City *of* Tigard

Tigard Business Meeting –Agenda

TIGARD CITY COUNCIL

MEETING DATE AND TIME:	JULY 11, 2023 - 6:30 p.m. Business Meeting
MEETING LOCATION:	Hybrid - City of Tigard - Town Hall - 13125 SW Hall Blvd., Tigard, OR 97223 - See PUBLIC NOTICE below

PUBLIC NOTICE: In accordance with Oregon House Bill 2560, this will be a hybrid meeting where some Council, staff or public will participate in person and some will participate remotely.

How to comment:

- Written public comment may be submitted electronically at www.tigard-or.gov/Comments by noon the day before the meeting date.
- If attending the meeting in person, please fill out the public comment sign-in sheet at the front of the room and come to the microphone when your name is called.
- If you prefer to call in, please call 503-966-4101 when instructed to be placed in the queue. We ask that you plan on limiting your testimony to three minutes.
- You may comment by video through the Teams app. Go to this link to learn how to participate by video: July 11, 2023 Council Meeting (https://www.tigard-or.gov/Home/Components/Calendar/Event/3943/372).

Upon request, the City will endeavor to arrange for the following services:

- Qualified sign language interpreters for persons with speech or hearing impairments; and
- Qualified bilingual interpreters.

Since these services must be scheduled with outside service providers, it is important to allow as much lead time as possible. Please notify the City of your need by 5:00 p.m. on the Thursday preceding the meeting by calling: 503-718-2419 (voice) or 503-684-2772 (TDD - Telecommunications Devices for the Deaf).

SEE ATTACHED AGENDA

VIEW LIVESTREAM ONLINE: https://www.tigard-or.gov/boxcast

CABLE VIEWERS: The City Council meeting will be shown live on Channel 21 (1st Tuesdays) and Channel 28 (2nd & 4th Tuesdays) at 6:30 p.m. The meeting will be rebroadcast at the following times on Channel 28:

Thursday 6:00 p.m. Friday 10:00 p.m. Saturday 7:30 p.m. Sunday 11:30 a.m. Monday 6:00 a.m.

City *of* Tigard

Tigard Business Meeting –Agenda

TIGARD CITY COUNCIL
MEETING DATE AND TIME: JULY 11, 2023 - 6:30 p.m. Business Meeting
MEETING LOCATION: Hybrid - City of Tigard - Town Hall - 13125 SW Hall Blvd., Tigard, OR 97223

6:30 PM

1. BUSINESS MEETING

   A. Call to Order

   B. Roll Call

   C. Pledge of Allegiance

   D. Call to Council and Staff for Non-Agenda Items

2. PROCLAMATIONS AND RECOGNITION

   A. PARK & RECREATION MONTH PROCLAMATION **6:35 p.m. estimated time**

3. PUBLIC COMMENT **6:40 p.m. estimated time**

   A. Follow-up to Previous Public Comment

   B. Tigard Area Chamber of Commerce

   C. Police Chief/Police Department Update

   D. Public Comment – Written

E. Public Comment – In Person

F. Public Comment – Phone-In

G. Public Comment – Video

4. CONSENT AGENDA: (Tigard City Council) The Consent Agenda is used for routine items including approval of meeting minutes, contracts or intergovernmental agreements. Information on each item is available on the city's website in the packet for this meeting. These items may be enacted in one motion without separate discussion. Council members may request that an item be removed by motion for discussion and separate action.

A. APPROVE MEETING MINUTES
- June 13, 2023
- June 20, 2023
- June 27, 2023

- *Consent Agenda - Items Removed for Separate Discussion: Any items requested to be removed from the Consent Agenda for separate discussion will be considered immediately after the Council has voted on those items which do not need discussion.*

5. HALL BOULEVARD CORRIDOR CONCEPTUAL DESIGN REPORT BRIEFING **6:55 p.m. estimated time**

6. TIGARD RESILIENCE UPDATE **7:40 p.m. estimated time**

7. CLIMATE GOAL UPDATE **8:10 p.m. estimated time**

8. NON-AGENDA ITEMS

9. ADMINISTRATIVE REPORT **8:40 p.m. estimated time**

10. EXECUTIVE SESSION: The Tigard City Council may go into Executive Session. If an Executive Session is called to order, the appropriate ORS citation will be announced identifying the applicable statute. All discussions are confidential and those present may disclose nothing from the Session. Representatives of the news media are allowed to attend Executive Sessions, as provided by ORS 192.660(4), but must not disclose any information discussed. No Executive Session may be held for the purpose of taking any final action or making any final decision. Executive Sessions are closed to the public.

11. ADJOURNMENT **8:45 p.m. estimated time**

AIS-5275 **2. A.**

Business Meeting

Meeting Date: 07/11/2023

Length (in minutes): 5 Minutes

Agenda Title: Park & Recreation Month Proclamation

Authored By: Jessica Love

Presented By:

Item Type: Proclamation

Public Hearing Legal Ad Required?: No

Publication Date:

Information

EXPLANATION OF ISSUE

Park & Recreation Month is celebrated nationally the month of July.

ACTION REQUESTED

Proclaim July as Park & Recreation Month in Tigard.

BACKGROUND INFORMATION

The City of Tigard takes pride in the 563 acres of parks and open spaces, 16 miles of walking trails, and a quickly growing recreation program. Since 1985, people in the United States have celebrated Park & Recreation Month in July to promote building strong, vibrant and resilient communities through the power of parks and recreation and to recognize the more than 160,000 full-time park and recreation professionals — along with hundreds of thousands of part-time and seasonal workers and volunteers — that maintain our country's local, state and community parks.

This year's theme — "Where Community Grows" — celebrates the vital role park and recreation plays in bringing the community together, providing essential services and fostering the growth of our community.

The City of Tigard is a member of the National Recreation and Park Association. This organization is the coordinator of Park & Recreation Month in July.

Community Engagement

Our Recreation team will be hosting Pop-Up in the Park events throughout the month of July at different Tigard parks. We will also have our first Movie in the Park event of the summer on July 8th. The community will also be able to engage in Park and Recreation Month online by following the Tigard Public Works social media pages for park spotlights, meet the staff/ volunteers, and other posts to showcase our Park & Recreation division.

ALTERNATIVES & RECOMMENDATION

Staff recommends approving July as Park and Recreation Month in Tigard.

ADDITIONAL RESOURCES

N/A

Attachments

Park Recreation Month

Proclamation

City of Tigard

PARK & RECREATION MONTH
JULY 2023

WHEREAS, parks and recreational programming are critical to Tigard's livability and important to healthy, welcoming communities throughout the country; and

WHEREAS, parks and recreation promotes health and wellness, improves the physical and mental health of residents living near community parks; and

WHEREAS, park and recreation activities promote time spent in nature and may positively impact mental health by increasing cognitive performance and well-being, alleviating symptoms of conditions like depression, attention deficit disorders, and Alzheimer's; and

WHEREAS, parks and recreation encourages physical activity by providing space for popular sports, pedestrian trails, and activities designed to support active lifestyles; and

WHEREAS, educational recreation activities provide youth with structured out-of-school-time programming that offers opportunities to learn sports, team activities and environmental awareness that support childhood development; and

WHEREAS, park and recreation programs increase a community's economic prosperity through increased property values, expansion of the local tax base, increased tourism, the attraction and retention of businesses and even reduced crime in public spaces; and

WHEREAS, parks and recreation is fundamental to the environmental well-being of our community and essential to adaptable infrastructure that makes a community resilient in the face of natural disasters and climate change; and

WHEREAS, Tigard's parks and natural recreation areas ensure the ecological beauty of our community and provide a place for children and adults to connect with nature and recreate outdoors; and

WHEREAS, the U.S. House of Representatives has designated July as Parks and Recreation Month in recognition of the benefits derived from parks and recreation resources.

NOW THEREFORE BE IT RESOLVED the City of Tigard Mayor does hereby proclaim the entire month of July as,

PARK & RECREATION MONTH

in Tigard, Oregon and encourages people throughout the city to explore our parks, trails and greenspaces and participate in the summer's recreational events.

Dated this 7th day of July 2023

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the City of Tigard to be affixed.

_____
Heidi Lueb, Mayor
City of Tigard

Attest:

_____
Carol A. Krager, City Recorder

AIS-5293 **4. A.**

Business Meeting

Meeting Date: 07/11/2023

Length (in minutes): Consent Item

Agenda Title: APPROVE CITY COUNCIL MINUTES

Presented By: City Recorder Krager

Item Type: Motion Requested

Public Hearing Legal Ad Required?: No

Publication Date:

Information

EXPLANATION OF ISSUE

Previous meeting minutes are submitted to Council on the Consent Agenda for approval.

ACTION REQUESTED

Approval of minutes.

BACKGROUND INFORMATION

Minutes for the following meetings are presented for Council approval:

- June 13, 2023
- June 20, 2023
- June 27, 2023

ALTERNATIVES & RECOMMENDATION

N/A

ADDITIONAL RESOURCES

N/A

Attachments

June 13, 2023 Minutes

June 20, 2023 Minutes

June 27, 2023 Minutes

City *of* Tigard
City Council Business Meeting Minutes
June 13, 2023

1. BUSINESS MEETING

   A. At 6:30 p.m. Mayor Lueb called the meeting of the Tigard City Council, Local Contract Review Board and Town Center Development Agency to order.

   B. City Recorder Krager called the roll.

	Present	Absent
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw		✓
Youth Councilor Nag		✓

   C. Mayor Lueb asked everyone to mute their mics and join her in the Pledge of Allegiance.

   D. Call to Council and Staff for Non-Agenda Items – None. Agenda Item No. 13 - Administrative Report - was moved up to be heard between Proclamations and Public Comment.

2. PROCLAMATIONS AND RECOGNITION

   A. PROCLAIM JUNE 19, 2023 AS JUNETEENTH DAY IN TIGARD

   Risk Management Analyst Wheeler introduced the staff report saying that this proclamation is a step in the right direction for building a stronger community of acceptance, understanding and inclusion. She said how we use words is important but at the end of the day it is our actions behind those words that really matter, including the removal of structural barriers that perpetuate racist outcomes and she looks forward to seeing more of these actions across the city. Mayor Lueb read the proclamation and proclaimed June 19, 2023 as Juneteenth Day in Tigard.

Note: The Administrative Report was moved up from the end of the meeting. The second proclamation will be heard when Mr. Tu arrives.

13. ADMINISTRATIVE REPORT – Mayor Lueb said on behalf of the Council it has been a challenging week. There were some wonderful events planned to celebrate different members in our community, but we had to cancel one due to some threats of violence, which is unacceptable.

Cancelling the event was a heartbreaking decision for the city to have to make. Hate has no place here. She vowed to continue her commitment to a community that is welcoming for everyone.

City Manager Rymer started his remarks by celebrating the Pride parade held on Saturday, which was the largest in Tigard so far. Many teammates and community members came together for the type of event that is an example of what Tigard is about. It was unfortunate that conversations needed to be held about the drag queen story time event which led to cancelling it and closing the library on Sunday. He said as City Manager he condemns threats of violence to teammates, facilities, the community and to Tigard. He commended Police Chief McAlpine, Library Director Bernard and the police and library teams that came together to work through what this meant for the event and for the library itself. We have to learn from this and figure how to move forward.

Police Chief McAlpine spoke about the decision to cancel the event and keep the library closed on Sunday. She said three days prior there had been concerning chatter that seemed benign at first. They did not know if it was just one vocal person or if there should be a visible police presence. The Chief assured Mayor Lueb and the community that these were repeated and credible threats. The police vet them with the FBI and the Joint Terrorism Task Force. The ideology being promoted was to take up the space to cause a reaction. There were other conversations about wanting it to be physical. If the event had gone forward, regional jurisdictional partners such as the sheriff's department would have been there to support the Tigard Police.

As Chief McAlpine heard more about what was planned and considered what was learned from the riot two years ago, she brought it forward to the City Manager and Library administration for a discussion. After two days of robust conversation it was decided that it would be difficult to exclude anyone from this public event, everyone has a right to attend, and the library would still be open for regular patrons at the same time, creating a challenge in a close, confined indoor space. The default was not to immediately cancel; it was to pivot and hold the event. But she said she stands by the decision and based on what they saw on Sunday it was the right one.

Chief McAlpine acknowledged that some say the message after the cancellation was, "they won." She understands that sentiment but who the "they" were that won were the children and the community kept safe at that moment in time. She offered to be available to discuss this with anyone in the community in order to move forward and heal.

Mayor Lueb thanked the Chief for attending the Meetup with the Mayor event where a lot of the questions were about how we can make sure that one person cannot prevent us from celebrating each other in community. She questioned the safety of bringing her family to the event and commented that she could not ask the community to bring their children to any event where she was not comfortable bringing her own child. She affirmed that the city would learn from this unfortunate situation and is committed to being a community that is welcoming and equitable to everybody.

Proclamations Continued:

B. PROCLAIM RECOGNITION FOR VIETNAMESE HERITAGE AND FREEDOM FLAG

Mayor Lueb issued a proclamation recognizing the Vietnamese American Heritage and Freedom Flag as the official flag of Vietnamese Americans in Tigard.

Mayor Lueb presented Mr. Thao Tu a copy of the proclamation. He thanked the City of Tigard for recognizing the Vietnamese community members living in Tigard

3. PUBLIC COMMENT –

A. Follow-up to Previous Public Comment – Assistant City Manager for Engagement and Innovation Nyland said at the last meeting on May 23 there were written and an in-person comments about rent control and how affordable housing is so important but not necessarily achievable in our community. There were also nine community members currently facing housing insecurity or houselessness speaking about the impacts of proposed time, place, and manner restrictions on camping. The city reached out to Just Compassion and the next CHART meeting will be held there. Ms. Nyland gave kudos to Risk Management Analyst Wheeler who mentioned earlier how words are so important and she was looking forward to bringing to Council a conversation about inclusive language on June 27.

B. Tigard Area Chamber of Commerce – Chamber Board of Directors Chair Michelle Cheney gave an update in person. This year's Leadership Tigard cohort met for the final session and will graduate on June 20. She reminded everyone that Tigard businesses are still in recovery mode and their top priorities are long-term staffing, vandalism, homelessness, mental health and safety. She said the Chamber CEO is on Tigard's CHART committee and they look forward to partnering with the city to find solutions to some of the community's most challenging situations. The Chamber awarded six $1,000 scholarships to graduating high school seniors. She then spoke not as Chamber Chair, but as a community member. She said she attended the Pride parade and said it was a beautiful celebration. She thanked the city, Tigard-Tualatin School District, police and all partners for coming together to put on this event. She said it is important, particularly for youth, to see that Tigard is a welcoming community and their city supports them.

C. Tigard High School Envoy – THS Envoy Kayla Kumm gave her final report of the Tigard High School year. She said there were 429 graduates, with 309 entering college in the fall, 5 going into the military, 25 committing to collegiate sports, 25 entering a trade, 56 starting a job and 5 taking a gap year. Over $3.7 million in scholarships were awarded to Tigard High graduates. Council thanked her for her monthly reports on school activities and events.

D. CONSIDER RESOLUTION ACKNOWLEDGING AND COMMENDING KAYLA KUMM FOR HER SERVICE AS TIGARD HIGH SCHOOL STUDENT ENVOY TO THE CITY OF TIGARD

Councilor Wolf moved to approve Resolution No. 23-12. Council President Hu seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

Resolution No. 23-12- A RESOLUTION ACKNOWLEDGING AND COMMENDING KAYLA KUMM FOR HER SERVICE AS TIGARD HIGH SCHOOL STUDENT ENVOY TO THE TIGARD CITY COUNCIL

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb announced that Resolution No. 23-12 passed by unanimous vote of Council members present. She presented Ms. Kumm with a copy of the resolution and a gift and thanked her for keeping the Council apprised of activities and events at Tigard High.

E. Police Chief Update – Chief McAlpine said most crimes are trending down and it was also a time when the department was doing a proof of concept for a downtown police beat. Instead of giving her regular dashboard report she introduced Officer Orth who would describe the program in the downtown and what he has been able to accomplish in two months. Officer Orth showed a slide of the sad ghost graffiti that showed up the weekend of Universal Plaza opening. By using camera systems and search warrants, the two perpetrators were caught. They caused close to $20,000 in damage. He works with Parks, Streets and Library employees to make sure graffiti or other issues are reported promptly and removed.

The downtown officers are visible in their bright yellow uniforms, biking on the streets, trails and behind businesses to assess things. He talks with businesses to encourage owners to work together and look out for each other. He met with the Chamber and the new TDA Director. He did a crime analysis for the week and offered to send that information to businesses. He met with Just Compassion operations and outreach to find out what support they need from police and worked with Program Manager Ezell to distribute handouts regarding the new camping time, place, and manner regulations.

Chief McAlpine referred to the six lifesaving awards Officer Orth has received and added that he is a guardian of the community, solving problems and always showing compassion. Mayor Lueb thanked the Chief for dedicating already short staff to this position and she was impressed with what Officer Orth has accomplished already. She asked him to reach out to Council if there is anything they can do to help.

F. Public Comment – Written: Three written comments were received, one from Emily Stuart encouraging a fireworks ban due to early drought, another from Michael Brewin on a wide variety of topics, and one from Steve DeAngelo with concerns with the fee structure for downtown events. She asked Council if there was desire to discuss a fireworks ban. Councilors Wolf and Singh and Council President Hu were open for a discussion at the June 20 meeting.

G. Public Comment – In Person: Tigard resident Gabriel Buehler said he was the one who came to the Police station Thursday to report threats of violence, and since no one wants to say it, it was Antifa. He showed police screen shots of the people who caused property damage downtown in 2021 and said it got reported in the news, and the city also insinuated, it was something else. The goal was to occupy the space at the library, a page out of Martin Luther King's playbook. The flag wave event they held at the library on Sunday was just that, nothing else. People drove by and honked, and he said it was 25 honks to 1 rude gesture, so they know they have support. He said what is happening is the sexualization of children and a whole

month dedicated to it. There is only one day for Memorial Day, one day to honor his friends that died. He asked why not have a week to honor police, firefighters or veterans. He felt aggravated because homage was not being paid to the people that served this nation. For Juneteenth, the city hired the Feral Dance Crew, which is night life entertainment, or strippers. He said he emailed Mayor Lueb so she could come to the library and speak to her constituents and find out what their concerns were, but did not receive a response. The people think this is an atrocity to their children. No one was going to hurt any children and he had his children there with him at the flag wave on Sunday.

H. Public Comment – Phone-In or Video: None.

4. CONSENT AGENDA (Local Contract Review Board)

A. BUSINESS LOAN FUND AGREEMENT WITH BUSINESS IMPACT NW

Councilor Wolf moved to approve the Consent Agenda. Council President Hu seconded the motion. City Recorder Krager conducted a roll call vote and the motion passed.

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

5. LEGISLATIVE PUBLIC HEARING: RIGHT-OF-WAY VACATION FOR A PORTION OF SW ROSHAK ROAD

A. Mayor Lueb opened the public hearing.

B. Hearing Procedures – Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

C. City Engineer Wisniewski gave the staff report. He noted that Pacific Community Design Project Planner Maureen Jackson was present to represent the applicant. The city received a petition for street right-of-way vacation for a twenty-foot-wide portion of Roshak Road. The area is currently vacant and part of a current development. The vacation is requested to minimize impact to the reconstructed stream channel, vegetated corridor, and mitigation area approved with construction of a previous development.

Engineer Wisniewski noted that the Council took action previously to vacate another portion of this right-of-way construct for storm water, bike and pedestrian access as part of the River Terrace Town Center development. Staff recommends proceeding with this right-of-way vacation.

D. Public Testimony – None

E. Response to testimony by staff. No testimony was given

F. Mayor Lueb closed the public hearing.

G. Council consideration of Ordinance No. 23-04.

Council President Hu moved to adopt Ordinance No. 23-04. Councilor Wolf seconded the motion. City Recorder Krager read the number and title of the ordinance and conducted a roll call vote.

> Ordinance No. 23-04 – AN ORDINANCE CONCERNING THE VACATION OF A TWENTY-FOOT-WIDE PORTION OF PUBLIC RIGHT OF WAY BETTER KNOWN AS SW ROSHAK ROAD (COUNTY ROAD NO. 3282) ALONG THE SOUTH PROPERTY LINE OF TAX LOT 3300 ON MAP 2S106 IN THE CITY OF TIGARD

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb announced that Ordinance No. 23-04 was adopted by a unanimous vote of Council present.

Mayor Lueb gave background on the next agenda items related to the city's budget. She said there was robust discussion with the Budget Committee, consisting of five community members and five members of council. She noted a potential to move quickly on consideration of the items this evening, but wanted the public to know it has been months in the making. The Budget Committee meetings are recorded and available online. She commended the Finance Department staff for their hard work and quick research to respond to the many questions and requests for information.

6. PUBLIC HEARING: ADOPT 2024 FEES AND CHARGES SCHEDULE

A. Mayor Lueb opened the public hearing.

B. Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

C. Budget Manager Plath thanked the Council for their interaction on the Budget Committee. Management Analyst McGown gave the staff report. Every fiscal year a revised fees and charges schedule is brought forward for Council approval. Exhibit A to the resolution is the full fees and charges schedule and a summary of changes is included. Ms. McGown listed indices used for increases. Council President Hu disclosed he is a business owner, and the business license

impacts him, but it is a general fee that applies to everyone, so he is not recusing himself. He noted that a request came from the Tigard Downtown Alliance to delay a special event fee and their concern was addressed. The special event fee is a pilot program and the schedule will be updated at the end of the year.

D. Public Testimony – None.

E. Response to testimony by staff – None

F. Mayor Lueb closed the Public Hearing.

G. Council consideration of Resolution No. 23-13.

Councilor Wolf moved to approve Resolution No. 23-13. Council President Hu seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

Resolution No. 23-13 – A RESOLUTION AMENDING THE CITYWIDE FEES AND CHARGES SCHEDULE WHICH WAS ADOPTED UNDER RESOLUTION NO 22-12 AND SUBSEQUENT AMENDMENTS

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb announced Resolution 23-13 was adopted by a unanimous vote of Council present.

