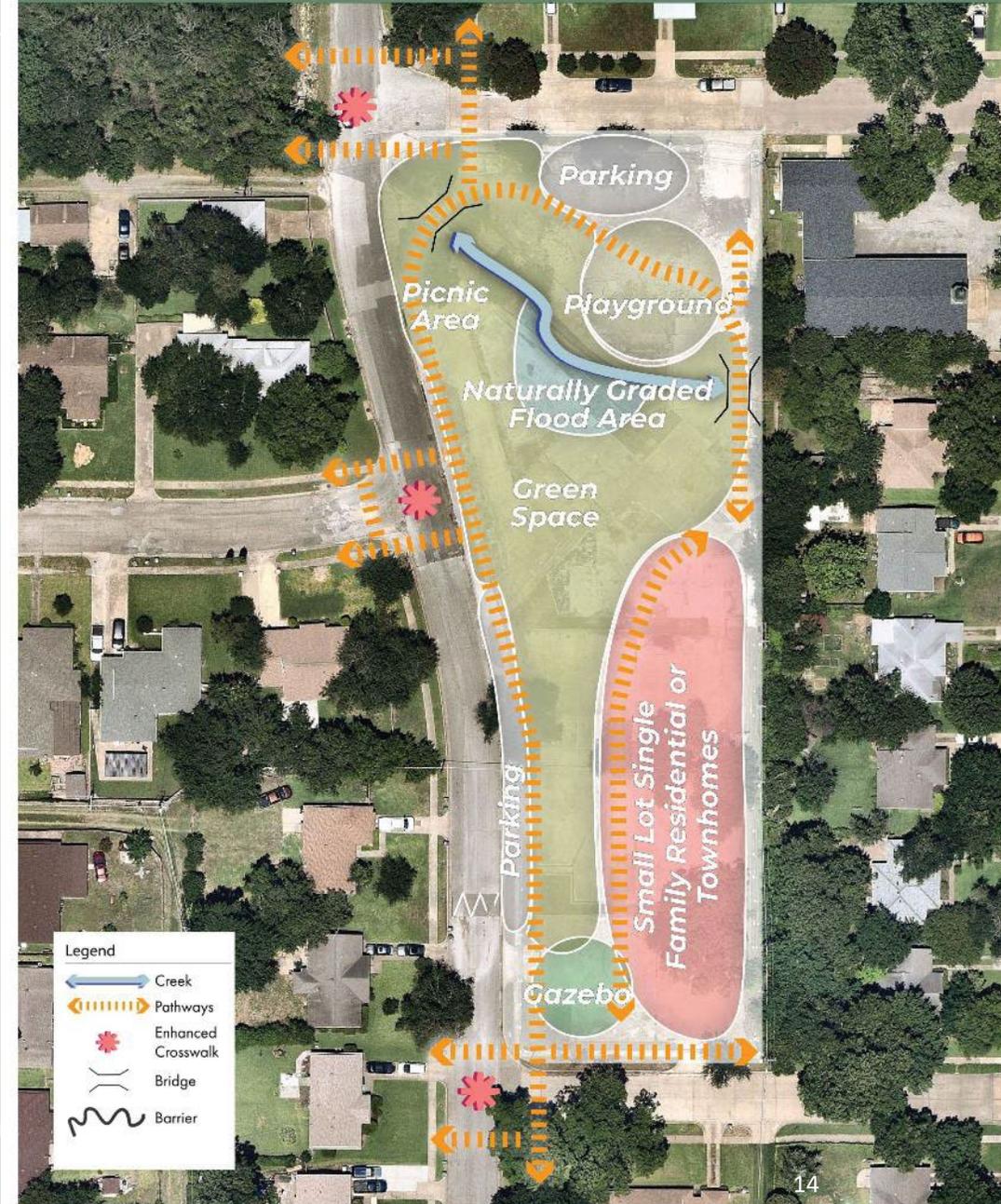
# DEVELOPMENT SCENARIOS



Proposed Park/Small Lot Residential Concept Rendering

## SCENARIO 3 – PARK/ SMALL LOT RESIDENTIAL

### Scenario 3 Diagram



# CONSIDERATIONS

## MAJOR FEATURES

- SPLIT PARK WITH DETACHED SMALL LOT RESIDENTIAL
- FOOTPRINTS SIMILAR AND COMPATIBLE WITH ADJACENT DEVELOPMENT
- SMALL LOTS ALLOW HOUSES ON GREEN
- PASSIVE PARK ALONG ENTIRETY OF MARION DRIVE
- CREEK
- TRAILS
- PARKING
- CROSSWALK ENHANCEMENTS

## ADVANTAGES

- PROPERTY OWNER GETS A RETURN ON INVESTMENT
- EYES ON THE PARK
- SMALL NEIGHBORHOOD SCALE PARK
- GRADED CREEK AS NATURAL AMENITY AND FEATURE

## DISADVANTAGES

- ZONING

## IMPLEMENTATION

### Scenario 3: Park/Small Lot Residential

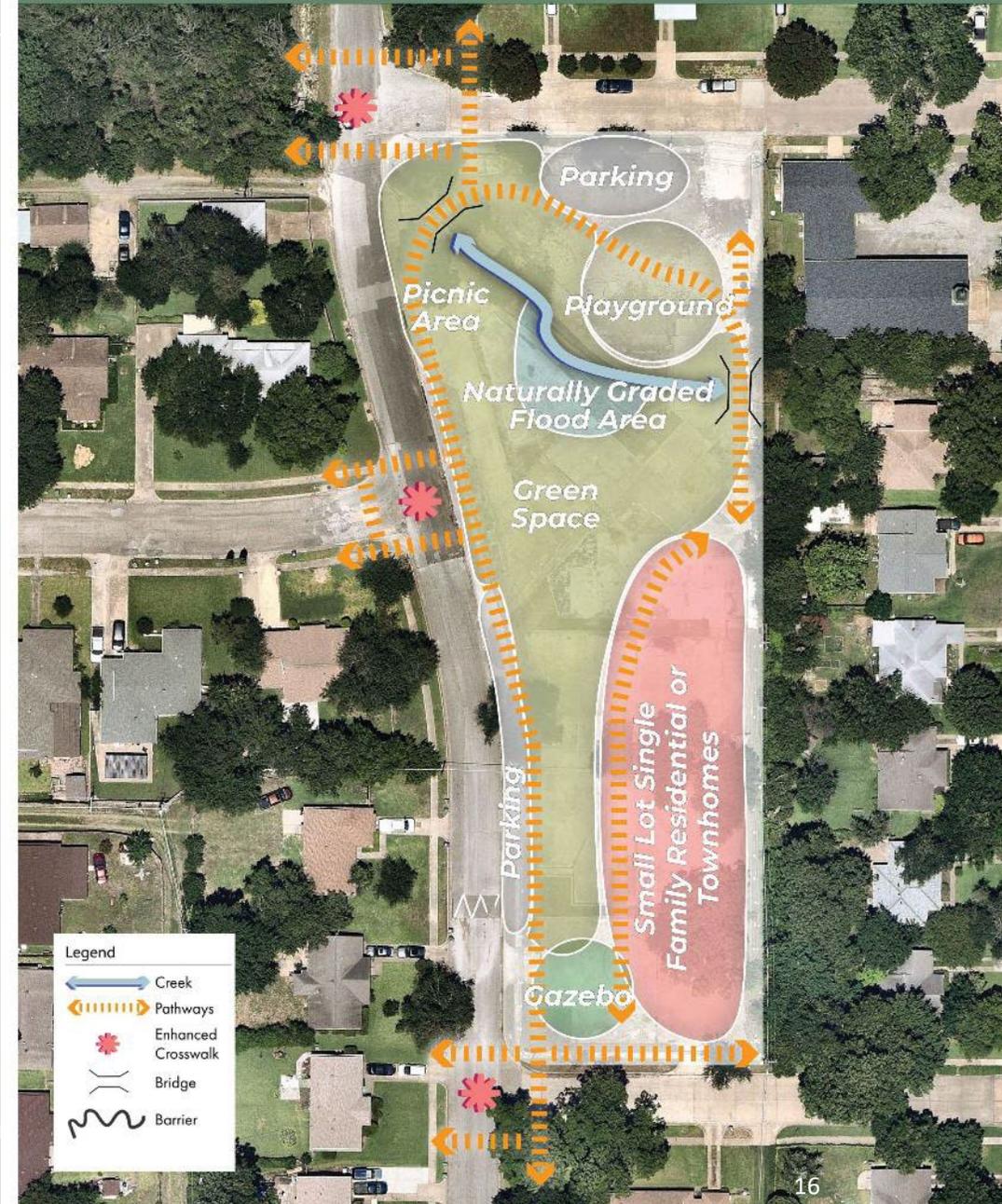


# DEVELOPMENT SCENARIOS



Proposed Park/Townhome Concept Rendering

## Scenario 3 Diagram



## SCENARIO 3 – PARK/TOWNHOMES

# CONSIDERATIONS

## MAJOR FEATURES

- SPLIT PARK WITH TOWNHOMES
- SMALL LOTS ALLOW HOUSES ON GREEN
- PASSIVE PARK ALONG ENTIRETY OF MARION DRIVE
- CREEK
- TRAILS
- PARKING
- CROSSWALK ENHANCEMENTS

## ADVANTAGES

- LARGEST RETURN ON INVESTMENT (PARK AND DEVELOPMENT)
- EYES ON THE PARK
- SMALL NEIGHBORHOOD SCALE PARK
- GRADED CREEK AS NATURAL AMENITY AND FEATURE

## DISADVANTAGES

- CONTEXT

## IMPLEMENTATION

### Scenario 3: Park/Townhomes



#### 1 Intersections



#### 2 Creek



#### 3 Green Space



#### 4 Townhomes



#### 5 Park-Facing Lots



#### 6 Surrounding Neighborhood





# LAS BRISAS SMALL AREA PLAN

CITY OF GARLAND, TEXAS

Adopted on XX of XXXXXX, 2022

**Project Address:**  
1002 Marion Drive  
Garland, TX 75042

Created by the City of Garland in  
partnership with Kimley-Horn and  
Associates.

**Kimley»Horn**



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- 38. CHAPTER 6: DEVELOPMENT SCENARIO CONSIDERATIONS
- 60. CHAPTER 7: IMPLEMENTATION

**COLLECTION**

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- 108. APPENDIX



**ROBERT VERA**  
District 6  
Garland City Council

**NOTE FROM COUNCILMAN ROBERT VERA**

The City of Garland is excited to present the Small Area Plan for the Las Brisas property. This property has an opportunity to be a unique community asset for the surrounding neighborhood, and this plan's vision will help create