7. PUBLIC HEARING: CERTIFY THAT THE CITY OF TIGARD PROVIDES SERVICES QUALIFYING FOR STATE SHARED REVENUES

A. Mayor Lueb opened the public hearing.

B. Hearing Procedures – Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

C. Budget Manager Plath gave the staff report and said ORS 221.760 requires cities to certify eligibility to receive shared revenues from cigarette, gas and liquor taxes by providing more than four of the required services. The City of Tigard provides police services, street construction, maintenance and lighting, sanitary sewer and storm water management, planning, zoning and subdivision control and water quality - all of the qualifying services except fire protection.

D. Public Testimony - None.

E. Response to testimony by staff. There was no testimony.

F. Mayor Lueb closed the Public Hearing**.**

G**.** Council consideration of Resolution No. 23-14.

Council President Hu moved to approve Resolution No. 23-14 and Councilor Wolf seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

Resolution No. 23-14 – A RESOLUTION CERTIFYING THAT THE CITY OF TIGARD PROVIDES SERVICES QUALIFYING FOR STATE SHARED REVENUES

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb announced Resolution 23-14 was adopted by a unanimous vote of Council present.

8. PUBLIC HEARING: DECLARE THE CITY'S ELECTION TO RECEIVE STATE REVENUE SHARING

A. Mayor Lueb opened the public hearing.

B. Hearing Procedures – Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

C. Budget Manager Plath gave the staff report. ORS requires passing an ordinance or resolution to request state revenue sharing monies annually. In order to receive state revenue sharing in FY 2023-2024 the city must have levied property taxes in the preceding year, which the City has done. An estimate of the state revenue sharing receipts is $745,500 for FY 2023-24.

D. Public Testimony – None.

E. Response to testimony by staff. There was no testimony.

F. Mayor Lueb closed the Public Hearing**.**

G**.** Council consideration of Resolution No. 23- 15.

Councilor Wolf moved to approve Resolution No. 23-15 and Council President Hu seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

Resolution No. 23-15 – A RESOLUTION DECLARING THE CITY'S ELECTION TO RECEIVE STATE REVENUE SHARING

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb announced Resolution 23-15 was adopted by a unanimous vote of Council present.

9. PUBLIC HEARING: ADOPT THE BUDGET, MAKING APPROPRIATIONS, DECLARING THE AD VALOREM TAX LEVY AND CLASSIFYING THE LEVY AS PROVIDED

A. Mayor Lueb opened the public hearing.

B. Hearing Procedures – Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

C. Budget Manager Plath gave the staff report. The slide presentation is in the packet for this meeting. The Budget Committee approved a budget amount of $294,225,272. Budget Adjustments are described below and bring the total to $294,481,202.

Budget Adjustments: There were some uncompleted contracts in the City Management budget in the amount of $241,000 and Information Technology in the amount of $14,930 that are being carried forward from FY 2023 into FY 2024. These two carryforwards equal $255,930. There was also a transfer of appropriations for a split in the Assistant Finance Director salary. The budget did not show the split so $41,202 was transferred from Financial Operations into Utility Billing for that portion of that position's time typically spent in Utility Billing. This does not affect the total as it is a transfer.

D. Public Testimony – None.

E. Response to testimony by staff. No testimony was given.

F. Mayor Lueb closed the public hearing.

G. Council consideration of Resolution No. 23-16

Council President Hu thanked staff and the Budget Committee for their hard work and for making tough decisions. He announced for the public that there will now be quarterly Budget Committee meetings and they are welcome to attend and continue to give input.

Council President Hu moved to approve Resolution No. 23-16. Councilor Wolf seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

Resolution No. 23-16 – A RESOLUTION OF THE CITY OF TIGARD ADOPTING THE APPROVED BUDGET, WITH ADJUSTMENTS, MAKING APPROPRIATIONS, DECLARING THE AD VALOREM TAX LEVY, AND CLASSIFYING THE LEVY AS PROVIDED BY ORS 310.060(2) FOR FISCAL YEAR 2024.

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

Mayor Lueb convened the Town Center Development Agency for the next agenda item.

10. TOWN CENTER DEVELOPMENT AGENCY PUBLIC HEARING: ADOPT THE TCDA FY 2024 BUDGET WITH ADJUSTMENTS, MAKING APPROPRIATIONS, AND IMPOSING AND CATEGORIZING TAXES

    A. TCDA Chair Lueb opened the Public Hearing.

    B. Hearing Procedures – TCDA Chair Lueb announced that anyone may testify by phone, video or in person and may call 503-966-4101 now to get in the queue.

    C. Budget Manager Plath gave the staff report. Council was being requested to adopt the TCDA budget as approved by the Budget Committee in May in the amount of $10,977,750.

    D. Public Testimony - None

    E. Response to testimony by staff - There was no testimony.

    F. Chair Lueb closed the public hearing.

    G. Town Center Development Agency consideration of TCDA Resolution No. 23-04.

    Director Wolf moved to approve TCDA Resolution No. 23-04 and Director Hu seconded the motion. City Recorder Krager read the number and title of the resolution and conducted a roll call vote.

    TCDA Resolution No. 23-04 – A RESOLUTION ADOPTING THE FISCAL YEAR 2023-2024 BUDGET, MAKING APPROPRIATIONS, AND IMPOSING AND CATEGORIZING TAXES

		Yes	No
Director Wolf		✓	
Director Hu		✓	
Chair Lueb		✓	
Director Singh	(remote)	✓	
Director Shaw	(Absent)		

Mayor Lueb reconvened the Tigard City Council for the remainder of the meeting.

11. CITY CENTER TIF (TAX INCREMENT FINANCING) UPDATE

Redevelopment Project Manager Farrelly gave the staff report on the City Center TIF District. He discussed how the downtown is the historic center of Tigard and there have been many plans going back to the 70s and 80s to revitalize it. A Downtown TIF District was formed in 2006 with a maximum indebtedness of $22 million for 20 years, a modest amount. The recession impacted the growth and development in the downtown and it was clear that the $22 million would not be collected by the original expiration date. To address this a substantial amendment increasing the size by 37.7 acres which would generate additional TIF went to the voters and passed in 2017.

The current plan dates back to 2005 and the Tigard Downtown Improvement Plan (TDIP). In 2020 as part of the City Center Futures Project, the vision was updated to "Our vision of Downtown Tigard is a vibrant, active, and welcoming city center at the heart of our community. It provides transportation, recreational, residential and business opportunities that are accessible to everyone." Mr. Farrelly showed slides of the Burnham and Commercial Street Corridor Visions. Potential build-out included Universal Plaza, a redeveloped city center campus, a new city hall and SW Corridor light rail on Hall Blvd.

Redevelopment Project Manager Farrelly highlighted some projects that were completed. Public spaces include Universal Plaza Phase I, Rotary Plaza, Ash Avenue Dog Park and the upcoming Nick Wilson Memorial Plaza. TIF Plan projects include Attwell Off Main, where TIF funding for planning and development assistance in a public/private partnership redeveloped a former city public works yard into 165 market rate units. AVA Main Street development included cleaning up and clearing the site, selling the property to a developer who should complete construction in spring of 2024. Alongside Senior Housing did not receive direct TIF but the agency led the project. It is nearly complete and will have 57 units of affordable housing. 32 building improvement grants were awarded to businesses and properties. This year we will be offering $75,000 in maximum matching grants to help attract new eating and drinking establishments.

The Downtown Development 5-year Action Plan (2020) includes the following categories:

- Encourage and Facilitate Redevelopment Projects Downtown
- Improve Fanno Creek Park and Develop an Open Space System
- Develop Comprehensive Street and Circulation Improvement

Redevelopment Project Manager Farrelly said he will return in August for Part Two: short- and medium-term financing.

Director Hu asked about encouraging transit-oriented development. Redevelopment Project Manager Farrelly said it is a location for high-capacity transit and is an area residents can make use of transit, but not light rail yet. Attwell is an example of this as it is a short walk to the TriMet stop for WES and busses. He added that the AVA development will also have residents using transit.

In response to a question from Director Hu on how people will get to Tigard's downtown in the future and if there are plans for high-capacity transit to go through it, Redevelopment Project Manager Farrelly said that was unknown. Chair Lueb said the SW Corridor is still a priority regionally.

Director Singh asked about the status of the community shelter at Universal Plaza and whether community members will be able to reserve the space. Redevelopment Project Manager Farrelly said the shelter would provide shade and rain protection and there would be a community room with technology available for reservations. He had no details as it is three or four years out.

Chair Lueb gave an update on potential funding. In this round she submitted three requests. One is for Universal Plaza for $2 million. Congresswoman Salinas submitted two of them from Tigard in the 15 projects she can submit. The third project is involved in the federal process, and we hope to hear about it in July.

Director Hu thanked the mayor for traveling to Washington DC to lobby for these funds. Mayor Lueb noted that there are two Tigard residents assisting in the Senate, one in Senator Wyden's office and one in Senator Merkley's office.

12. NON-AGENDA ITEMS – None

13. ADMINISTRATIVE REPORT – Moved up earlier in the meeting.

14. EXECUTIVE SESSION: None

15. ADJOURNMENT

At 8:28 p.m. Council President Hu motioned for adjournment. Councilor Wolf seconded the motion. City Recorder Krager conducted a roll call vote and the motion passed.

	Yes	No
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Singh (remote)	✓	
Councilor Shaw (Absent)		

_____
Carol A. Krager, City Recorder

Attest:

_____
Heidi Lueb, Mayor

Date: _____

City *of* Tigard
City Council Workshop/Business Meeting Minutes
June 20, 2023

1. WORKSHOP/BUSINESS MEETING

   A. At 6:35 p.m. Mayor Lueb called the meeting to order.

   B. City Recorder Krager called the roll.

	Present	Absent
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Youth Councilor Nag	✓	
Councilor Shaw	✓	

   C. Mayor Lueb asked everyone to join her in the Pledge of Allegiance.

   D. Call to Council and Staff for Non-Agenda Items – There were none.

2. PUBLIC COMMENT

   A. Follow-up to Previous Public Comment – Assistant City Manager Nyland reported on follow-up to public comment from the previous meeting.

   B. Public Comment – Written: Michael Brewin included excerpts from an essay on healing Mother Earth and an audio file of a song. He commented on recent gains made in hydrogen vehicle technology and requested that the city reconsider purchasing electric vehicles.

   C. Public Comment – In Person: Jason Trout of T&T Fireworks said he supported increasing fines for illegal fireworks. He said the city's use of red flag warnings to determine when to ban fireworks is not the best system because they can be for a very short time period causing sales to be stopped but also could change quickly. This is difficult to predict. He offered to be a resource to help develop more criteria that is fairer.

   D. Public Comment – Phone-In: None.

3. COMMUNITY ORGANIZATION UPDATE –ST VINCENT DE PAUL

St. Vincent de Paul Tigard Conference President Julie Le and Vice President Diane Bohan gave a presentation on the many services provided, including a community café, food pantry and rent/utility assistance. They evaluate requests for assistance with water utility bills and have partnered with the city to help pay water bills for 15 years.

Since 2009 they have offered a free meal on Sunday evenings and have only missed two Sundays in the last 14 years. Guests are a mix of the homeless, neighborhood families and elderly people. They have 200 volunteers and are 100 % volunteer run. They need more volunteers and have had to close the pantry two days a week because there are not enough volunteers to run it. They do require food service training but there are many opportunities to serve, such as picking up food, packing boxes and stocking shelves. St. Vincent de Paul is separate from the church and is a non-profit organization. Anyone can volunteer; there is no requirement to be a member of the Catholic Church or attend St. Anthony's.

Julie Le said they are experiencing food shortages. The shelves are the barest she has ever seen due to the high need. They used to see 400 families a week and now it is 653. The fall leaf and canned food drive and the city's annual Social Services grants help with food and items for the homeless.

Questions and Comments:

Councilor Shaw asked about changes to the SNAP food program. They replied that increased benefits due to COVID ended on March 1. The changes were significant, leaving many with not enough food.

Youth Councilor Nag asked what the volunteer age requirements are as she could reach out to some TTSD youth organizations. Julie Le said those under 18 must sign waivers. Those under 16 would need to be accompanied by a parent. Councilor Singh thanked them for the services they provide and noted that the Sikh Center of Oregon is another non-profit in Tigard that serves vegetarian meals on Sundays and it not only feeds people but builds relationships and that is important, especially for an immigrant community. Mayor Lueb asked them to reach out to the city when they need help publicizing needs or volunteer opportunities.

4. WASHINGTON SQUARE REGIONAL CENTER PROJECT UPDATE

Senior Planner Susan Shanks gave the staff report on this project, which includes more than just the mall. For her update she reviewed past actions to update the city's land use and transportation policies. Much has changed in this area, including market trends, housing, business opportunities, and community needs and priorities. The Washington Square Regional Center vision document was included in the attachments to the agenda item summary

Current action measures include continuing to update zoning and regulations that will support development of the area into a dense, walkable, and vibrant place that also reflects market realities, community needs and aspirations, and city goals related to sustainable growth. The Tigard MADE program will assist and efforts made to reach out to affected stakeholders. A second action measure is to overcome the Highway 217 barrier and improve Greenburg Road and Hall Boulevard, which

includes a jurisdictional transfer and bringing Hall up to a better condition. There is also a historic cemetery running along Greenburg. MSTIP funds are in limbo. However, Washington County and other cities are supportive of these efforts.

Senior Planner Shanks is working with Senior Transportation Planner Roth as their land uses/transportation dovetail. A grant was received to study an over cross of 217 to bring people closer to trails, parks and schools. WSRC doesn't have a park except at Metzger, but future parks are planned to improve recreational access for families.

The Sears development project is moving forward after a delay due to COVID. The received an extension on their land use approval and hope to get into the permitting process this year. Also moving ahead is Terrace Glen affordable housing. The Steadfast project is getting underway and Brookside on Hall is the second phase of a memory care facility, and will add 50 memory care beds.

Council adopted regulations to allow car dealerships on Cascade Avenue and as a result, two are being built as well as a new motorcycle facility repurposing an empty retail building.

Ms. Shanks said staff drafting policies and will return to Council for public hearings to consider actions. Ongoing work includes public improvements such as streets and parks as funding becomes available.

Mayor Lueb noted that some of the most vulnerable community members live in this area and asked about efforts to ensure they are not being pushed out. Senior Planner Shanks said they did a displacement analysis on the effects of development and how far they extend. There is a goal specific to equity and they are focusing on preventing displacement.

Youth Councilor Nag asked if there was any way to require construction occurring near school routes happen only when school is out, and Senior Planner Shanks said we don't have any say over other agencies.

Youth Councilor Nag asked if adding more people will decrease emissions or increase them with more cars coming into the area. Senior Planner Shanks said regulations could lead to reduced emissions, such as writing new standards for stormwater regulations or factoring in more green space. Transit and bike improvements may also help reduce carbon emissions.

Council President Hu noted that the Planning Commission only approved a concept plan for a new apartment complex in the WSRC area, but it will be coming back for a more detailed plan review. He asked if more green space could be included at that time. He commented that he was pleased to see the city's commitment to make Hall and Greenburg safer for pedestrians and biking.

5. LEGISLATIVE PUBLIC HEARING: CONSIDER ORDINANCE TO AMEND TIGARD MUNICIPAL CODE 3.24 AND 3.90 TO EXTEND EXEMPTIONS AND CLARIFY QUALIFYING CRITERIA

   A. Mayor Lueb opened the Public Hearing.

   B. Hearing Procedures – Mayor Lueb announced that anyone may testify by phone, video or in person and may call to get in the queue now by calling 503-966-4101.

Council President Hu recused himself from the discussion and decision and left the room.

C. Senior Planner Warren gave the staff report. SDC Coordinator Couch attended remotely. The slide presentation is in the packet for this meeting. The exemption for System Development Charges (SDCs) for Accessory Dwelling Units (ADUs) in Tigard Municipal Code Chapter 3.24 sunsets on July 31, 2023. These exemptions were designed to encourage affordable housing. SDCs are a higher percentage of the total cost for smaller units. Most ADU developers are homeowners and will either have to use cash on hand or tap their homeowner's equity to pay for construction. Extension of the SDC will incentivize homeowners who may be on the fence, allow an ADU to be rented at a lower rate, help bring the city into alignment with regional ADU production goals and promote aging in place and multigenerational households.

The fiscal impacts are very small, (Parks, and Transportation project budgets). ADU households are smaller and have lower impact. ADU construction does slightly increase the tax base which benefits the city.

Senior Planner Warren showed a slide of fiscal impacts by year. There have been 33 ADUs added and 7 are awaiting permitting.

Staff recommends other policy changes and technical fixes in these code amendments. Deferring payment of SDCs to final permitting will be the default option to decrease confusion and paperwork.

Tigard Municipal Code 3.90 covers the 1% Construction Excise Tax and includes exemptions for ADUs. It also expires July 31, 2023. The purpose is to backfill SDC exemptions and encourage affordable middle housing. Staff recommends extending it as it supports the same goals as SDC exemptions for ADUs.

The staff recommendation is to adopt an ordinance to extend exemptions.

D. Public Testimony – There was no public testimony.

E. Response to testimony by staff – None.

In response to a question from Councilor Shaw, Senior Planner Warren said they would be extended to 2027. In response to a question on whether the 33 ADUs were individual units he replied that they were and noted that cottage clusters are not eligible for SDC exemptions.

F. Mayor Lueb closed the Public Hearing**.**

G**.** Council consideration of Ordinance No. 23-05.

Councilor Wolf moved to approve Ordinance No. 23-05. Councilor Singh seconded the motion. City Recorder Krager read the number and title of the Ordinance and conducted a roll call vote. Youth Councilor Nag gave an advisory vote of yes.

Ordinance No. 23-05 – AN ORDINANCE TO AMEND TIGARD MUNICIPAL CODE CHAPTER 3.24 TO EXTEND EXEMPTIONS FROM CERTAIN SYSTEM DEVELOPMENT CHARGES FOR ACCESSORY DWELLING UNITS AND CLARIFY LANGUAGE RELATED TO AFFORDABLE HOUSING, AND TO AMEND TIGARD MUNICIPAL CODE CHAPTER 3.90 TO EXTEND EXEMPTIONS FROM CONSTRUCTION EXCISE TAX FOR ACCESSORY DWELLING UNITS AND MIDDLE HOUSING

	Yes	No	Abstain
Councilor Singh	✓		
Councilor Wolf	✓		
Council President Hu			✓
Mayor Lueb	✓		
Councilor Shaw	✓		

At 8:28 p.m. Council President Hu returned to the meeting.

6. TAX EXEMPTION CONSIDERATION

Senior Planner Warren gave the staff report. Northwest Housing Alternatives has requested exemption from the City of Tigard's property taxes for 2023. This is allowable under Tigard Municipal Code Chapter 3.50 and must be applied for by July 1. They are scheduled to begin occupancy of the affordable housing development Alongside Senior Housing, in July of 2023. Future requests will come to the City Council on an annual basis with all other requests.

Councilor Shaw moved to approve Resolution No. 23-17. Councilor Wolf seconded the motion. City Recorder Krager read the number and title of the resolution. Youth Councilor Nag gave an advisory vote of yes.

Resolution No. 23-17- A RESOLUTION GRANTING AN EXEMPTION FROM PROPERTY TAXES UNDER TIGARD MUNICIPAL CODE SECTION 3.50 FOR THE NON-PROFIT LOW-INCOME HOUSING PROJECT OWNED AND OPERATED BY NORTHWEST HOUSING ALTERNATIVE

	Yes	No
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Shaw	✓	

7. COMMUNITY DEVELOPMENT BLOCK GRANT URBAN REQUALIFICATION PROCESS

Senior Planner Warren gave the staff report with a slide presentation on options for requalification to receive Community Development Block Grant (CDBG) Funds. He gave some background on this federal program administered by HUD and Tigard's use of these funds, including for the Senior

Center. As cities cross the population threshold of 50,000 people there is the option to change entitlement status. Tigard elected to remain a member of the Washington County Consortium in 2015, 2018 and 2021. The city's full allocation for FY 23 is $282,962.

Senior Planner Warren listed the options, comparing the staffing and budget impacts of no entitlement (which requires competing for each grant), full entitlement (which has high staffing and budget impacts) and joint entitlement, (low staffing and budget impacts). Another "cost" with full entitlement is that service providers would no longer be eligible for grants to provide services within Tigard, such as the $90,000 grant Just Compassion received. Electing the full entitlement at this time would likely cost more to run than would be gained.

The staff's strong recommendation is to proceed with the current entitlement status in both this cycle and in the 2026 cycle and to direct staff to revisit entitlement in 2029, or when the population reaches 75,000, whichever comes first.

Councilor Wolf spoke to her experience on the CDBG Board and said she appreciated that there is an extensive workload for administering a full entitlement program.

Councilor Shaw asked if funds are based on population. Senior Planner Warren said it is complicated, starting with an Act of Congress, then complex formulas on population, percentage of low-income residents, seniors, low-income census tracts and other groups.

Mayor Lueb asked for affirmation that Council was in favor of the staff recommendation, and they indicated they were.

8. REVIEW CITY'S FIREWORKS ORDINANCE

City Attorney Rihala led this discussion which was based on a public comment received at the previous meeting asking the city to reconsider fireworks regulations. She gave the history of recent fireworks ordinances. In 2021 the area was in the midst of extreme heat in July. Council met and passed a resolution declaring an emergency and banning fireworks from use between July 1-9, 2021. They also raised the fines for illegal fireworks to $1,000 through September 1st.

In 2022 Council passed an ordinance prohibiting illegal fireworks (which are already prohibited because they are illegal) that allows them to be cited into the Tigard Municipal Court. Council also felt it important to attach a significant fine of $1,000, not to exceed $1,500. Red flag warnings were chosen to determine when fireworks would be banned in the city. An education effort was put in place to share what red flag warnings are and how to find out if Tigard is under one. The problem with them is that they are unpredictable and can change daily. In the past, police would go to an address where it was suspected that illegal fireworks were being used and people would run away or deny they were using them. They could not enforce because they did not see the person using them. To make it easier to enforce use of illegal fireworks, a presumptive fine was added for the property owner where illegal fireworks are found. A presumptive violation was added that if the illegal fireworks are present, the property owner is automatically responsible, and the fine is $1,000-$1,500.

Mayor Lueb asked how many fines were issued last year. Chief McAlpine said she thought there was one. She reported police have higher priorities during the holiday such as domestic issues and DUII. They are staffing the Fourth of July fireworks show this year with any extra officers. Last year there were 36 fireworks complaint calls compared to 66 the year before. She reports statistics annually after the 4th.

Mayor Lueb asked if there was an analysis of what other cities are doing. City Attorney Rihala said cities coordinated in 2021. Cities that banned them last year included Portland, Bend and Lake Oswego.

Council President Hu asked about TVF&R's bans and City Attorney Rihala said their burning bans are based on longer durations. A red flag warning is for extreme danger for a limited time and much harder to predict.

Councilor Wolf said whether you will get to use the fireworks you purchased is a risk. The weather may be very different by the 4th.

Mayor Lueb said it is not fair to use the red flag warning which can change without predictability.

Councilor Shaw asked staff to put together a robust education plan. She mentioned that she heard from people in Eastern Oregon that the grass there has grown so long after the wet spring they are worried that when it dries out this summer it will be like lighter fuel.

It was decided to continue with the existing ordinance for now, with the option of calling an emergency meeting if necessary. Councilor Wolf asked if the city could promote the word that even without a red flag warning, fireworks can still be dangerous. Further discussion will be scheduled to a meeting later in July.

9. NON-AGENDA ITEMS – None.

10. COUNCIL LIAISON REPORTS

Council Liaisons gave their updates on city board and committee activities.

Youth Councilor Nag said TYAC is conducting elections. Seniors are moving on, so new members are being recruited and they are hoping to get more middle schoolers to join. They are working on fundraising at city summer events.

Councilor Wolf said the CCE had a great discussion on houselessness on May 17. The Policy Advisory Board for CDBG approved the application for agencies to use ARPA funds. She said she and Councilor Singh are on the public safety levy committee. The Metropolitan Area Communications Commission (MACC) approved the budget. She gave a shout out to the Tigard Police Department for making a great video on the facilities modernization needs.

Council President Hu said the Town Center Advisory Commission met with Police Commander McDonald who presented the city's latest efforts regarding issues in the downtown, including Officer Orth's new assignment working a focused patrol in the area. Business owners noted a difference and appreciated the increased police presence. Some businesses want to install cameras and a conversation is ongoing about how to pay for them. The Tigard Downtown Alliance is hiring a

director. The TCAC adopted three goals: equitable business development, connectivity and access, and affordable housing. They also appointed a representative to the downtown parking committee. The Willamette River Water Coalition is making progress and the Sherwood water treatment plant is taking shape and will be operational in 2026.

Mayor Lueb said the city was chosen to participate in the 360 Thinking Program with University of Wisconsin-Madison. She attended the US Conference of Mayors and JPACT to lobby on behalf of projects in the entire Portland region. She met with the Metro Regional HUD Representative and joined the US Conference of Mayors Housing Committee.

Councilor Shaw said the Tigard Transportation Advisory Committee reviewed the Moving in May event. They walked and biked areas in Tigard and to see where there are gaps in the system. CHART met with Just Compassion. The Charter Review Committee discussed term limits and the length of the Council President term.

Councilor Singh attended the Regional Water Providers Consortium Board meeting on June 7. They elected new chairpersons and discussed revisions to the intergovernmental agreement and the RWPC 5-year plan. The Library Board learned about the role of Liz O'Donnell who provides technical assistance.

Mayor Lueb read the following while in public session:

11. EXECUTIVE SESSION – The Tigard City Council will go into Executive Session to discuss the performance review of public officers or employees, under ORS 192.660(2) (i). All discussions are confidential and those present may disclose nothing from the Session. Representatives of the news media are allowed to attend Executive Sessions, as provided by ORS 192.660(4), but must not disclose any information discussed. No Executive Session may be held for the purpose of taking any final action or making any final decision. Executive Sessions are closed to the public. The Council will adjourn immediately after the Executive Session.

At 10:05 p.m. Council President Hu motioned for adjournment. Councilor Shaw seconded, and the motion passed unanimously.

	Yes	No
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Councilor Shaw	✓	

_____
Carol A. Krager, City Recorder

Attest:

_____
Heidi Lueb, Mayor

Date: _____

City *of* Tigard
City Council Business Meeting Minutes
June 27, 2023

1. EXECUTIVE SESSION

At 6:01 p.m. Mayor Lueb announced that the Tigard City Council was entering into Executive Session to discuss labor negotiations, under ORS 192.660(2)(d). The Session ended at 6:14 and Mayor Lueb called a recess until 6:30 p.m.

2. BUSINESS MEETING

A. At 6:30 p.m. Mayor Lueb called the Tigard City Council and Local Contract Review Board meeting to order.

B. City Recorder Krager called the roll.

	Present	Absent
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	
Youth Councilor Nag	✓	(arrived at 6:32 p.m.)

C. Mayor Lueb asked everyone to mute their mics and join her in the Pledge of Allegiance.

D. Call to Council and Staff for Non-Agenda Items – None. The Administrative Report will be heard after Public Comment and will include the introduction of a new teammate and a report and update on Universal Plaza.

3. PUBLIC COMMENT –

A. Follow-up to Previous Public Comment: Assistant City Manager for Engagement and Innovation Nyland noted there was one written and one in-person comment at the last meeting. The written comment was about hydrogen power, and the person received a response which touched upon the city's climate goals and infrastructure capabilities. The in-person testimony related to fireworks and offered support for increased illegal firework fines Staff let him know that a further fireworks discussion is scheduled for late July.

B. Public Comment – Written: Michael Brewin wrote in regarding Agenda Item No. 9 – Inclusive Language and Demographic Update - with a complaint that the city has institutionalized systemic racism, discrimination, and bias against white, straight males. He also suggested that government funds (RAFT grants) were used to establish and support religious practices and given to persons ineligible for government grants.

C. Public Comment – In Person: None

D. Public Comment – Phone-In or Video: None

ADMINISTRATIVE REPORT *(Moved up from end of meeting)*

City Manager Rymer introduced Maiya Delgoda who is joining the city as its first IT Director. She previously worked at the City of Portland in a technology leadership role in infrastructure, transportation, sewer and water. She also worked at Intel. Maiya is from Sri Lanka and is excited to be here and serve the Tigard community.

Community Development Director Asher shared an update on Universal Plaza, joined by Owner's Representative Vanessa Robinson of Shiels, Obletz Johnsen (attending remotely). He noted there had been some operational issues at Universal Plaza and the team is working to complete the final items. The splash pad auto-fill valve needed to be replaced and even though work and training are underway, it is likely that the water feature will be available for use from now until Friday in a soft opening. It should be fully open to the public on Saturday.

In response to a question from Mayor Lueb, Owner's Representative Robinson acknowledged there were a surprising number of splash pad equipment components that failed. Another difficulty is that the out-of-state team (OTL) had limited time onsite. They are here now with one issue outstanding and the city's Parks team will confirm when the design is completed and working. Community Development Director Asher said the element has not failed and is a well-designed splash pad built by reputable contractors who have worked on even more complicated water features than this one.

Mayor Lueb said the opening was rushed and asked how the city can avoid this in the future, so our community is not disappointed. Councilor Wolf agreed that the splash pad is a unique design/build but asked if there were any contractual elements that could have kept OTL on site when it was critical.

Mr. Asher apologized for putting Mayor Lueb in a difficult position. In April they thought they were closer than they were and ready to open in time for the Farmers Market since 95% of the project was finished. Ms. Robinson said OTL was to build a feature according to the design and they have done that, although very slowly. The warranty period has not started as the splash pad has not been accepted by the city. Council President Hu asked what kind of service level can be expected under the warranty. Ms. Robinson said they will not be leaving until Parks staff are completely satisfied and have accepted the training in order to manage it on a daily basis. If there is a piece of equipment that malfunctions, Shiels Obletz Johnsen will bring in both general contractor P&C and the splash pad contractor OTL.

Councilor Shaw appreciated the candid responses and said it was known there are material quality issues coming out of the pandemic. She asked if there was something within the warranty that we can beef up given the issues. Ms. Robinson said she can give the city confidence on how the team will approach any further issues. Mr. Asher said splash pads are notoriously finicky and he has no doubt that there will be issues that arise over the years. Tualatin just had to replace theirs. But he does not want any issues to arise because of defects. He said it will become a public works function once we sign off on it. He asked Council if they want more oversight in the sign-off moment when the city accepts the project. Council President Hu said he would prefer that for something like the swings because the splash pad may not have a safety issue. In the worst case, it could just be turned off. Councilor Wolf said she appreciated the offer but thought just a thumbs up from Parks and Recreation would be adequate. Mr. Asher thanked Council for their confidence and said he, Public Works Director Rager, Parks Manager McKnight, City Manager Rymer, Vanessa Robinson, and everyone on the entire team will need to sign-off on this.

Ms. Robinson said the public loved the swings! As a result a few bolts dropped. She said it was not a safety issue related to the integrity of the swings, but it is not okay that they are dislodging from the limiters. She will follow up on this and get something in writing. P & C was onsite and verified each bolt and found no issues with them. They will be out tomorrow to look for any shifting. Subcontractor Rios is in conversation with Landscape Forms to diagnose this. Council President Hu said bolts falling out is a safety issue to him as they could hit a child in the head. Mayor Lueb asked about intervals for continual checking on the bolts.

Owner's Representative Robinson said there is a punch list of items to finish that started with 60 items at substantial completion and now there are just over 10 remaining, with none having cost implications. These include some boards at the boardwalk and some planks at the community table. The monument sign was there for the grand opening but removed so the city logo could be etched into the bench, followed by reinstallation of the symbols. The pervious asphalt, which was a requirement of Clean Water Services, has recently started failing at the edges. They are diagnosing the cause. This asphalt is weather dependent and work on it will require cooler fall temperatures.

4. CONSENT AGENDA: (Tigard City Council and Local Contract Review Board)

   A. LOCUST STREET SAFE ROUTE TO SCHOOLS (SRTS) INTERGOVERNMENTAL AGREEMENT WITH WASHINGTON COUNTY

   B. PAVEMENT MANAGEMENT PLAN (PMP) ROADWAY STRIPING PROJECT CONTRACT

   C. RESOLUTION AUTHORIZING THE CITY MANAGER TO SIGN PROMISSORY NOTE FOR LOANS TO THE TOWN CENTER DEVELOPMENT AGENCY

      RESOLUTION NO. 23-18 - A RESOLUTION AUTHORIZING THE CITY MANAGER TO SIGN PROMISSORY NOTE FOR LOAN TO THE TOWN CENTER DEVELOPMENT AGENCY

Council President Hu moved to approve the Consent Agenda and Councilor Wolf seconded the motion. Mayor Lueb conducted a vote and the motion passed unanimously.

	Yes	No
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	

5. DISCUSS SOLID WASTE FRANCHISE FEES AND CHARGES AGGREGATE REPORT

Interim Finance Director Kang introduced this agenda item and gave some background before turning over the discussion to Consultant Chris Bell. He said every March the solid waste franchisees are required to submit annual reports which are reviewed by city staff to calculate the rate of return for the two franchisees. Depending on the blended rates the Tigard Municipal Code 11.40.090 applies an annual 8 % rate. Staff is seeking guidance from Council on two rate alternatives and timing of the adjustment, and will return on July 25 for adoption.

Consultant Chris Bell and Dave Huber (Waste Management) attended in person. Kristin Leichner (Pride Disposal) attended remotely. Consultant Bell was asked to study drop box fees and charges and complete a study on the city's solid waste collection as the proposed increase is significant.

Consultant Bell had a presentation showing the 2022 adjusted return. However, 2023 assumptions include a Metro solid waste disposal increase of 11.4%, yard debris cost increase of 34%, and comingled recycling increased 32% due to lower material values. The lag in new collection truck deliveries led to a 29% increase in depreciation, and there is a Teamsters labor increase of 2.8%. Insurance options are very limited for garbage haulers and have increased by 38%.

Consultant Bell showed slides of two alternatives for rate increases, one is to increase collection rates by the CPI – 8.01% and the other adjusts rates to the Cost of Service and does not increase the drop box/roll off compactor charges. Rate Alternative 1 is less expensive for residents and Rate Alternative 2 is less expensive for commercial container users.

Councilor Shaw said there was a slow uptake on comingling of food waste in yard debris and asked what the costs were to go back to just yard debris. She noted there was only one facility that will take food waste comingled with yard debris and asked if there were more facilities accepting yard debris only. Kristin Leichner said it goes to Recology NW in Forest Grove and whether there is food waste added or not, there was a price increase. In response to a question from Councilor Wolf about how many patrons use the food waste option, Ms. Leichner said they have not studied that but Recology NW estimates 7% of what they take in is food waste. Consultant Bell said it is 4-7% and difficult to measure.

Several Councilors expressed interest in examining the cost change of removing food waste from yard debris. Council consensus was to adjust rates in January. Councilor Singh agreed with January and while open to examining the cost, advocated keeping food composting. Youth Councilor Nag advised not taking the composting option away and advertising this service to increase its use.

Councilor Wolf requested information on when rate increases have occurred over the last 5 years.

Interim Finance Director Kang will return to Council on July 25 for consideration of these changes to the fees and charges schedule.

6. APPOINT YOUTH CITY COUNCILOR POSITION EFFECTIVE JULY 1, 2023

Executive Assistant Bengtson introduced this agenda item. Teammates advertised the youth councilor opportunity in the spring and interviews were conducted by Mayor Lueb, Council President Hu and current Youth Councilor Nag on June 21. The interview panel recommendation is for Council to appoint Madeline Vogel to be the next Tigard Youth City Councilor.

Council President Hu moved to appoint Madeline Vogel as the Tigard Youth City Councilor effective July 1, 2023. Councilor Shaw seconded the motion. Youth Councilor Nag gave an advisory vote of yes. Mayor Lueb conducted a vote and the motion passed unanimously.

	Yes	No
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	

7. APPOINT TIGARD PUBLIC LIBRARY BOARD MEMBER

Library Director Bernard introduced this agenda item and said she was recommending an outstanding community member to an open voting position on the Tigard Public Library Board. A member resigned mid-term and Board bylaws state that members serving as alternates will be given first consideration to fill a mid-term opening. She and Councilor Singh interviewed the alternates and are recommending that Bart Hawkins be appointed to a term ending in December 2024. She said he is eager to continue to contribute his perspective as an educator, parent, avid reader and lifelong learner to support the mission and vision of the library. Bart Hawkins (attending remotely) thanked them for the opportunity to be involved and support the library.

Councilor Singh moved to approve Resolution No. 23-19 and Councilor Shaw seconded the motion. City Recorder Krager read the number and title of the Resolution:

> RESOLUTION NO. 23-19 – A RESOLUTION APPOINTING ALTERNATE BOARD MEMBER BART HAWKINS TO COMPLETE A VACATED MID-TERM POSITION AS A VOTING MEMBER OF THE TIGARD LIBRARY BOARD

Youth Councilor Nag gave an advisory vote of yes and the Council voted unanimously to approve Resolution No. 23-19.

	Yes	No
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	

8. RESOLUTION OF THANKS FOR YOUTH CITY COUNCILOR AISHIKI NAG

Mayor Lueb read the resolution and said it was an incredible experience to watch Youth Councilor Nag invigorate the community and stand up for youth, holding Council accountable and going above and beyond to serve the community. Councilor Shaw appreciated her zeal and how she urged peers to vote. Councilor Singh thanked her for her curiosity and great questions. Council President Hu was very impressed with the youth on the trip to Washington DC and said it made him very hopeful for the future. Councilor Wolf noted her consistency and advocacy. City Manager Rymer said it has been a joy to work with her and see her being active on the council and in the community, with a laser focus on the environment. He said they look forward to hearing about her future endeavors.

Youth Councilor Nag said she was lucky to have this position and to have grown up in a city that offers this opportunity. She thanked everyone for their support and belief in her and noted the Council's continued commitment to youth.

Council President Hu moved to approve Resolution No. 23-20 and Councilor Wolf seconded the motion. City Recorder Krager read the number and title of the Resolution:

> RESOLUTION NO. 23-20 – A RESOLUTION THANKING AISHIKI NAG FOR HER SERVICE AS TIGARD'S YOUTH CITY COUNCILOR 2021-2023.

	Yes	No
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	

Mayor Lueb announced that Resolution No. 23-20 was approved by unanimous vote of the Council.

9. INCLUSIVE LANGUAGE AND DEMOGRAPHICS UPDATE

Assistant City Manager Nyland and Senior Management Analyst Hendrix presented this agenda item. The slide show is included in the packet for this meeting. Assistant City Manager Nyland said as part of creating a safe and welcoming community for all, their focus tonight is on language and communications. She added that DEI is not about excluding others. It is not about taking power away from some but it's about sharing power and adding chairs to the table and more voices to the conversation. The City of Tigard will use inclusive language, which means finding a way to name,

honor and value experiences and identities. She gave examples of steps already taken to incorporate inclusive language.

Senior Management Analyst Hendrix said additional steps include strengthening knowledge of who we are reaching and not reaching. In order to understand this and better serve our community, a set of seven demographic questions will be added to every city survey. These are encouraged, but optional. Demographics will be used to analyze what communication tools reach what folks.

Additional steps include cataloging our communication tools, a Service Request Portal, mobile application, and internal customer experience development team; applying our Racial Equity Toolkit to policy considerations, developing the Language Access Plan, exploring a content relations management (CRM) system, and developing an Inclusive Outreach and Engagement Toolkit and Strategic Communications, including a social media policy.

Senior Management Analyst Hendrix said the city was recently accepted into the University of Wisconsin-Madison's cohort focusing on 360 Thinking to work on a communications tools analysis. Assistant City Manager Nyland said one of the questions posed on the application to the cohort was getting a better understanding on if we are informing the community or just inundating them with messages. Are we exhausting them or engaging them? This will be our focus in the next two months as we work with this group.

Council President Hu said he agrees that it is not a zero-sum game and just including someone does not mean someone else is excluded. He said at a meeting with IRCO (Immigrant & Refugee Community Organization) he found they did not know who to call at the city and one request was for a contact list to give to community members. He noted that this brings back the need for a community navigator position which was not funded in the budget. Assistant City Manager Nyland said the contact card was a great idea as we assume people going to the website know what service falls under which department.

Councilor Singh said he appreciated the work and the demographic questions are a step in the right direction. He asked if the city had a CRM (Content Relations Management) tool. Assistant City Manager Nyland said the city does not have one at the moment and uses a spreadsheet, but Tyler Technologies will help with a CRM in the future.

Youth Councilor Nag thanked the team for using the words community member instead of citizen and mentioned how the word "alien" had impacted her. She suggested adding questions about ADA requirements and childcare accommodations for board and committee applications.

Councilor Shaw asked if they had asked any community organizations to vet the survey demographic questions as some questions may be culturally offensive.

Assistant City Manager Nyland noted community navigator is on their radar and they are working on this. During the budget discussions they wanted to identify ways that not only a person in a position could fill but what the needs are to make it easier for anyone to interact with the city.

10. COMMUNITY DEVELOPMENT PROJECTS QUARTERLY UPDATE

Community Development Director Asher gave the staff report for this item. A copy of the slide show is in the packet for this meeting. He spoke about 23 projects categorized by division, highlighting milestones and noting any schedule updates. He noted that these projects do not include the work other Community Development Staff do such as the Building Department and Code Compliance.

Councilor Hu asked if staff wanted a council liaison on the Downtown Parking Committee. Mr. Asher said he preferred not to have an elected official on the working committee; but would rather involve them at the end when it comes to Council for decision making. He will discuss this with Redevelopment Project Director Farrelly.

11. NON-AGENDA ITEMS – None.

12. ADMINISTRATIVE REPORT – This item was moved to an earlier time in the meeting.

13. EXECUTIVE SESSION: Held earlier.

14. ADJOURNMENT

At 9:04 p.m. Council President Hu moved for adjournment. Councilor Shaw seconded the motion and it passed unanimously.

	Yes	No
Councilor Shaw	✓	
Councilor Singh	✓	
Councilor Wolf	✓	
Council President Hu	✓	
Mayor Lueb	✓	

_____
Carol A. Krager, City Recorder

Attest:

_____
Heidi Lueb, Mayor

Date: _____

AIS-5185 **5.**

Business Meeting

Meeting Date: 07/11/2023

Length (in minutes): 45 Minutes

Agenda Title: Hall Boulevard Corridor Conceptual Design Report Briefing

Authored By: Dave Roth

Presented By: Dave Roth, Principal Transportation Planner and Joe Wisniewski, City Engineer

Item Type: Update, Discussion, Direct Staff

Public Hearing Legal Ad Required?: No

Publication Date:

Information

EXPLANATION OF ISSUE

This item will provide a brief history of the city's efforts to facilitate investment in critical repairs and safety upgrades to the Oregon Department of Transportation (ODOT) owned, operated, and maintained 3-mile segment of Hall Boulevard within Tigard city limits located between SW Locust Street (mile point 4.08) and SW Durham Road (mile point 7.09). Please note that these repairs and upgrades for safety are different from the State of Good Repair improvements that are the responsibility of ODOT to deliver prior to a transfer to the City.

Over the past year, Tigard teammates and Alta Planning and Design, a project consultant, have engaged with the community to develop a "Conceptual Design Report" that documents a future Hall Boulevard corridor vision supportive of people at all ages and abilities traveling through and across this system. Tigard teammates and the Alta Planning and Design project team will co-present the results of this year-long planning process including the feedback from many community and stakeholder engagement events.

ACTION REQUESTED

No Council action is requested at this time. Tigard teammates will return later this summer or fall to seek a resolution from Council in support of the design principals presented in the Hall Boulevard Conceptual Design Report and for continuation of work toward an eventual jurisdictional transfer of Hall Boulevard from the Oregon Department of Transportation, pending necessary safety improvements on the corridor by the state.

BACKGROUND INFORMATION

Hall Boulevard, also known as OR-141, is major north-south arterial corridor running through Tigard and providing connections to neighboring communities. The road sees a diversity of users traveling on foot, aided by mobility devices, on two (or four) wheels, via public transit, and by personal vehicle to meet their daily transportation needs. After decades of disinvestment, the roadway impedes Tigard's ability to deliver safe and efficient transportation options to its residents, particularly those most in need of support.

For years, the City of Tigard has contemplated taking on ownership of the 3-mile roadway segment within Tigard city limits through a mechanism called a "jurisdictional transfer" as a means of facilitating and expediting needed repairs and safety upgrades based on local design objectives. In 2016, city teammates conducted an initial condition assessment of needed repairs and determined required capital costs to reach

a state of good repair, required prior to transfer of Hall Blvd from ODOT to Tigard to be between $12 million and $31 million, depending on level of investment. At the time, no action was taken to advance a transfer in ownership under these cost liability assumptions.