a reality that is backed by community support. Thank you to all who participated in this planning process, either by taking the online survey or attending a local event. Together we have envisioned a bright future for the Las Brisas property.

**ROBERT VERA**

**OVERARCHING SITE ACTION ITEMS**

*Walkability Strategy: Construct connections to the existing neighborhood's sidewalk network that accommodates and prioritizes pedestrian access to promote multimodal mobility.*

**Action 1** Create ADA standards compliant, all new, multi-mode, multi-modal projects through the construction of highly visible, shared-use sidewalks.

**Scenario 1: Full Park Concept**

- 1 Trails
- 2 Tree Canopy
- 3 Creek
- 4 Intersections
- 5 Parking
- 5 Playground

**Areas for people of all age groups,**

**Construct trail network connections**

**Chapter 7: Implementation**



Kimley»Horn

# FINAL REPORT

# LAS BRISAS SMALL AREA PLAN

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Adopted on XX of XXXXXXX, 2022

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Garland, TX 75042

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Associates.*

**Kimley»Horn**



**GARLAND**  
TEXAS MADE HERE



**GARLAND**

Kimley»Horn

- City Council direction on scenario to pursue for plan adoption
- Return to City Council for plan adoption (February)
- Initiate design process for park space; further details on timeline, funding, and communication based on City Council direction (Q1)