In late 2019, at the direction of the city's Transportation Strategy Team, city teammates hired a consultant to update and revise the 2016 condition assessment report in alignment with current city goals, assumed future Hall Boulevard cross-section requirements, and understanding of ODOT-defined "State of Good Repair" elements: those being existing assets rather than missing or sub-standard assets. In early spring of 2020, a revised condition assessment report determined a planning level cost estimate for needed repairs, without safety upgrades, to be just under $30 million for the 3-mile roadway segment within Tigard city limits.

Shortly after completion of the 2020 condition assessment report, Tigard teammates initiated a conversation and process with ODOT staff to work toward a shared goal of achieving a jurisdictional transfer of the roadway. The two agencies defined a shared work plan and timeline in a Memorandum of Understanding (MOU) signed in the fall of 2020 and later updated to reflect a revised project timeline in 2022.

A key element of the MOU requires both agencies to agree to a final "State of Good Repair" cost estimate and report. Over the past two years, city teammates and ODOT staff have been coordinating to build understanding around the infrastructure needs of this corridor. This work has resulted in an initial agreement of a $30 million "State of Good Repair" cost estimate to address deferred maintenance issues such as pavement condition, roadway striping, stormwater facilities, structure, and signage; recent work on Hall Blvd, including ADA curb ramp improvements ($7 million), has already been factored into this figure. Addressing the "State of Good Repair" improvements must occur prior to transfer of this roadway from ODOT to the City.

Although addressing deferred maintenance is a critical component of a potential future jurisdictional transfer, it stops far short of addressing the missing and sub-standard infrastructure on Hall Boulevard that makes daily travel for pedestrians, bicyclists, mobility device users, and transit users challenging and, in some cases, impossible. To define needed multi-modal safety upgrades and to present a fuller picture of the overall needed investment on Hall Boulevard within city limits, Tigard teammates initiated a project in 2022 to engage the broader community on developing a future corridor vision for Hall Boulevard.

The intent of the Corridor Visioning Project is to create a community-driven blueprint for a future roadway that serves people of all ages and abilities and transforms Hall Boulevard from a liability to an asset supportive of broader city goals and aligned with city policy. Alta Planning and Design, a local multi-modal planning firm, was hired to lead this work and will join city teammates to co-present the results of this year-long planning process to Tigard City Council. The project team anticipates a final Hall Boulevard "Conceptual Design Report" to be completed by August 2023.

Combined, the "State of Good Repair" report and "Conceptual Design Report" will provide the basis for a required investment in Hall Boulevard to both meet the community's needs.

Public Involvement

- Key Stakeholder interviews
- Open House 1 (virtual) & public input map
- Open House 2 (in person) & public input map
- Monthly Tigard Transportation Advisory Committee (TTAC) meetings

Impacts (Community, Budget, Policies, Strategic Plan, Council Goals)

- 2020-2025 Strategic Plan
    - *Tigard is an equitable community that is walkable, healthy, and accessible for everyone*
    - *Create a well-connected, attractive, and accessible pedestrian network*
- 2023-2025 Council Goals
    - *Prioritize carbon-responsibility in the City of Tigard operations, projects, and policies*
    - *Identify and secure funding to complete the Hall Boulevard jurisdictional transfer*
    - *Increase funding to expand connectivity and support an active, healthy, and accessible community*

ALTERNATIVES & RECOMMENDATION

No Council action is requested at this time. This briefing is for information only.

ADDITIONAL RESOURCES

N/A

Attachments

Presentation

Hall Boulevard

Corridor Visioning Project

Tigard City Council
7.11.23

alta



Agenda

- Project Overview
- Planning Process
- Proposed Improvements



Project Overview

Context | Vision | Goals

The Hall Boulevard Corridor Visioning Project defines a range of upgrades and safety improvements to allow residents and visitors of all ages and abilities to move throughout and across the corridor to meet their daily travel needs.

Planning Context

- ODOT and City of Tigard jurisdictional transfer
- Repairs needed to bring Hall Blvd up to a “State of Good Repair”
- Improvements will be funded by a mix of sources
- Current City funding sources not adequate to fund large capital project



Vision

A vision for Hall Boulevard that serves many goals:

The future Hall Boulevard should serve as an important asset and place for the community. The corridor must function well for users of all ages and abilities, promote safety, connect neighborhoods, and serve as a catalyst for new development opportunities along the corridor.

MAP 1: Project Extent and Key Areas



Design Principles & Policy

All City policies and plans set the stage for this Vision:

- Complete Street Policy
- Transportation Safety Action Plan
- City Council Goals 2023-2025



[7] *Others: City of Tigard TSP, City of Tigard Strategic Plan, Tigard Complete Streets Policy Implementation Plan, City of Tigard Comprehensive Plan*

Design Principles & Policy

- Tigard Complete Street Policy
  - Serve all Users
  - Provide Interconnected Networks
  - Use Best Practices and Innovative, Context-Sensitive Design
  - Support Land Use Planning Goals
  - Internal and Jurisdictional Coordination
  - Measure Performance



Design Principles & Policy

- Tigard Transportation Safety Action Plan
  - Ranked intersections in Tigard given their history of crashes and severity:
    - #1 = Hall Blvd and Hwy 99
    - #14 = Hall Blvd and Durham Rd



Others: City of Tigard TSP, City of Tigard Strategic Plan, Tigard Complete Streets Policy Implementation Plan, City of Tigard Comprehensive Plan

Design Principles & Policy

- City Council Goals 2023-2025
    - Strategic priority: Create a well-connected, attractive, and accessible pedestrian network.
    - Goals + Actions: 4.1 Identify + secure funding to complete the Hall Boulevard jurisdictional transfer
    - Goals + Actions: 4.3 Increase funding to expand connectivity + support an active, healthy, accessible community
    - Tigard's Vision: Tigard is an equitable community that is walkable, healthy, and accessible for everyone.



GUIDING PRINCIPLES FOR THE HALL CORRIDOR VISION:



WALKABILITY



CONNECTEDNESS



EQUITY

1. Walkable
    a) Safe and comfortable for all ages and abilities.
    b) Multi-modal: encouraging pedestrian and bicycle travel.

2. Connected
    a) Connecting residents to parks, schools, transit, businesses and other neighborhoods.

3. Equitable
    a) Supporting environmental and community health.
    b) Addressing access disparities for low-income communities and communities of color.

Planning Process

Existing Conditions| Public Engagement | Concept Development

Existing Conditions

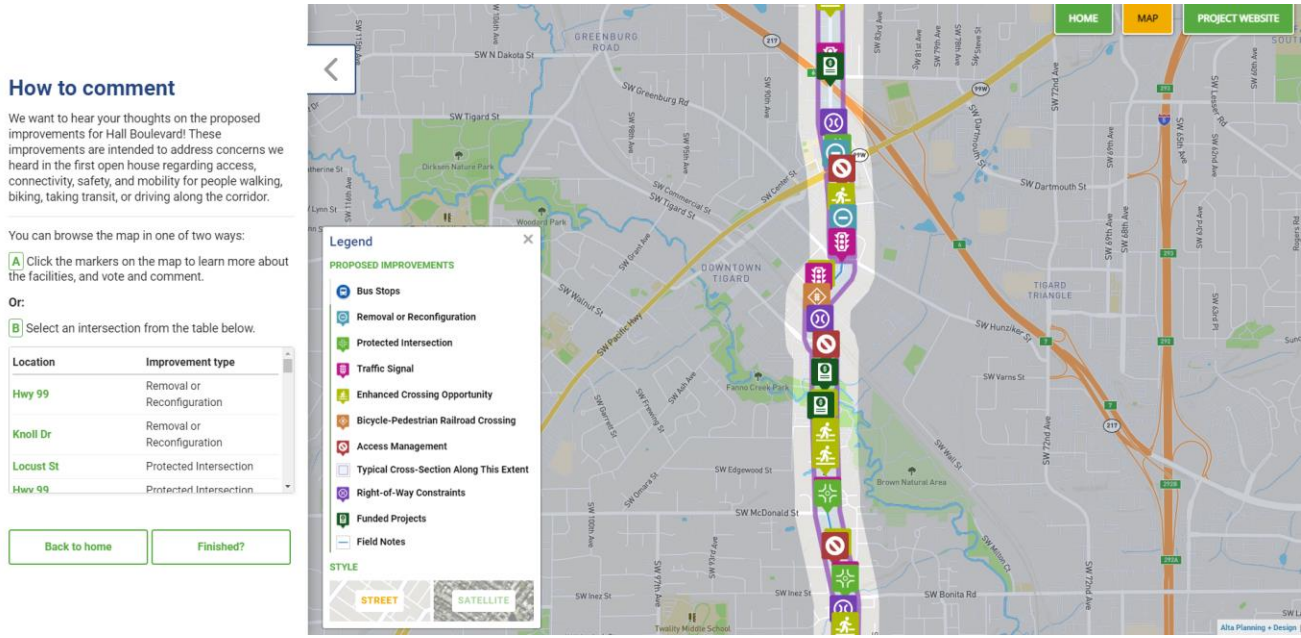
- Assets condition assessment (2019)
    - According to past assessments, the percentage of assets that need to be replaced for "State of Good Repair":
        - 81% of roadway pavement
        - 98% of curb ramps
        - 65% of storm drainage facilities
        - Ash Creek Bridge
    - Some work has been done since
- Existing conditions analysis



Public Engagement

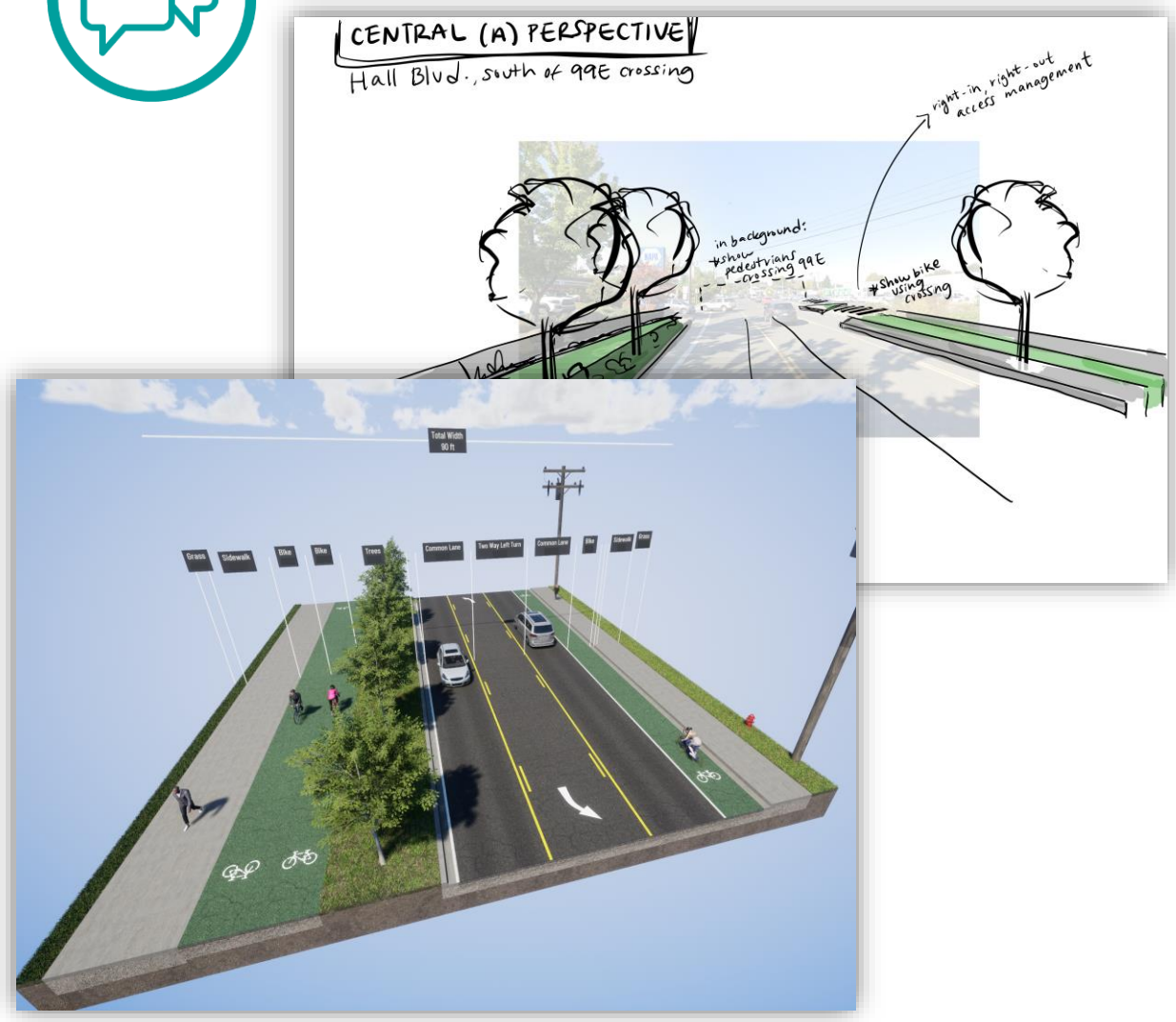
- Two rounds:
  - Round 1 supported existing conditions analysis
  - Round 2 refined concepts and proposed improvements





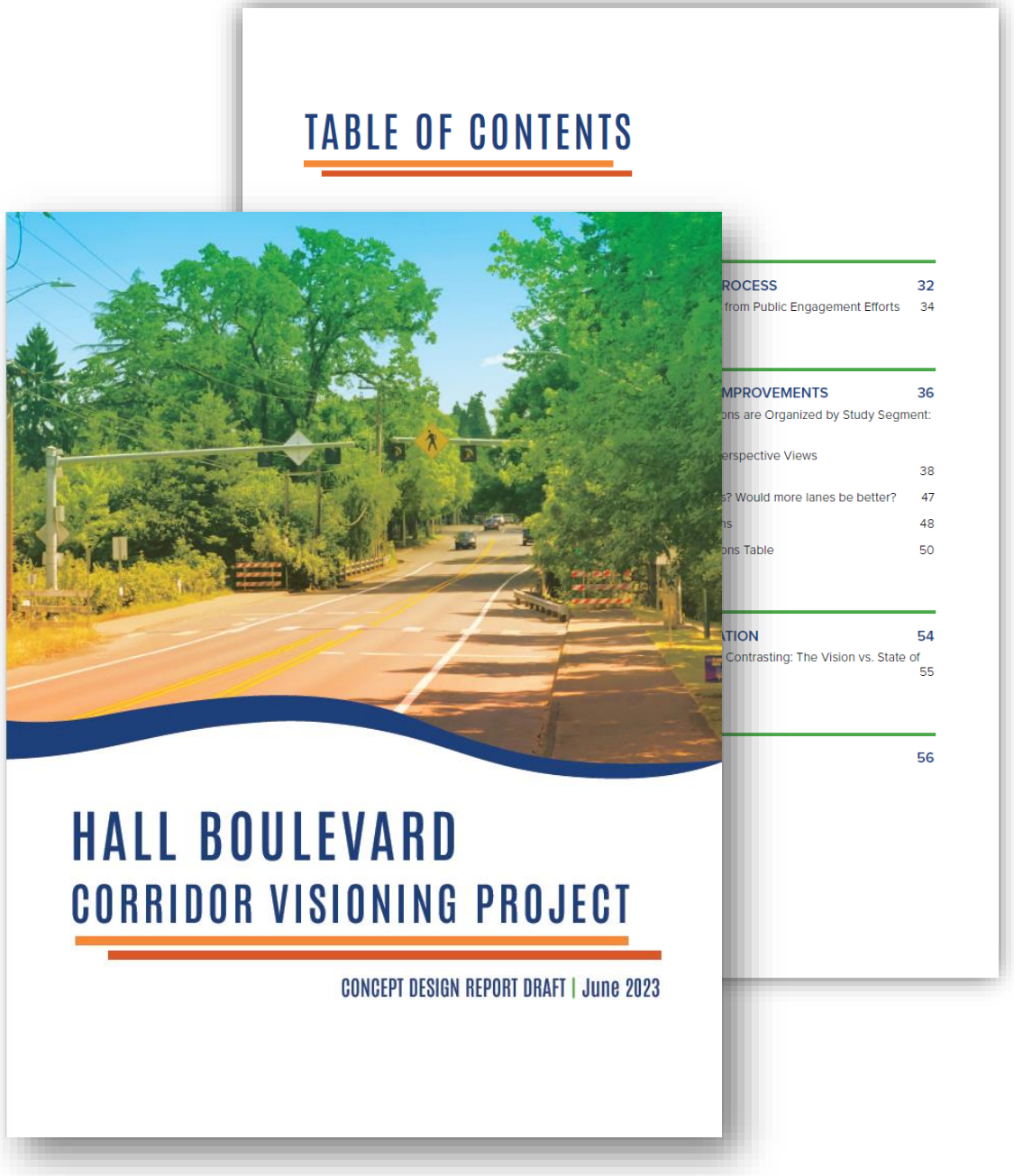
Concept Development

- Informed by existing conditions analysis and public input
- Generated alternatives
- Refined with public input
- Planning process resulted in a high-level concept based on City values & public input



Concept Design Report

- Why Hall Boulevard, Why Now?
- Policy Context
- Recommendations
- Renderings
- Cost estimates

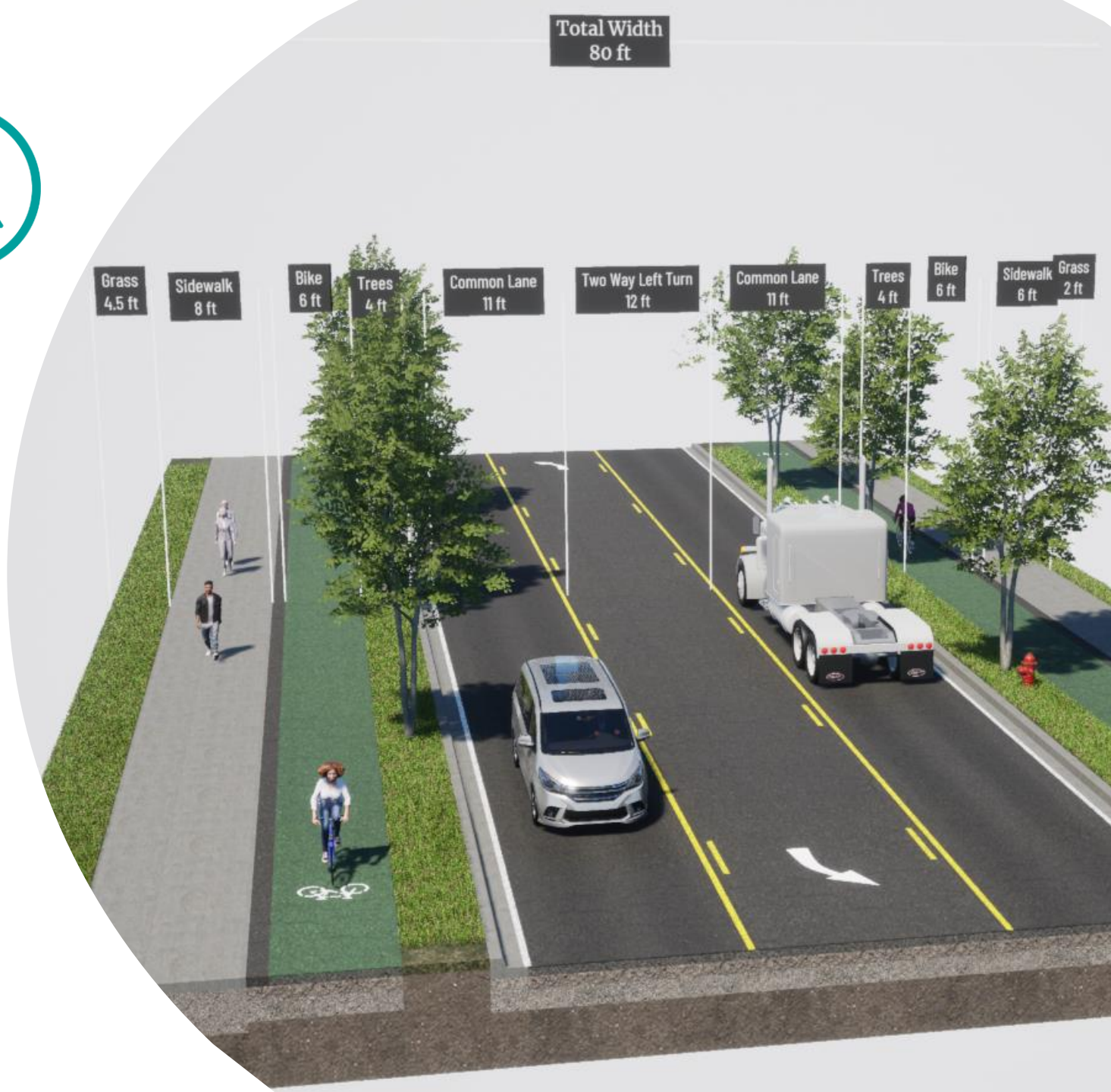


Proposed Improvements

Cross Section| Improvements Overview| Improvements Detail

Proposed Cross Section

The proposed vision for Hall Boulevard is of a complete corridor that includes 2 general travel lanes with a center turn lane, provides safe and continuous places for people to walk and bike, and includes more trees and vegetation, and lighting.

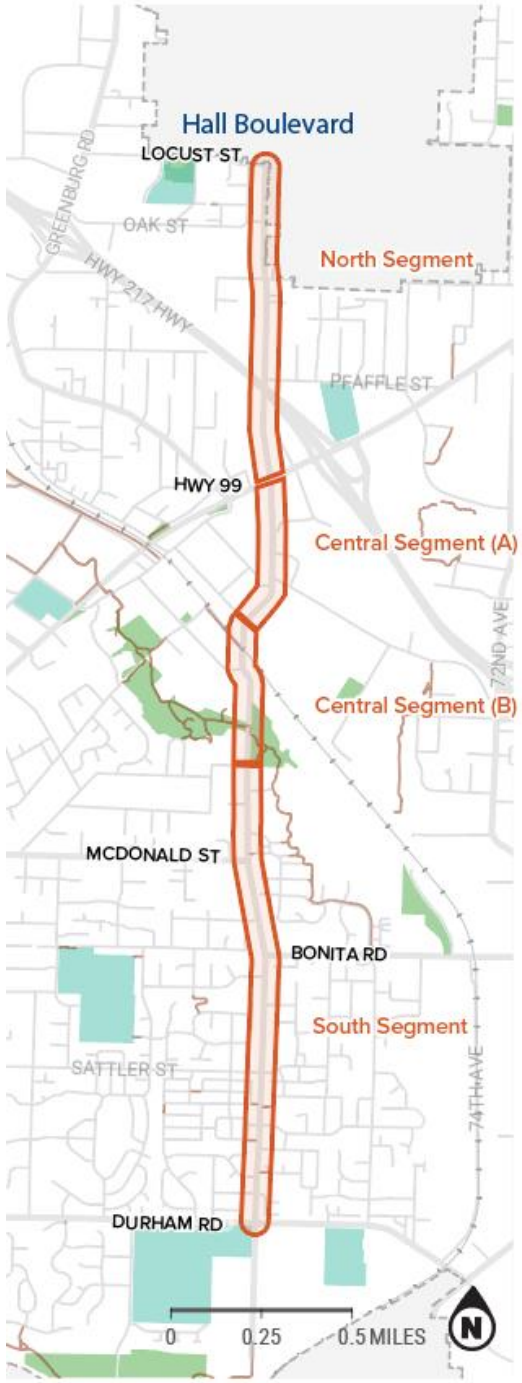




Proposed Cross Section

Improvements Overview

- 4 Study Segments
- 4 Typical Cross Sections
- Intersection and crossing recommendations



Consistent: Each segment will feature 2 travel lanes with a center turn lane

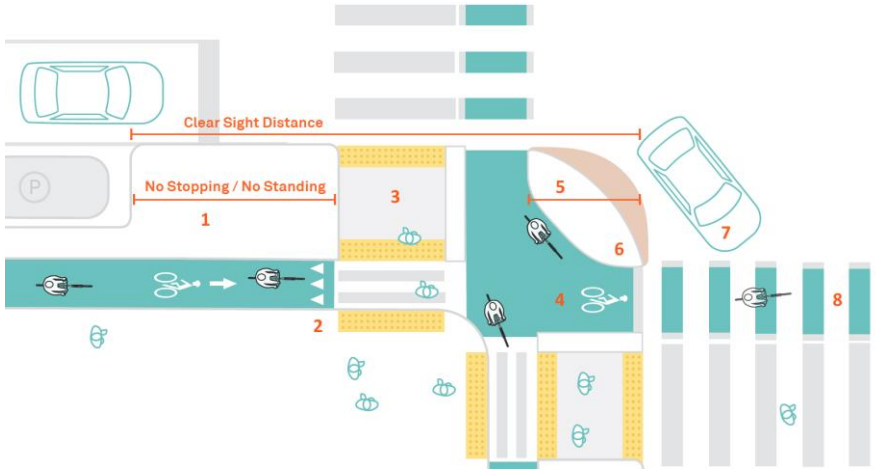
Multimodal: Continuous biking and walking facilities, improved transit stops, enhanced crossings.

Environmentally aware: Street trees and stormwater infrastructure throughout

Improvements Overview

- Protected intersections
- Fanno Creek Bridge, Ash Creek Bridge replacement
- Intersection realignment (Hunziker/Scoffins)
- Signal timing improvements (McDonald/Bonita)



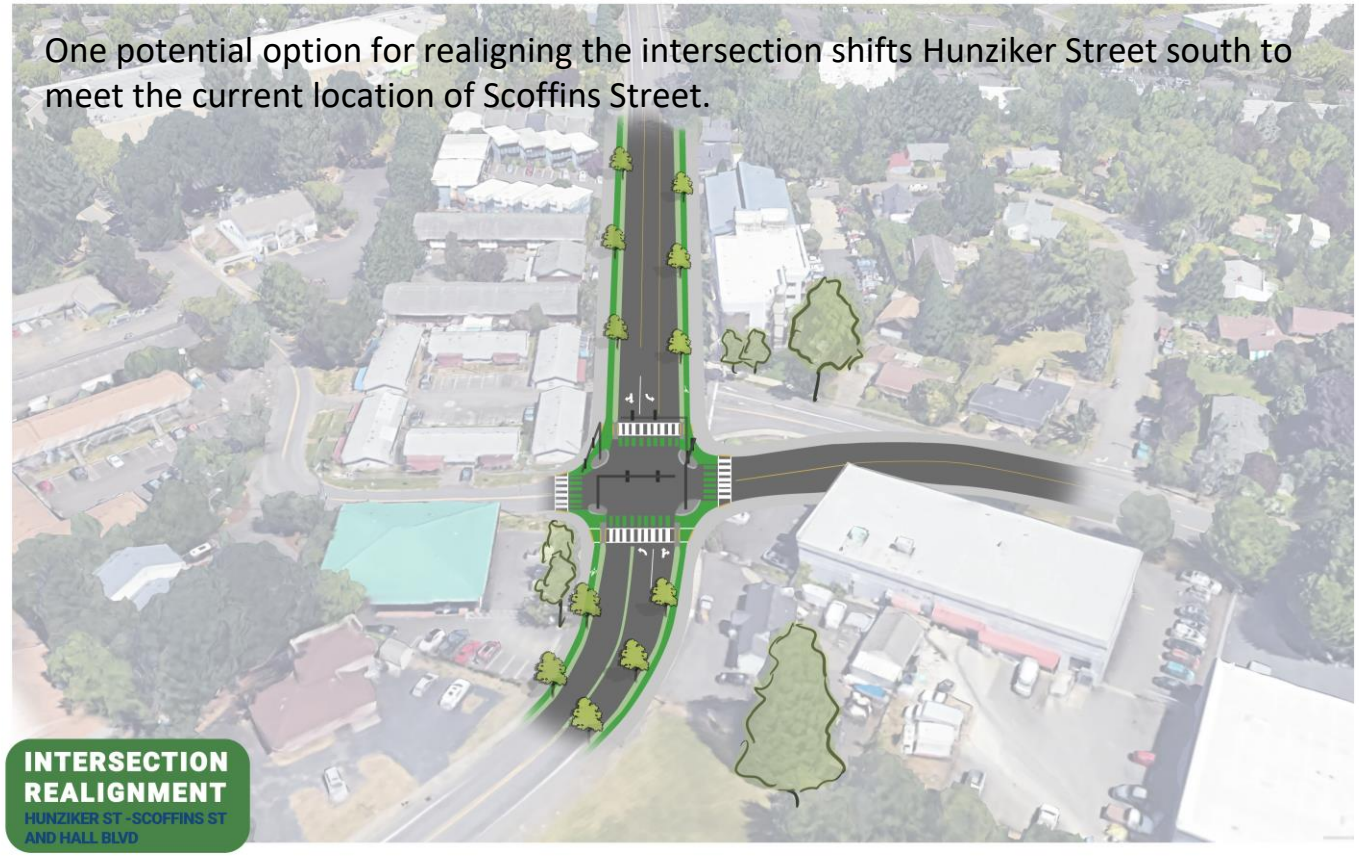


Protected intersections are recommended for all intersections on the Major City Bikeways network.

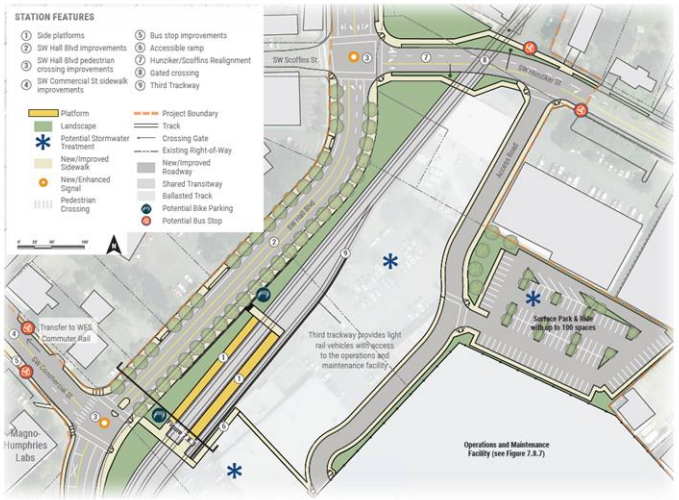
Improvements Overview

- Protected intersections
- Fanno Creek Bridge, Ash Creek Bridge replacement
- Intersection realignment (Hunziker/Scoffins)
- Signal timing improvements (McDonald/Bonita)

One potential option for realigning the intersection shifts Hunziker Street south to meet the current location of Scoffins Street.

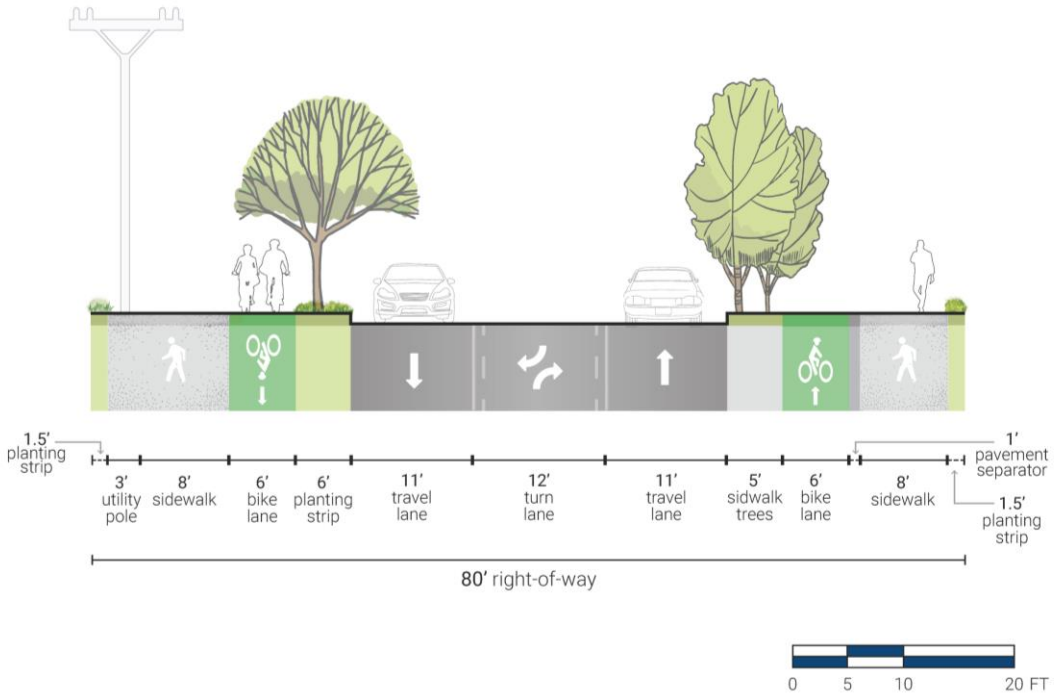


The Hunziker-Scoffins realignment is supported by other plans, including the Southwest Corridor Light Rail Project.



North Segment

Locust St to Hwy 99





Locust St
Protected Intersection

North Segment:
Locust St to Hwy 99*

Oak St
Enhanced Crossing Opportunity

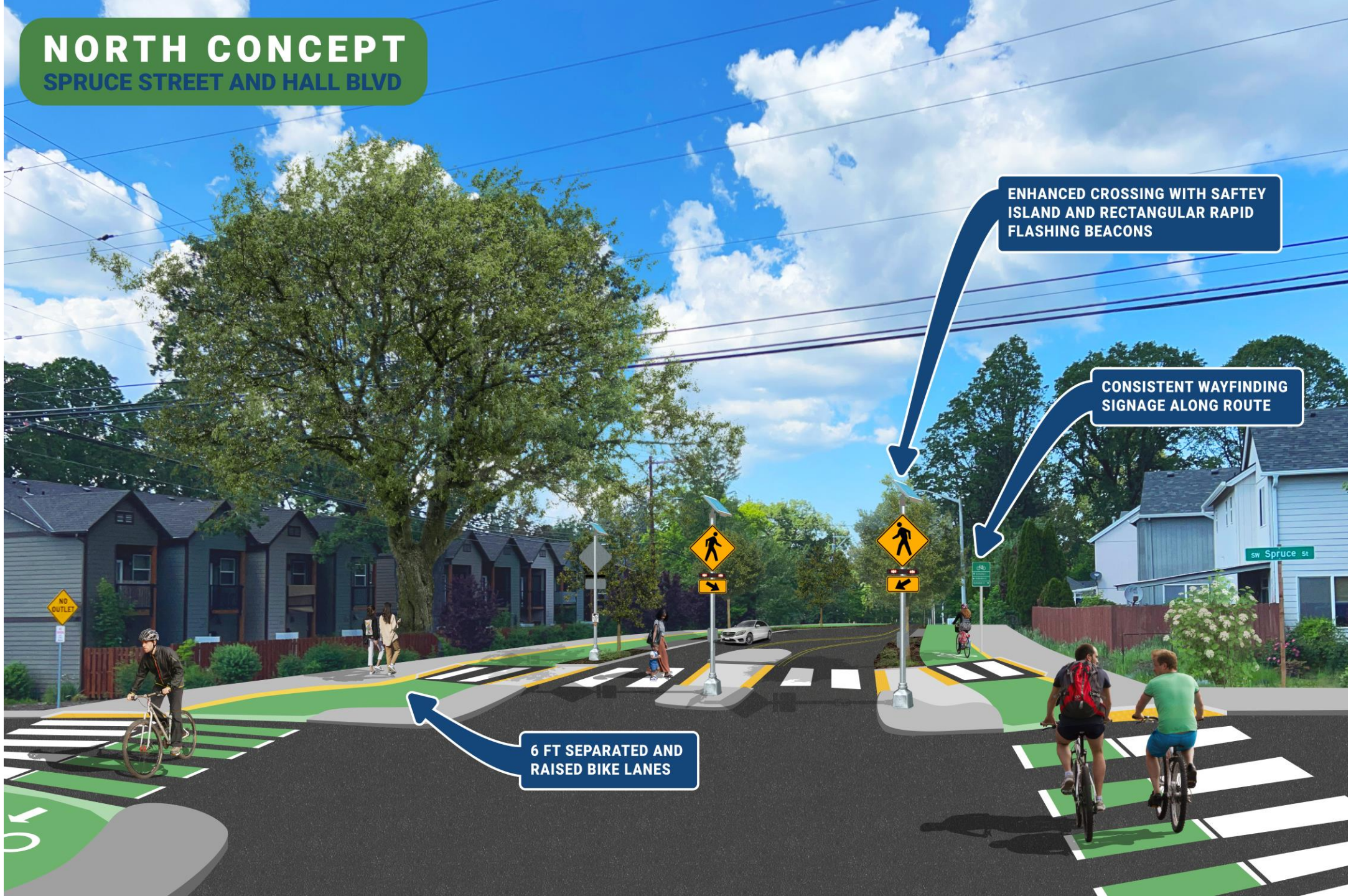
Spruce St
Enhanced Crossing Opportunity

Steve St
Enhanced crossing opportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

Pfaffle St
Traffic Signal

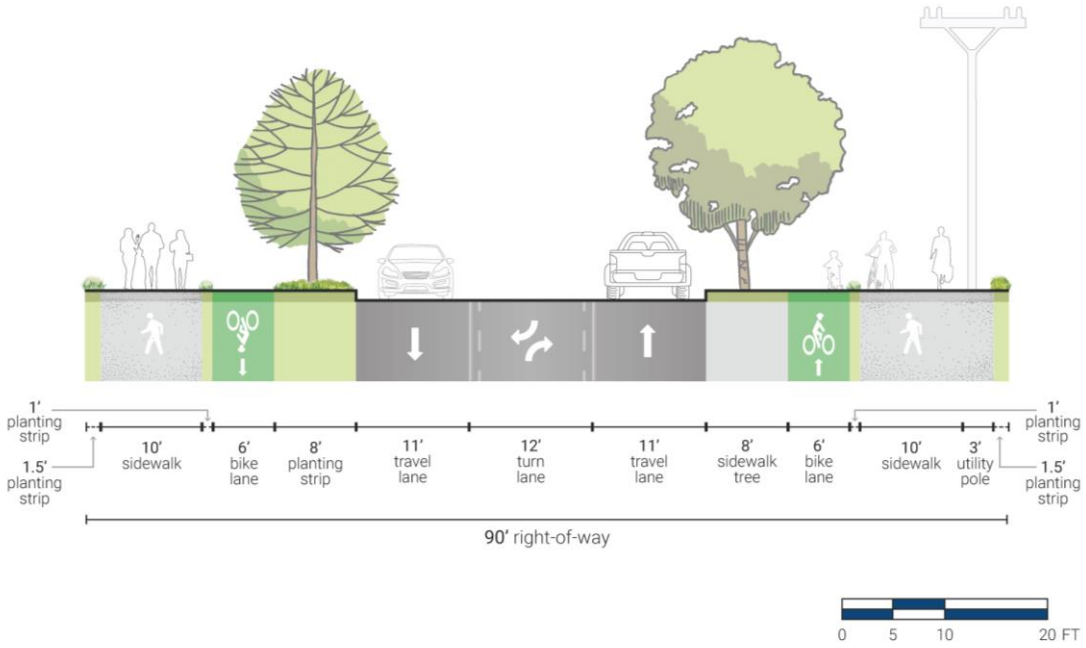
Route 78 Bus Stop North of Hwy 99
Right-of-Way Constraints

**To see more details about these recommendations, see the full recommendations table at the end of this chapter.*


NORTH CONCEPT
SPRUCE STREET AND HALL BLVD
ENHANCED CROSSING WITH SAFTEY ISLAND AND RECTANGULAR RAPID FLASHING BEACONS
CONSISTENT WAYFINDING SIGNAGE ALONG ROUTE
6 FT SEPARATED AND RAISED BIKE LANES
NO OUTLET
SW Spruce St

Central A Segment

Hwy 99 to Commercial St





Hwy 99
Protected Intersection

Hwy 99
Remove Slip Lane

South of Hwy 99
Access Management

Central A Segment:
Hwy 99 to Commercial St*

Knoll Dr
Enhanced crossing opportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

Knoll Dr
Remove Northbound Right Turn Lane

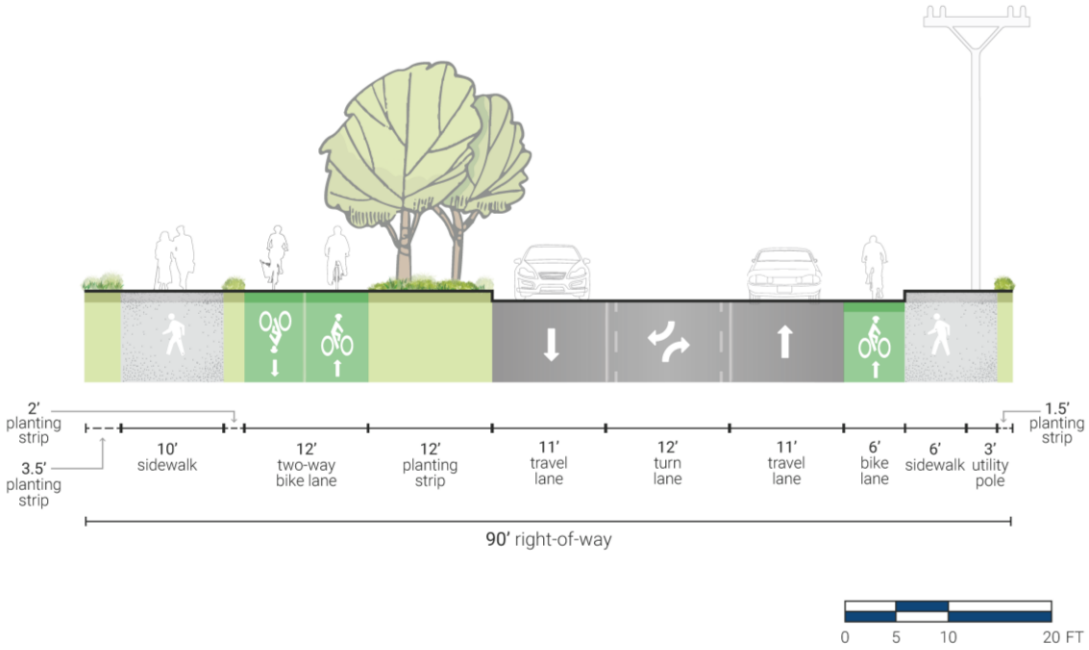
Scoffins St
Traffic Signal Changes and Intersection Realignment. Study feasibility of roundabout.