**GARLAND**

**City Council Work Session Agenda**

**Meeting Date:** January 9, 2023

**Item Title:** Board and Commission Appointment

**Submitted By:** Courtney Vanover, Department Coordinator I, City Secretary

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**Summary:**

**Council Member Margaret Lucht**

- Paola Sanchez - Community Multicultural Commission
- 

**Attachments**

Paola Sanchez - CMC

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# GARLAND

TEXAS MADE HERE

**CITY OF GARLAND**  
**RECEIVED**  
JAN 04 2023  
**CITY SECRETARY**

## Application for City of Garland Boards/Commissions/Committees

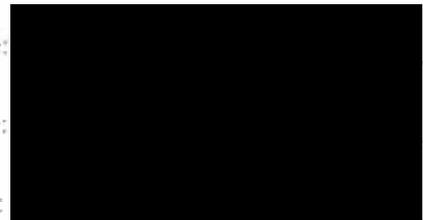
Return completed application to City Secretary's Office, 200 N. Fifth St., Garland, Texas 75040 | Email: [RDowley@GarlandTX.gov](mailto:RDowley@GarlandTX.gov)

Please Type or Print Clearly:

Date: 12/28/2022

Name: Paola Sanchez

Phone:



(Home)

Address: 801 Waikiki DDr

Phone:

(Other)

City, State, Zip: Garland, Tx, 75043

Email:

Resident of Garland for 21 years Resident of Texas for 21 years

✓ Dallas County Voter Registration Number [REDACTED] Garland City Council District Number 4

Have you ever been convicted of a felony?  Yes  No

Have you ever been convicted of a Class A misdemeanor?  Yes  No

Please list any experience that qualifies you to serve in the areas you have indicated.

-I have been part of Garland Association for Hispanic Affairs since 2018.

-I was part of the Garland Youth Council for 4 years in which I served the roles of

If you have previously served on a City Board or Commission, please specify and list dates of service.  
Garland Youth Council 2015-2019

List civic or community endeavors with which you have been involved.

I have volunteered with organizations such as the Garland Youth Council, GAFHA, Life Message Food Bank, and at Baylor Scott and White in Rowlett.

What is your educational background?

I graduated from Lakeview Centennial and Eastfield College with my associates in 2019. I then went to the University of North Texas and graduated with a B.A in biology and minor in chemistry.

What is your occupational experience?

I was a medical scribe from January of 2022 until October of 2022. I am currently an Academic Acceleration tutor for GISD.

I hereby affirm that all statements herein are true and correct.

*Paola Sanchez*

Board or Commission of first, second and third choice:		
<input type="checkbox"/> Board of Adjustment	<input type="checkbox"/> Garland Cultural Arts Commission	<input type="checkbox"/> Parks and Recreation Board
<input type="checkbox"/> Citizens Environmental and Neighborhood Advisory Committee	<input type="checkbox"/> Garland Youth Council **	<input type="checkbox"/> Plan Commission *
<input type="checkbox"/> Civil Service Commission	<input type="checkbox"/> Library Board	<input type="checkbox"/> Senior Citizens Advisory Committee
<input checked="" type="checkbox"/> Community Multicultural Commission	<input type="checkbox"/> Property Standards Board	<input type="checkbox"/> Unified Building Standards Commission

\*\* Garland Youth Council has a separate application

### FOR OFFICE USE ONLY

All Valorem Tax Status  
Utility Account Status  
C/O Suit/Claim Filed

Current ✓  
Current ✓  
Yes No ✓

Past Due \_\_\_\_\_  
Past Due \_\_\_\_\_

Date Appointed \_\_\_\_\_  
Appointed By \_\_\_\_\_  
Date Notified \_\_\_\_\_  
Disclosure Form Filed \_\_\_\_\_

Clerk Signature & Date

*Courtney Vanover*  
1.4.23