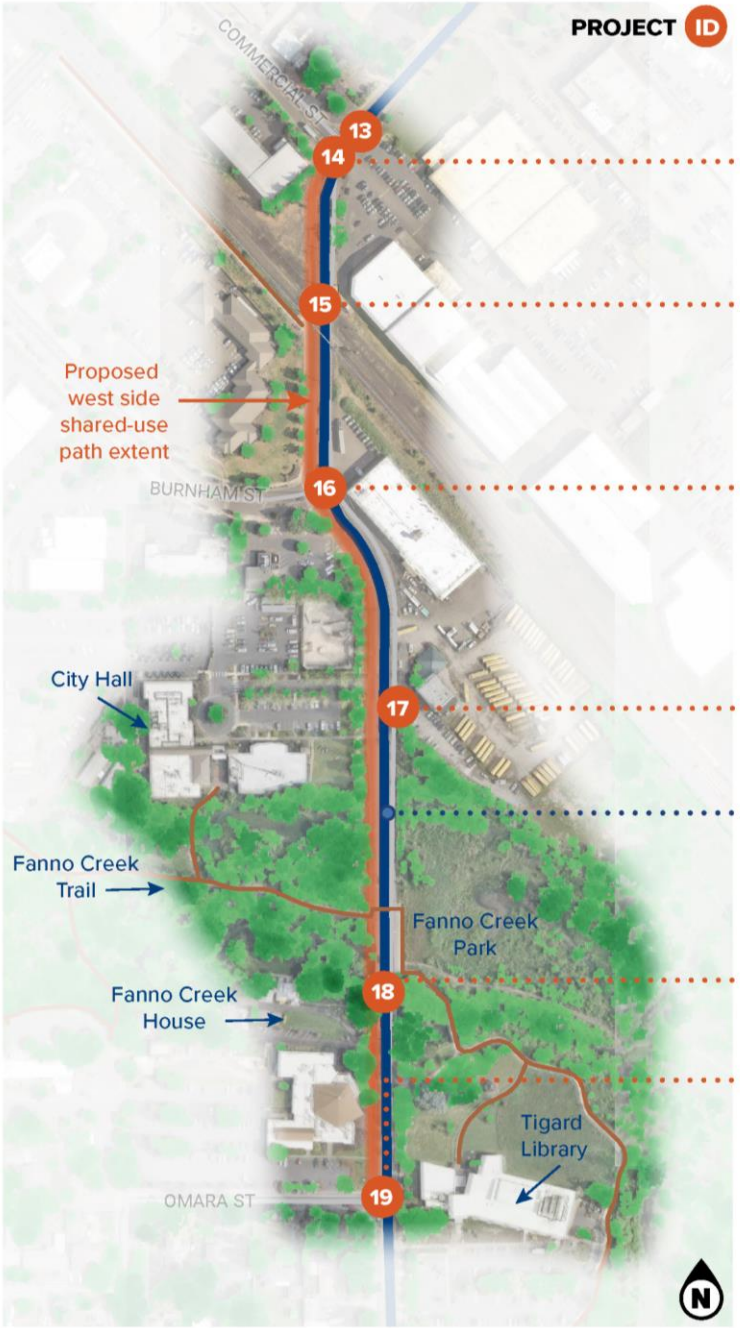
Commercial St
Enhanced Crossing Opportunity

**To see more details about these recommendations, see the full recommendations table at the end of this chapter.*

Central B Segment

Commercial St to Omara St





Commercial St
Traffic Signal

RR Crossing
Bicycle-Pedestrian Railroad Crossing

Burnham St
Right-of-Way Constraints

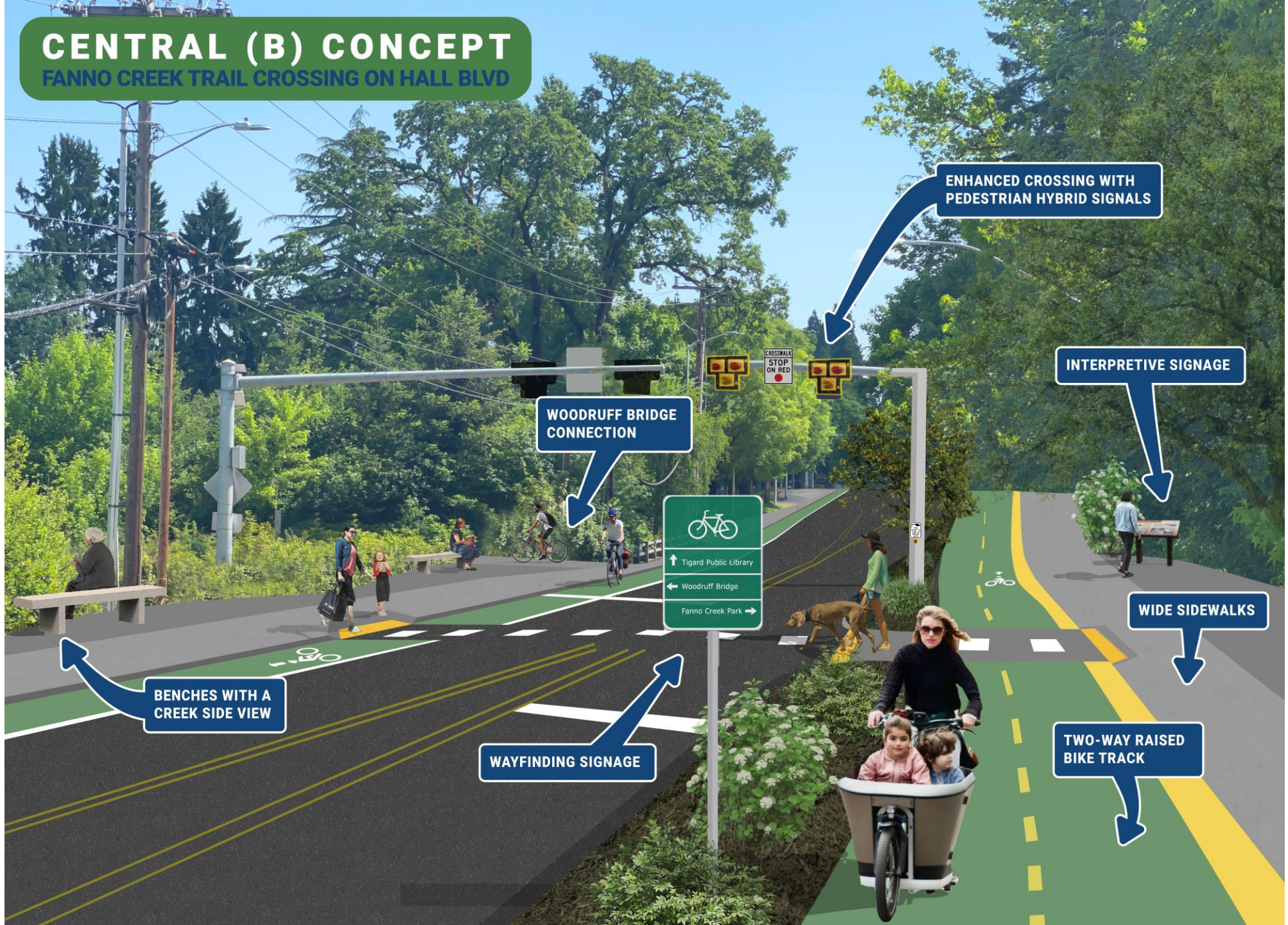
South of Burnham St
Access Management

Central B Segment: Commercial St to Omara St*

Fanno Creek Bridge
Bridge replacement to accommodate all modes

Omara St
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

**To see more details about these recommendations, see the full recommendations table at the end of this chapter.*

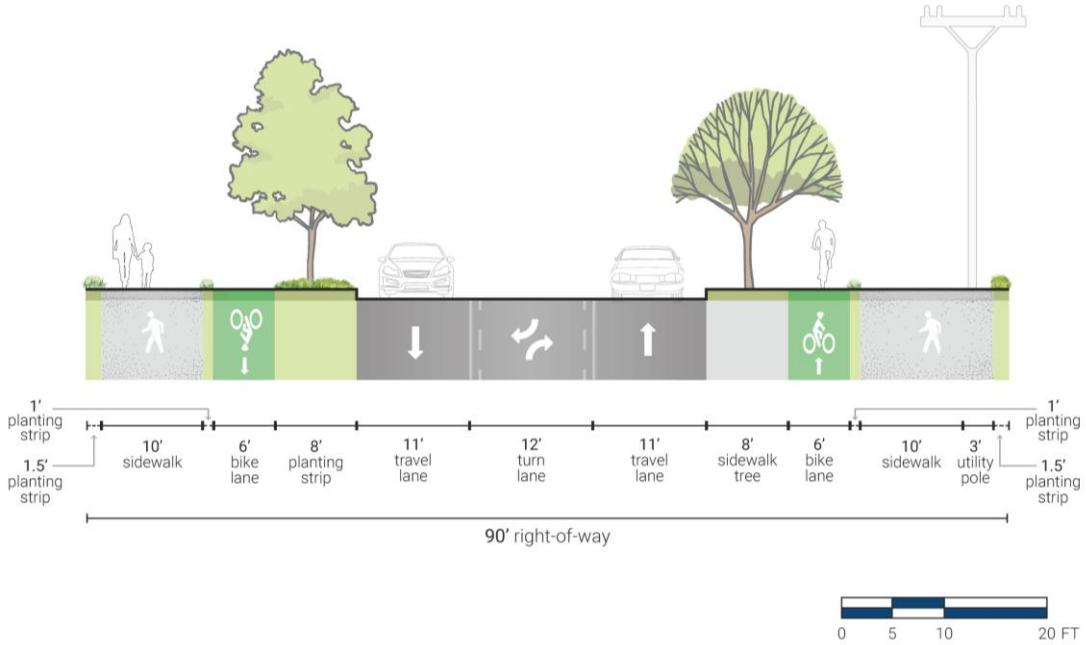

CENTRAL (B) CONCEPT
FANNO CREEK TRAIL CROSSING ON HALL BLVD
ENHANCED CROSSING WITH PEDESTRIAN HYBRID SIGNALS
INTERPRETIVE SIGNAGE
WOODRUFF BRIDGE CONNECTION
CROSSWALK
STOP ON RED
Tigard Public Library
Woodruff Bridge
Fanno Creek Park
WIDE SIDEWALKS
BENCHES WITH A CREEK SIDE VIEW
WAYFINDING SIGNAGE
TWO-WAY RAISED BIKE TRACK

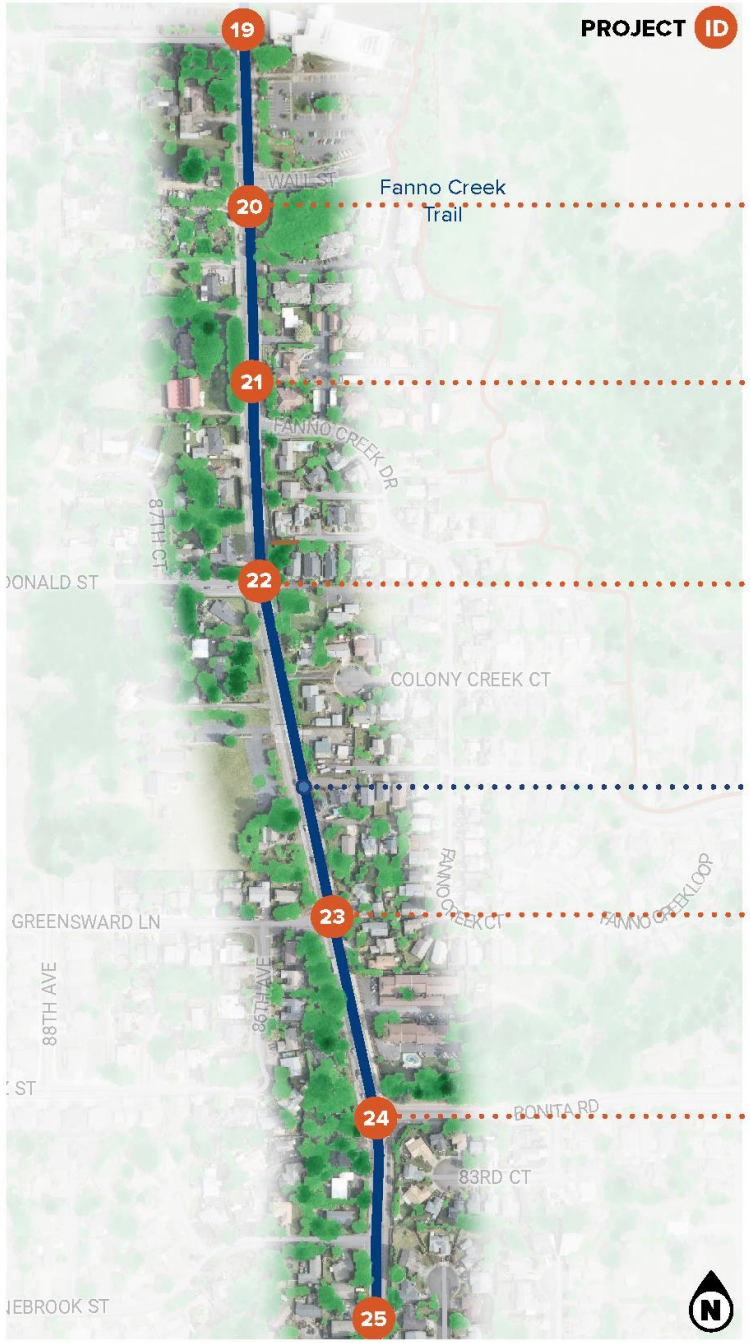


Central B Segment

South Segment

Omara St to Durham Rd





Wall St
Enhanced Crossing Opportunity

Between Regina Ln and Fanno Creek Dr
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

McDonald St
Protected Intersection, Traffic Signal Improvements. Study feasibility of roundabout.

South A Segment: Omara St to Durham Rd*

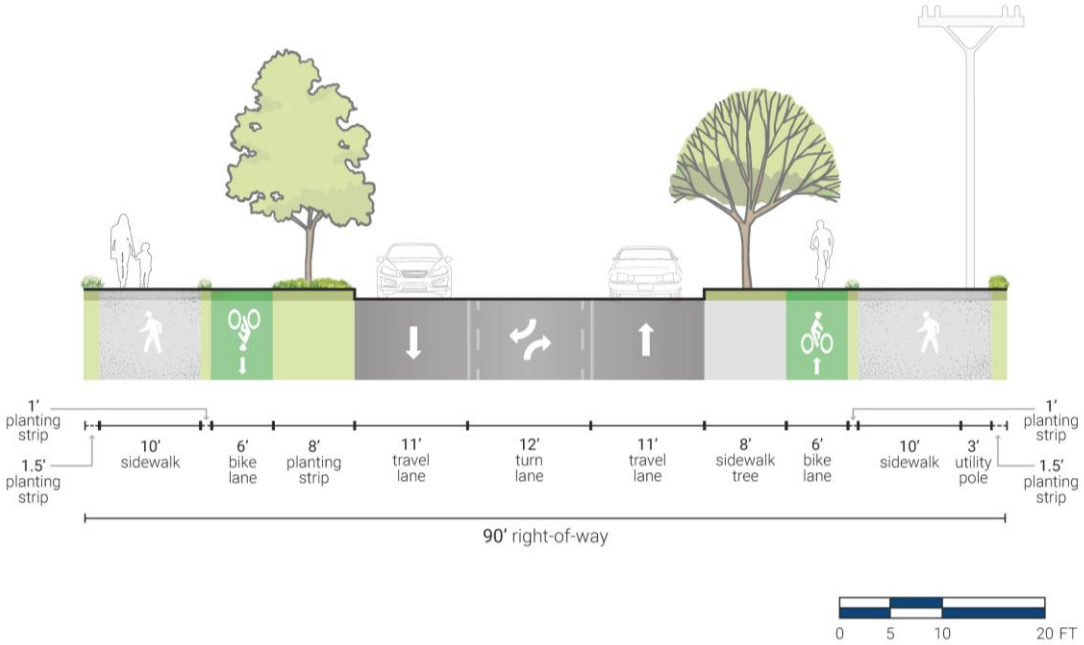
Greenswald Ln
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

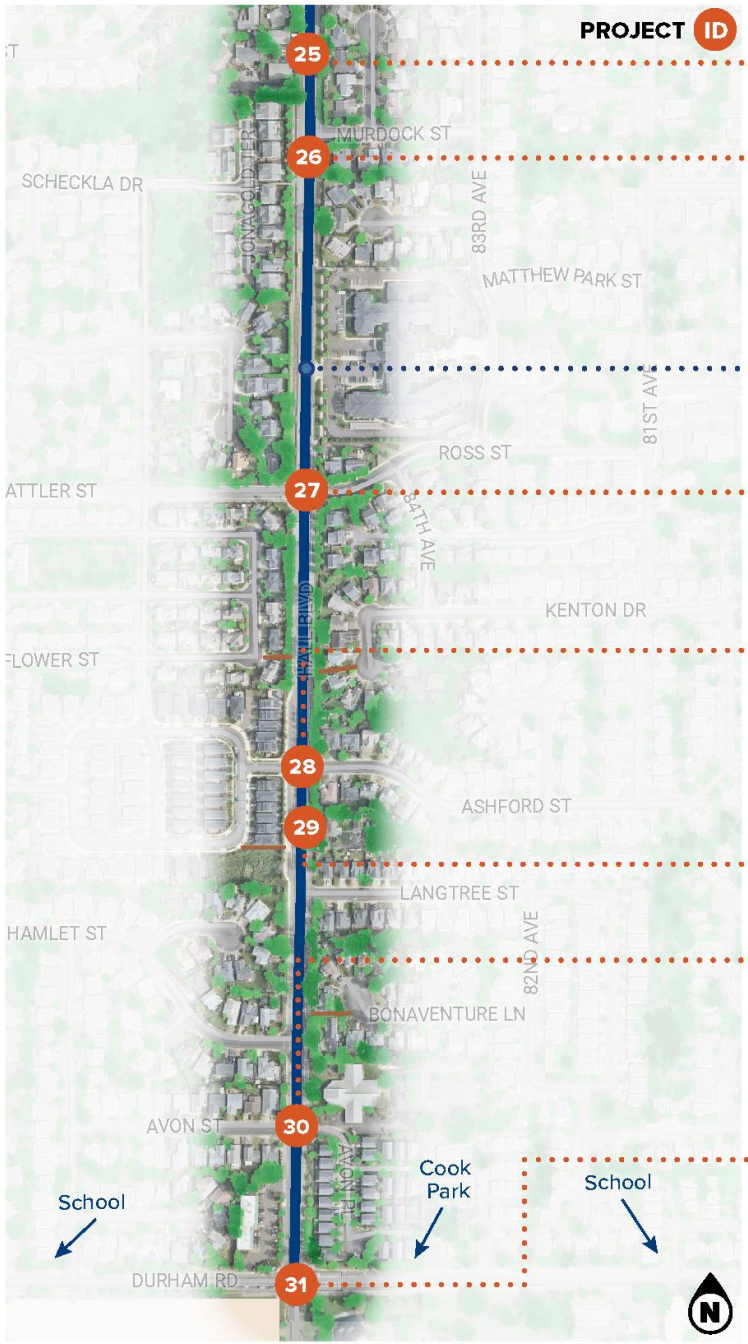
Bonita Rd
Protected Intersection, Traffic Signal Improvements. Study feasibility of roundabout.

**To see more details about these recommendations, see the full recommendations table at the end of this chapter.*

South Segment

(Continued) Omara St to Durham Rd





South of Pinebrook St
Right-of-Way Constraints

Murdock St
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

South B Segment: Omara St to Durham Rd*

Sattler St
Protected Intersection

Ashford St
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

South of Ashford St
Right-of-Way Constraints

Avon St
Enhanced crossing oportunity with potential implementation of a rectangular rapid flashing beacon (RRFB).

Durham Rd
Protected Intersection

**To see more details about these recommendations, see the full recommendations table at the end of this chapter.*

South Segment



Preliminary Cost Estimate

- State of Good Repair: $30M
- Hall Boulevard Corridor Vision:
    - $61M Construction
    - $52M Construction Engineering + Additional Costs
    - $113M Total
        - This includes a 40% contingency applied to construction estimate

Next Steps

- Finalize Concept Design Report
- Return to City Council with Final CDR for resolution of support
- Jurisdictional Transfer
- Funding Opportunities

Thank you

Questions?

Dave Roth
daver@tigard-or.gov

Derek Abe
derekabe@altago.com

alta

AIS-5276 **6.**

Business Meeting

Meeting Date: 07/11/2023

Length (in minutes): 30 Minutes

Agenda Title: Tigard Resilience Update

Authored By: Gary Pagenstecher

Presented By: Project Planner Gary Pagenstecher

Item Type: Update, Discussion, Direct Staff

Public Hearing Legal Ad Required?: No

Publication Date:

Information

EXPLANATION OF ISSUE

The City of Tigard Resiliency Initiative is a three-part, tiered approach to pre-disaster energy resiliency in Tigard including: 1) installation of photovoltaic (PV) generation and battery storage to support resilient operation of the emergency operations center (EOC) as a micro grid, 2) public infrastructure and private development PV generation and battery storage for resilient publicly accessible energy and services through a microgrid, and 3) district-scale renewable energy generation and storage through a microgrid for resiliency, climate benefits, and economic development. (See a detailed description in the attachment)

This initiative was developed by Community Development in response to activities related to the Strategic Plan and the Fields Property development and a notice of funding opportunity for FEMA's new Building Resilient Infrastructure and Communities (BRIC) grant. Application was made in December 2020 and the grant awarded in October 2022.

The BRIC grant application team included Community Development, Public Works, and Facilities, within Tigard, and our external partners PGE, Energy Trust of Oregon, and the PAE Engineering consultancy. PAE's scope of work is designed to test the feasibility of each Tier of the Initiative to focus implementation on microgrid development where it can be most effective. For example, Tier 1, resilient energy for EOC operations at the Library, is a whole community benefit and a typical single-builiding/owner microgrid application. The majority of contract funds will look at the feasibility of this case. Tiers 2 and 3 are more exploratory and conceptual, involving novel PV generation and multiple parties for both energy generation and energy loads for resilient operations.

PAE's feasibility contract is due to be completed this summer with follow-on engagement and funding activities leading into the fall, pending leadership review and direction.

ACTION REQUESTED

Receive project update, participate in Q&A, give staff direction.

BACKGROUND INFORMATION

Dates of Previous and Potential Future Considerations
This is the first Council briefing on the Tigard Resiliency Initiative. After completion of the PAE feasibility analysis and review by the Infrastructure and Investment Committee, further action would require Council consideration in the near term.

Public Involvement
Targeted applicable property owner outreach with the results of the PAE Feasibility Study; depending on resulting actions, wider community education and participation.

Impacts (Community, Budget, Policies and Plans/Strategic Connection)
TBD, based on results of the PAE feasibility analysis and the potential for grant and partner funding. Potential to implement climate action and resiliency goals in support of Emergency Operations, Comprehensive, and Strategic Plans.

ALTERNATIVES & RECOMMENDATION

ADDITIONAL RESOURCES

Attachments

Tigard Resiliency Initiative

PAE Tier 1 Feasibility

Tigard Resiliency Presentation

CITY OF TIGARD RESILIENCY INITIATIVE

REVISED NOVEMBER 16, 2020

The Tigard Resiliency Initiative is a three-part, tiered approach to pre-disaster energy resiliency in Tigard including: 1) installation of PV generation and battery storage to support resilient operation of the EOC as a micro grid, 2) public infrastructure and private development PV generation and battery storage for resilient publicly accessible energy and services through a microgrid, and 3) district-scale renewable energy generation and storage through a microgrid for resiliency, climate benefits, and economic development.

Tier 1: Emergency Operations Center Renewable Energy Microgrid

Currently, Tigard's EOC electric power is backed up with a propane generator, which is subject to limited resupply in the event of a Cascadia earthquake event. To improve the EOC's resiliency, the City proposes to install solar PV generation and battery storage at the EOC site for operation as a micro grid. The proposed project addresses critical energy infrastructure vulnerability supporting whole-community resilience.

Tier 2: Public Infrastructure and Fields Property Renewable Energy Microgrid

The proposed renewable energy generation and storage microgrid involves the innovative use and design of public infrastructure (pedestrian bridge, water quality facilities, and street rights-of-way) and the cooperation of private development partners including regulated affordable housing providers and commercial and industrial developers. The project would be designed to serve essential city services and functions such as public realm lighting and mechanical systems, communication devices and EV charging, and emergency shelter to further benefit the public in case of catastrophic failure of the energy grid. The proposed project anticipates impacts on vulnerable populations, equitable risk-reduction outcomes, and whole-community approaches to disaster resilience. The proposed project is collaborative and promotes shared responsibility and partnerships. The project would be a major educational opportunity in the heart of Tigard and serve to pilot the community's transition to a renewable energy future.

Tier 3: Hunziker Core District Renewable and Distributed Energy Microgrid

The Hunziker Core is centrally located between Tigard's urbanizing mixed-use Downtown and Triangle Districts and is characterized by an underdeveloped industrial land base. With Tigard's current Employment Lands Tomorrow Code Update Project, the Hunziker Core District will see increasing employment density and a wider mix of uses allowed to support economic development. The district energy concept would underwrite this effort with lower cost energy through coordinated resilient renewable and distributed energy generation and storage facilities through a microgrid. Renewable energy facilities at the district scale could have significant climate change benefits by avoiding fossil fuel emissions from building heating, cooling, and lighting and in support of EV charging. The proposed project is collaborative and promotes shared responsibility and partnerships.

Tigard Microgrid

Tier 1 – Library PV and Battery Microgrid Feasibility Study

June 9, 2023

pae-engineers.com

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June 9, 2023

Project Directory

Owner	**City of Tigard**
Electrical Engineer	**PAE** 151 SW 1st Avenue Suite 300 Portland, Oregon 97204 **Matt Jones, PE, LEED, AP** Principal-in-Charge matt.jones@pae-engineers.com **Karina Hershberg, PE, LEED AP** Project Manager karina.hershgberg@pae-engineers.com **Craig Collins, PE** Electrical Engineer of Record craig.collins@pae-engineers.com **Anthony Hosti** Electrical Engineer anthony.hosti@pae-engineers.com **Matt Hyder, WELL AP, LEED GA** ReGen Building Energy Modeling Lead matt.hyder@pae-engineers.com **Carley Webster, CDT** Assistant Project Manager carley.webster@pae-engineers.com

1.0 Project Description

1.1 Overview

The information presented in this narrative report is associated with Tier 1 of the Tigard FEMA Microgrid Study which is a three-part study evaluating microgrid solutions to leverage distributed energy resources (DER) including photovoltaics (PV) and battery energy storage systems (BESS) and existing fossil-fuel based generation capacity for facility and community resiliency in the city of Tigard, Oregon.

The engineering assessments, reports and preliminary design drawings prepared by PAE for the Tier 1 FEMA scope evaluate a single building microgrid resiliency solution for the Tigard Library.

The intent of this narrative deliverable and associated preliminary design documents is to facilitate ETO Trade Ally pricing and for use by City of Tigard in pursuit of project implementation funding. Permit documents are a separate scope of work.

1.2 Executive Summary

PAE determined the following distributed energy resources (DERs) were required to support the City's operational and carbon reduction requirements associated with construction of an island capable microgrid control system at the Tigard Library.

1. Photovoltaic Capacity
    a. Rooftop: 250 kW
    b. (5) Carports: 260kW
    c. Annual Energy production from PV: 582,100 kWh
        1) Annual energy from onsite PV will be able to supply 55% of building energy consumption (electricity and natural gas equivalency in kWh) based on energy model results following Chiller Plant Upgrade.
2. BESS Capacity
    a. Battery Inverter Power: 1,000 kW
    b. Battery Energy Storage Capacity: 2,700 kWh
3. Generator Capacity
    a. 500 kW
    b. Existing, Natural Gas Fired
4. Microgrid Control System
    a. Open transition following grid failure.
    b. Close transition following grid restoration.
    c. Cycle charging dispatch strategy while islanded.

1.3 Codes and Standards

The following codes, guidelines, regulations and other references that were considered in the design of the microgrid system and associated components. The list below is provided for reference only and is not a guarantee of Code compliance.

- 2020 Oregon Electrical Code
- 2022 Oregon Fire Code
- National Fire Protection Association (NFPA) Standards
- American National Standards Institute (ANSI)
- Institute of Electrical and Electronics Engineers (IEEE)
- National Electrical Manufactures Association (NEMA)
- Underwriters Laboratories (UL)

1.4 Owner Specific Requirements

PAE was asked to consider the deployment of a single building microgrid at the Tigard Library, which is an existing facility at 13500 SW Hall Blvd. The list of owner requirements was as follows:

1. Microgrid to support full building load for standard to major outage durations with the intent to operate the library as a warming or cooling center during daylight hours. For catastrophic outages, the intent is to support a sub-set of facility loads to operate as a backup Emergency Operations Center. For additional information on the defined outage durations, see Section 2.5 below.
2. PAE's microgrid design needs to consider infrastructure and energy use impacts of the upcoming Chiller Plant Upgrade scope of work, which is currently underway.
3. Utilization of a 500 kW natural gas generator that is slated to be installed as part of, or subsequent to, the Chiller Plant Upgrade but prior to the FEMA Tier 1 microgrid project construction scope.
4. The existing gas-fired boilers at the library should be assumed to remain through the microgrid project construction scope.
5. Microgrid scope should include development of renewable energy production on site via deployment of photovoltaics. Development of renewable energy at Tigard Library supports the City's goal to be carbon neutral by 2050.
6. The open space on the north side of the Library is to be reserved for development of new covered storage facilities and space for battery energy storage system (BESS) deployment and should not be evaluated for photovoltaic system siting.
7. BESS design should be developed in cooperation with Portland General Electric (local Utility) to leverage the utility's "Schedule 200" battery incentive program which will allows the utility to control the BESS for grid support during on-grid operation.
8. Any current or future electric vehicle charging should not be considered in Net Zero Energy calculations. The existing two electric vehicle chargers should be supported under full load microgrid operation of the library microgrid. No new electric vehicle infrastructure is to be included in the microgrid development scope.

2.0 Energy Performance Analysis

2.1 Introduction

The Tigard Microgrid project analysis for FEMA Tier 1 is to explore the implementation of a Battery Energy Storage System (BESS) and Solar PV array for both the purpose of peak load shedding and a resilience scenario in which the library is used as an Emergency Operations Center (EOC). A calibrated energy model was developed to analyze the hourly trends of the current library for this analysis. This section describes the energy modeling approach and inputs used for the analysis.

Electricity demand data at 15 minute intervals for the meter at the library was received from PGE. This data was used to create a calibrated model that matches the hourly profile and demand as closely as possible. This calibrated model used the inputs seen throughout this section. The exception is that the calibrated model uses existing conditions at the time of the PGE meter data which includes packaged DX units for cooling. It is currently planned that these units, which are at end of life, are to be replaced with a new air cooled chiller within the next year. Because of this, all analysis shown throughout this report represent the energy and loads potential with the new air cooled chiller and added AHU-4 for the entrance lobby.

The following scenarios were simulated as a part of this analysis:

Table 1: Modeled Scenarios

Scenario	Model parameter
Normal operations	Library operations running typical hours and loads. Model calibrated based on PGE electric meter data. Existing Packaged DX cooling replaced with planned Air-cooled chiller design that is anticipated for installation in the coming year.
Emergency Operations Center (EOC)	Library operations running 24/7 in EOC spaces only, all other spaces considered shut down and not open to the public. EOC spaces include community space, adjacent restrooms and pantry, and entrance lobby space. Equipment loads and occupancy densities updated to reflect changing operations during an EOC scenario. Existing Packaged DX cooling replaced with planned Air-cooled chiller design that is anticipated for installation in the coming year.

The shaded areas in green in the image below shows the areas operational during an EOC scenario. All other areas outside of the EOC area are assumed to be in use only during normal operations scenarios. Additional detail can be found in the Building Use section below.



Figure 1: Emergency Operations Center (EOC) Analysis Zones

2.2 Model Inputs

SOFTWARE

The building energy analysis is performed using the version 2022.1 of IES Virtual Environment energy modeling software.

WEATHER DATA

The project is part of climate zone 4c and the weather file used for the analysis is selected as the Portland-Hillsboro Airport TMYx 2007-2021 weather file, which is the closest available location to the project site in Tigard.

The climate summary for the Tigard Library based on the Portland-Hillsboro Airport TMYx 2007-2021 weather file is shown in the following table and charts.

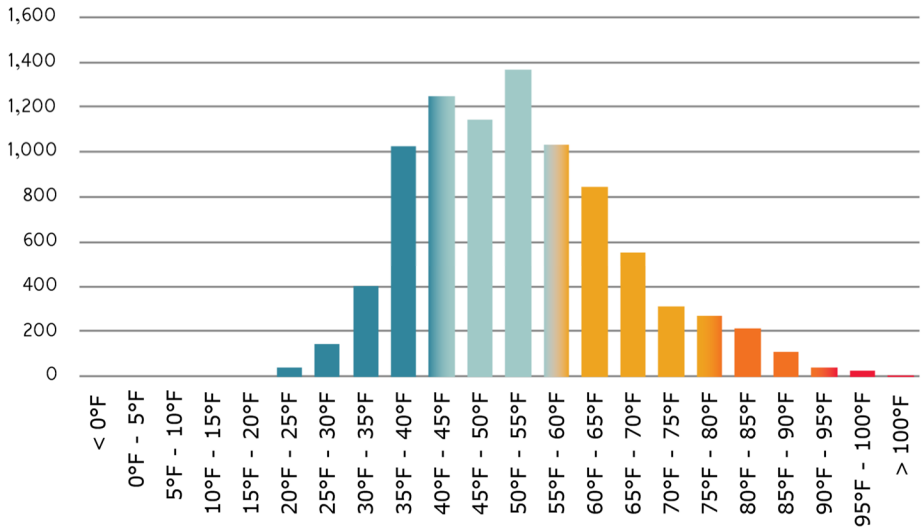


Figure 2: Temperature Distribution, Hours Per Year

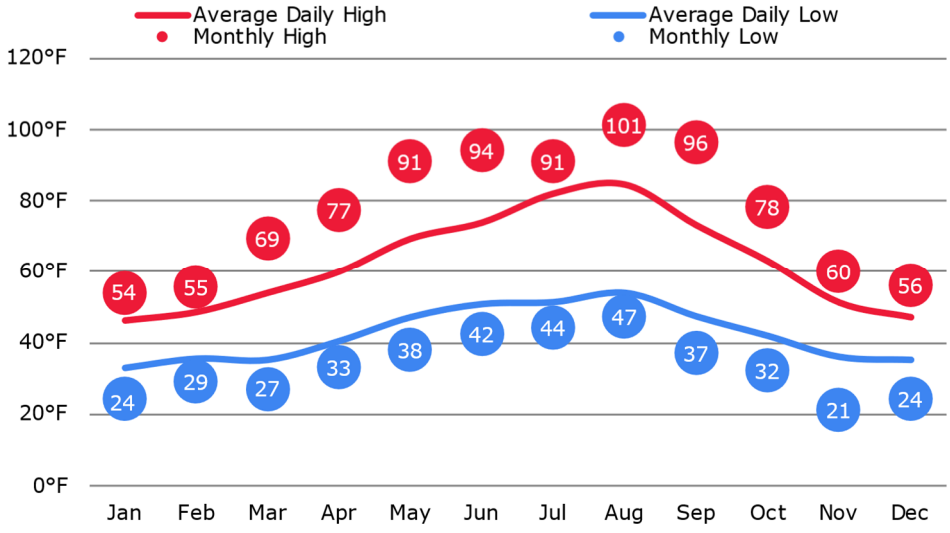


Figure 3: Average Monthly Temperatures with Maximum and Minimum (°F)

BUILDING ENVELOPE

The figures below show the 3D energy model geometry which was based on the As-Built design drawings dated May 19th, 2003 for the existing building.

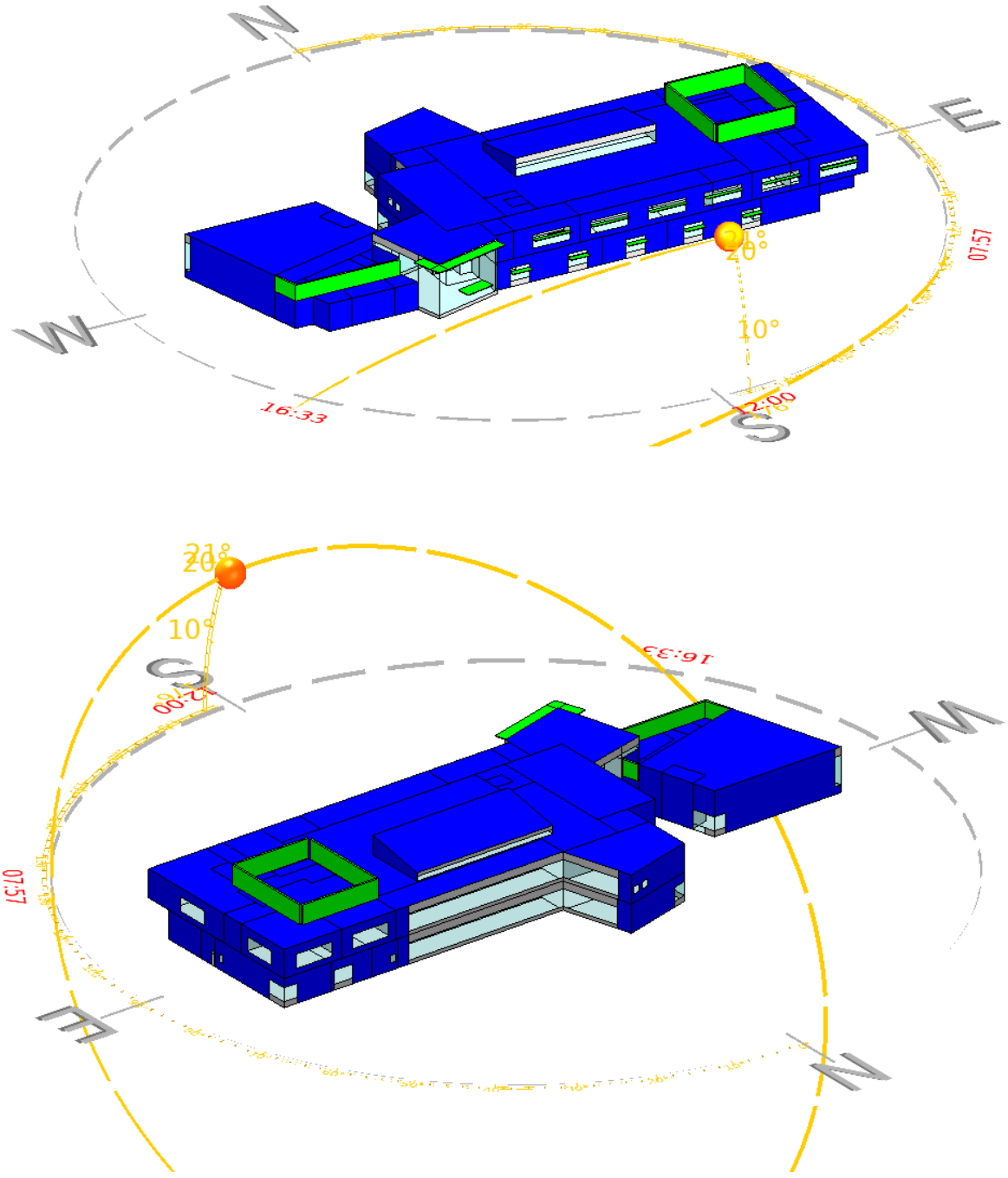


Figure 4: IES Model Renderings (Sun Position: June 30th at 3 pm)

The following table summarize the envelope performance criteria used in the energy model. Any constructions that could not be verified were assumed to meet the ASHRAE 90.1-1999 energy code that was in effect at the time of design and construction of this project.

Table 2: Envelope Performance

Building Assembly	Parameter	Proposed Design
Roofs	Type 1 - Typical roof	2" concrete deck with insulation above
	Insulation	R-15 continuous insulation[1]
	Assembly U-Value	U-0.063
Floors	Type 1 – Ground floor	Concrete slab
	Insulation	None
	Assembly F-Value	F-0.730
Walls	Wall Type	Metal framing with Batt Insulation, no c.i.
	Insulation	R-13 between frame members
	Assembly U-Value	U-0.124
	Wall Type	Metal frame with thermal break, backpan insulation
	Insulation	R-10 backpan
	Assembly U-Value	U-0.23
Vertical Glazing (Including Glazed Doors)	Window to Wall Ratio	26.2%
	Double Pane, metal framing, clear	Metal frame with thermal break, double pane glass, Per ASHRAE 90.1-1999
	Assembly U-value	U-0.57
	Assembly SHGC	0.39 SHGC
	VLT	66% VLT

INTERNAL GAINS

The tables in this section summarize the inputs used for internal gains.

Lighting

Lighting power for the project are unknown. LPD values are based on requirements in ASHRAE 90.1-1999 which would reflect typical fluorescent lighting design but reduced to match typical lighting power use of a similar building type and calibrate to PGE utility meter data.

The following table summarizes the lighting power densities used in the energy model.

Table 3: Lighting Power Densities

Space Type	Floor Area (sf)	ASHRAE 90.1-1999 (W/sf) [1]	Proposed Design (W/sf)
Conference, meeting	4,776	1.50	1.05
Corridor, transition	3,513	0.70	0.49
Electrical room	1,071	1.30	0.91
Food preparation	183	2.20	1.54
Library – reading area	5,988	1.80	1.26
Library - stacks	19,849	1.90	1.33
Office - Open	4,511	1.30	0.91
Office – Enclosed	1,615	1.50	1.05
Restrooms	2,059	1.00	0.70
Stairs	610	0.90	0.63
Storage	1,675	0.70	0.49
TOTAL	**47,320**	**1.58**	**1.10**

Notes:
1. ASHRAE-90.1 values are shown for reference only.

Receptacles and People Gain

The following table summarizes the equipment and occupancy related inputs used in the energy model. The first table represents the building under normal operations. The second table represents the building under an EOC (Emergency Operations Center) scenario. During this scenario, it is assumed it will be occupied 24/7 and have different occupancy and equipment density gains.

Table 4: Receptacle and Occupant Gains for Normal Operations

Space Type	Receptacle Load Density (W/sf)	Receptacle Load Diversity Factor	Occupant Density (sf/pers)	Occupant Diversity Factor
Conference, meeting	1.0	60%	50	60%
Community room	1.0	60%	50	30%
Corridor, transition	0.2	100%	-	-

Space Type	Receptacle Load Density (W/sf)	Receptacle Load Diversity Factor	Occupant Density (sf/pers)	Occupant Diversity Factor
Electrical room (IDF)	15 (4,000 W each)	70%	-	-
Food preparation	1.5	100%	100	100%
Library – reading area	1.5	100%	200	40%
Library - stacks	1.5	100%	200	40%
Office (open)	1.5	100%	200	80%
Office (enclosed)	1.0	100%	200	80%
Restrooms	0.5	100%	-	-
Stairs	-	-	-	-
Storage	-	-	-	-

The following table summarizes the equipment and occupancy related inputs used in the energy model during an EOC scenario.

Table 5: Receptacle and Occupant Gains for EOC

Space Type	Receptacle Load Density (W/sf)	Receptacle Load Diversity Factor	Occupant Density (sf/pers)	Occupant Diversity Factor
Conference, meeting	-	-	-	-
Community room	4.2	61%	50	50%
Corridor, transition (within EOC area)	0.2	100%	-	-
Electrical room on 1st floor (IDF)	15 (4,000 W)	70%	-	-
Food preparation (pantry)	33.2	41%	100	100%
Library – reading area	-	-	-	-
Library - stacks	-	-	-	-
Office (open)	-	-	-	-
Office (enclosed)	-	-	-	-
Restrooms	0.5	100%	-	-
Stairs	-	-	-	-
Storage	-	-	-	-

HVAC AND DHW SYSTEMS

The table below describes the building systems modeled in the proposed and in the ASHRAE baseline models.

Table 6: HVAC Airside Systems

Space Type	Proposed Design
HVAC System	VAV AHU units served by hydronic cooling and VAV boxes with reheat.
Fan Efficiency	Supply Fan: 0.93-1.00 W/cfm Return Fan: 0.23-0.40 W/cfm
VAV box minimum turndown	30%
AHU supply air temperature	55°F - 70°F
Heat recovery	None

Table 7: HVAC Waterside Systems

Space Type	Proposed Design
HHW equipment	(2) natural gas condensing boilers
HHW loop temperatures	Supply: 140°F, no reset Return: 40°F delta T
Heating efficiency	ASHPs: 2.35 COP @30°F
HHW pumps	Primary: 5.8 W/gpm Secondary: 18.46 W/gpm
CHW equipment	(1) 365 ton air-cooled scroll chiller
Cooling Efficiency	ACC: 3.02 COP (10.3 EER) @ 95°F OAT
CHW temperatures	Supply: 44°F, no reset Return: 12°F delta T
CHW pumps	Primary: 19.08 W/gpm
CW equipment	No cooling tower
CT fan power	-
CW temperatures	-
CW pumps	-

Table 8: DHW Systems

Space Type	Proposed Design
Domestic Hot Water System	Electric water heater storage tanks: 99% efficiency

2.3 Building Use and Operation

BUILDING USE DURING NORMAL OPERATIONS

The typical building use during normal operations has been simulated as a library space. Load profiles for equipment, lighting, and occupancy meet typical use and diversity of a library space use.

The hours of operation for the Tigard library are seen in the following list. The HVAC systems and electric load profiles are set to meet these hours throughout the year, minus holidays. Note that load profiles extend outside of these hours for employees that are in the building before opening and after closing.

— Monday – Thursday: 10:00 AM to 8:00 PM

— Friday – Sunday: 10:00 AM to 6:00 PM

The following figures show the typical daily profiles for the library used in the energy model during normal operations.

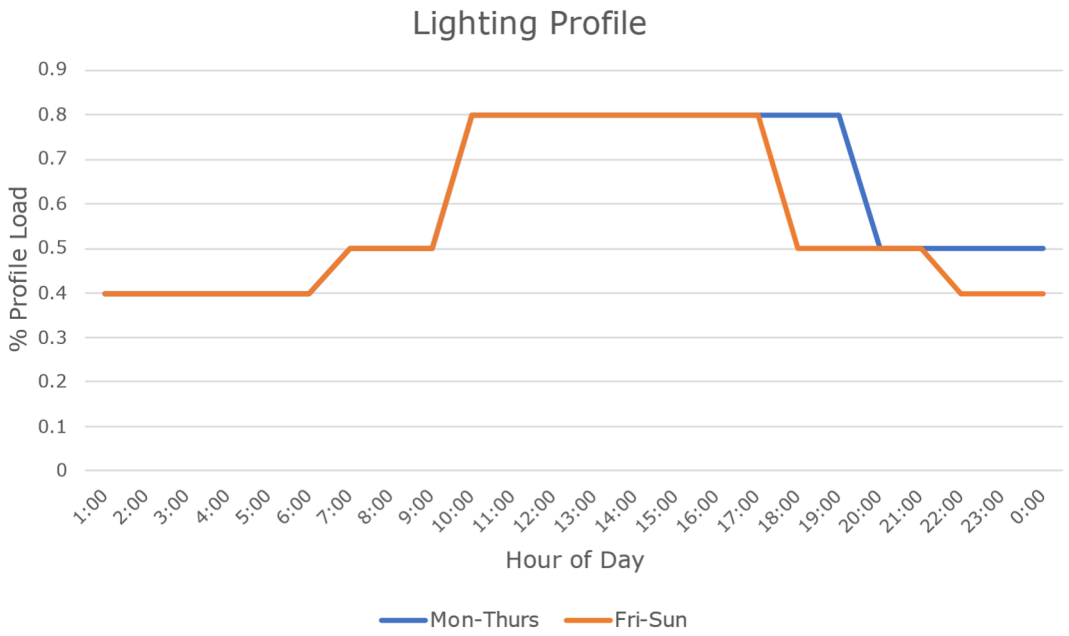


Figure 5: Lighting Load Profile

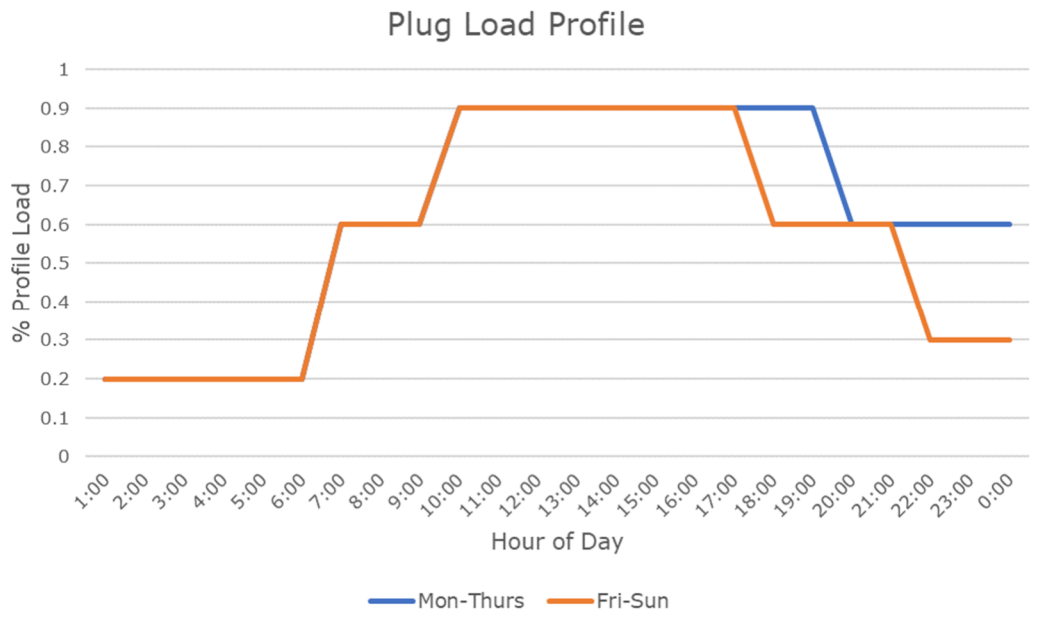


Figure 6: Plug Load Profile

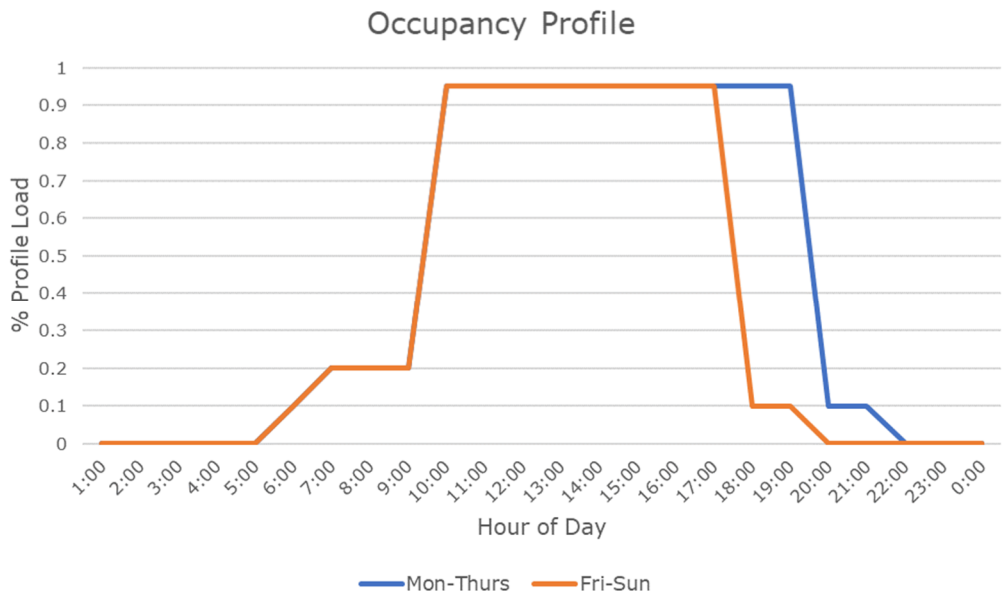


Figure 7: Occupancy Load Profile

BUILDING USE DURING EOC OPERATIONS

During an EOC event, the energy model operations and load profiles will differ significantly. Library operations are set to run 24/7 in EOC spaces only, all other spaces considered shut down and not open to the public. EOC spaces include community space, adjacent restrooms and pantry, entrance lobby space, and 1st floor IDF room. Equipment loads and occupancy densities updated to reflect changing operations during an EOC scenario.

The current design of the library shows that the 1st floor IDF room is served by a terminal unit connected to AHU-1. This IDF room would need to be operational during an EOC scenario. Therefore, it is recommended for resiliency to add a single zone mini-split system or similar to this space to both eliminate the need to operate AHU-1 during an emergency event and to reduce energy during normal operations. All EOC model simulations include that the 1st floor IDF has been decoupled from AHU-1 with a mini-split heat pump for independent cooling.

The following table details the equipment to be needed during an EOC scenario separated by Community Space equipment and cooking equipment for the pantry.

Table 9: Community Room Equipment for EOC Scenario

Equipment for Community Room	Quantity	Amps	Volts	Modeled Watts Each (W) [1]	Modeled Watts Total (W) [1]
VHF Radios with Chargers	40	1.5	120	20	800
800 MHz Radios with Chargers	40	1.5	120	20	800
Cell Phone Chargers	75	3	120	20	1,500
Chromebook/ Laptops	40	2	120	240	9,600
TV Monitors	4	1	120	120	480

Notes:

1. Watts for energy model include peak power use. Diversity added as not all equipment will be operational or charging at the same time or will be at 100% of load during operations.

Table 10: Pantry and Cooking Equipment for EOC Scenario

Equipment for Pantry	Quantity	Amps	Volts	Modeled Watts Each (W) [1]	Modeled Watts Total (W) [1]
Refrigerator	1	15	120	1,800	1,800
Microwave	1	6.5	120	780	780
Dishwasher	1	10	120	1,200	1,200
Coffee Maker	2	8	120	960	1,920

Notes:

1. Watts for energy model include peak power use. Diversity added as not all equipment will be operational or charging at the same time or will be at 100% of load during operations.

2.4 Annual Building Energy Demand

To analyze the library energy use and demand, historic PGE meter data at 15 minute intervals for the 2022 calendar year was received for the library building. The following chart shows the annual demand for the 2022 calendar year.

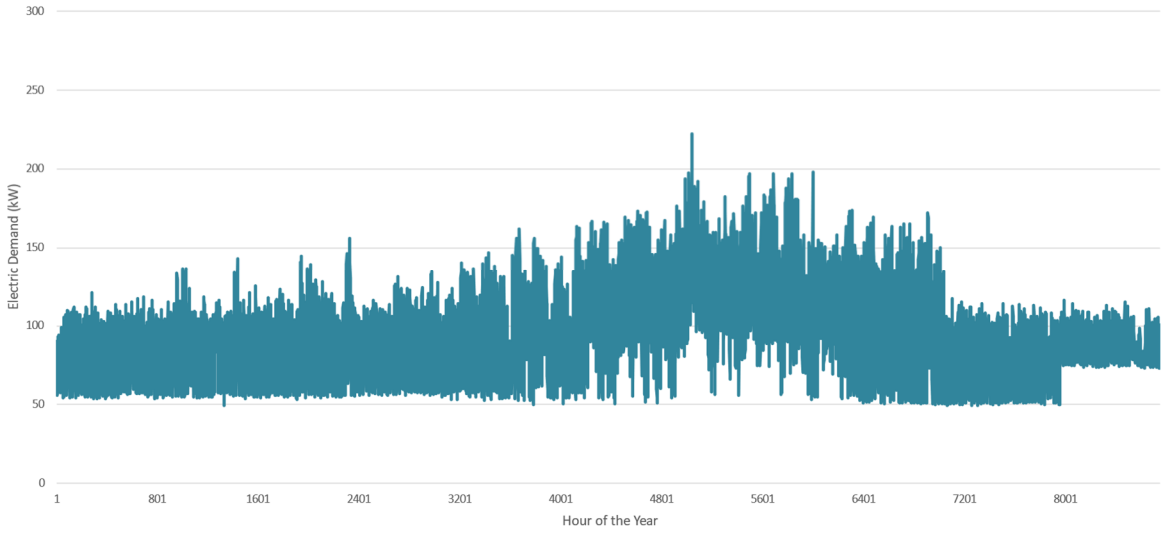


Figure 8: Annual Hourly Electric Load Profile

As can be seen from the chart above, electricity use is higher in the summer for building cooling use. Heating for the library uses natural gas fired boilers which keeps electricity in winter months lower. Gas use for the project is based on typical CBECS (Commercial Building Energy Consumption Survey) benchmarking data for a library building type, however, gas is not used as a part of the resiliency analysis.

The table below shows the annual electricity use for the historic PGE data for 2022 calendar year.

Table 11: Annual Energy Use

Fuel Source	Energy Usage	EUI [1] (kBtu/sf/yr)
Electricity (kWh)	823,529	58.9
Natural Gas (kWh)	300,400	21.7
Total (kWh)	**1,123,929**	**80.6**

Notes:
1. EUI based on a modeled square footage of 47,320

The calibrated model energy use was compared to PGE data both for hourly profiles and daily electricity use trends. The chart below shows the model electricity as compared to the PGE data. Note that the model includes the future chiller upgrade while the PGE data will not yet reflect this change.

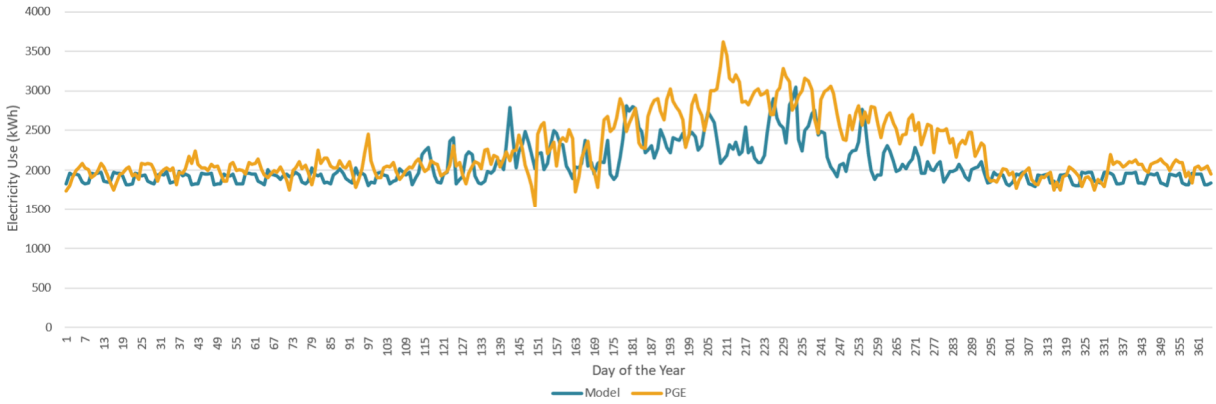


Figure 9: Annual Daily Electric Load Profile – Model to Meter Comparison

The total electricity meter data received does not show what end uses the energy was used for such as lighting, equipment, cooling, etc. Because of this, CBECS benchmarking data was used to calibrate the model for an approximate distribution of energy based on the library building use and type. Using the CBECS benchmarking data, the expected energy use breakdown and EUI from the energy model is shown in the figure below.

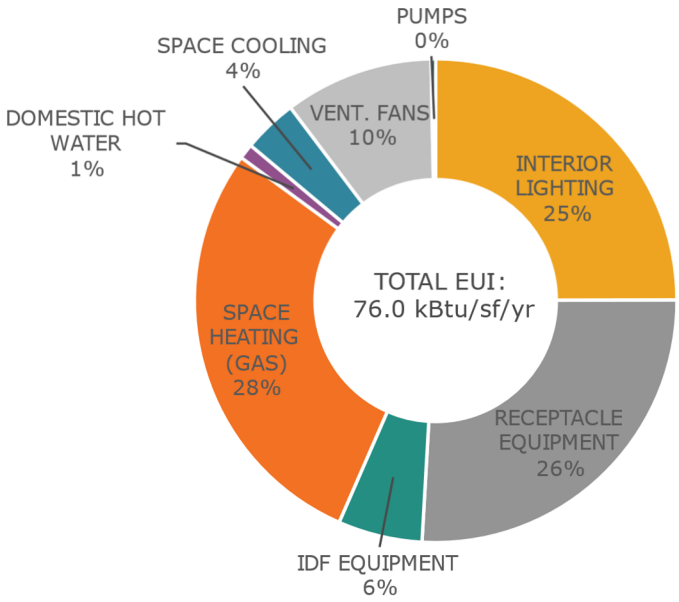


Figure 10: Modeled Energy End Use Breakdown

Table 12: Energy Use Intensity Breakdown, in kBtu/sf/yr

	Calibrated Model
Receptacle equipment	19.7
Interior lighting	19.0
Space heating (Gas)	21.7
Space cooling	2.8
Pumps & aux.	0.2
Vent. Fans	7.6
Domestic hot water	0.8
IDF elec.	4.3
EUI	**76.0**

2.5 Microgrid Resiliency Analysis

As part of the design of the microgrid for the Tigard Library, PAE conducted a thorough analysis of the best and most feasible approach to creating a microgrid at the Tigard library. Analysis focused on three levels of outage: standard, major, and catastrophic. The distinction between each outage type being the length of the outage. A standard outage we defined as a single day outage, a major outage we defined as up to 7 days and a catastrophic outage we defined as 2 weeks or more. The goal of the analysis being to understand how the overall system would perform in the absence of grid power.

PAE took a two-fold approach in our analysis of the design options for the Tigard Library Microgrid. First, we explored a range of options for photovoltaic (PV) array integration at the library using Helioscope. We explored several rooftop PV design options and the use of ground-mount carports for additional PV capacity at the project site. After we had a thorough understanding of the PV options available on the site, we then turned to battery sizing.

PAE used two primary tools to conduct our analysis of the battery size including a proprietary "Resiliency Tool" created by the engineers at PAE and we employed Homer Grid to analyze the economic feasibility of the different options we explored. PAE's proprietary tool focuses on the electrical system itself and helps determine the appropriate battery size to serve a facility electrical load without addressing any economic constraints. Once we had selected a range of battery sizes using the PAE resiliency tool, we then ran the analysis in HOMER Grid to determine the economics of each choice. HOMER Grid also allowed PAE to import the results of the analysis in Helioscope so that the entirety of the microgrid design PAE created could be analyzed together.

In addition, HOMER Grid allows the creation of complex electrical pricing schedules as part of its analysis framework. PAE, in partnership with the PGE, recreated the utility rate schedules impacting the cost of grid energy at the library as part of PAE's economic analysis.

PAE completed two reports for the City of Tigard. The PV Analysis Report can be found in Appendix A. The Battery Energy Storage System (BESS) Analysis Report can be found in Appendix B. Together, these two reports were utilized to determine the best and most economically feasible approach to creating a microgrid at the Tigard Library.

SolarEdge PV inverters and Canadian Solar PV panels are the basis of design for the PV arrays proposed. And the battery based microgrid solutions from ELM Microgrid are the basis of design for the microgrid controller and battery energy storage system. For full details see the reports in the appendix.

The last piece of analysis in the microgrid design focused on how the library electrical loads could be managed in the case of the three outage cases explored. PAE worked with city staff to determine which control systems could be integrated into the microgrid controller and which could not. The final control solution for building load management during a grid outage will incorporate limited automation between the microgrid controller and the facility Building Automation and lighting control systems but will be dependent on manual load shedding by City Staff to achieve resiliency for the major or catastrophic outage conditions. See Section 3.3 below for additional information.

3.0 Electrical

3.1 Electrical Service & Distribution

The facility receives power from PGE through an underground utility feeder via an 800 amp 480Y/277V, 3PH, 4W service. The existing secondary service lateral routes to the main switchboard MDP-A, which serves a secondary main switchboard, MDP-B, on the second floor of the building. MDP-B then serves all branch circuit load panels in the building. MDP-B also currently serves 2 ATS switches designed to operate the generator in the case of emergency. The building is equipped with a 50kW backup generator.

The city is currently undertaking a generator upgrade project to replace the existing 50 kW natural gas genset with a 500 kW natural gas genset. PAE's microgrid design includes the upsized 500 kW generator which will continue to serve as an emergency power source but will also be enabled for full load building backup as a microgrid controlled asset.

The microgrid scope of work includes a new main service switchboard (4RDP-0) and will intercept the existing utility service lateral into the building and serve as a point of common coupling (PCC) for all distributed energy resources (DERs). The 4RDP-0 board will house the microgrid interconnect device controllable circuit breaker to establish the island mode operation of the local electrical power system in the event of a grid outage. The existing MDP-A and MDP-B switchboards will be re-fed and remain in service.

The 4RDP-0 switchboard will be rated for 2000-amp service to support the code compliant interconnection of the on-site DERs and to provide full export capacity of the BESS power to PGE for grid stabilization and support services as required for Schedule 200 program participation. PGE will perform an analysis to determine if replacement of the main service transformer is required if the project moves forward with construction and utility service reconfiguration.

The complete schematic design for the library power system configured for microgrid operation can be seen in the single line diagrams (SLDs) in Appendix C. SLDs include the necessary demolition of existing power system components as well as the new system components and wiring to be installed.

Refer to Appendix D for Microgrid Site Plan design drawing developed by R&W Engineers in collaboration with PAE for the Chiller Plant Upgrade scope of work.

3.2 Distributed Energy Resources (DERs)

NATURAL GAS GENERATOR

The city is in the process of upgrading the generator from a 50 kW natural gas genset to a 500 kW natural gas genset. The upsized generator will provide power to both the emergency power ATS (ATS-E) as part of the Emergency Power Supply System (EPSS) and to the new 4RDP-0 switchboard for optional standby backup of the entire facility load. The generator will be controlled by both the microgrid controller and ATS-E in a failsafe emergency situation if the microgrid control system is unavailable during a utility outage. The generator will be dispatched by the microgrid control system utilizing a "cycle-charging" dispatch strategy.

PHOTOVOLTAIC SYSTEM

The PV arrays on site will be divided into two main sub-system. The first system will be on the roof and will include 248 kW of DC nameplate capacity. The second system will consist of several carport arrays built over a significant portion of the library parking lot and will account for the other 259 kW of DC nameplate capacity for a total system size of 507 kW. The full PV system report can be found in Appendix A.

BATTERY ENERGY STORAGE SYSTEM (BESS)

The BESS will be equipped with a grid following and grid forming inverter and with power and energy ratings as determined by PAE for off grid resiliency. The battery inverter rating will be 1.0MW and coupled to a 2.7 MWh battery that will provide for full load backup for several hours in the event of a grid outage. Resiliency duration will be extended by the microgrid control system via selective utilization of PV and generator capacities with the system prioritizing PV energy when available during daylight hours. The full Microgrid Resiliency Report can be found in Appendix B.

3.3 Microgrid Control System

PAE worked with city staff to determine which parts of the library load could be integrated with the building's microgrid controller and which could not. It was determined that the buildings mechanical and HVAC equipment which is currently controlled by the BAS can be integrated into the microgrid controller. As well, the lighting control system can be integrated although the system will need to be upgraded as the current control systems are too old to be integrated with the available microgrid controllers. The rest of the library load will need to be shed manually through either turning off or unplugging equipment at the receptacle, turning off circuit breakers in the branch panels, or through changes in human behavior like not turning on extra lights or not plugging in large receptacle loads during an outage event.

The microgrid control system will be provided to manage or control the following aspects of facility operation and grid interactivity.

1. Resilient Operation:
    a. BAS - the buildings automated HVAC and mechanical equipment control system
    b. Lighting Control – integration will require a lighting control system upgrade.
    c. DER Dispatch- ensures the sum total of power from DERs equals the load needed with the goal of ensuring the highest level of renewable energy possible when in islanded mode.
2. Grid Connected Operation:
    a. PGE BESS dispatch – serves as a point of interface with PGE's GenOnSys for remote utility control of the BESS when grid connected.
    b. Grid energy cost optimization – taking advantage of available renewable energy (PV) during peak usage and peak rate windows.

It is important to note that the proposed microgrid design is an open transition microgrid which means there will be a short duration interruption of power during loss of utility power. This approach to system design is less complex and less costly than a closed transition scheme. The microgrid system is not a UPS system for the building and as such any existing UPS systems will have to be maintained to ensure that all the critical elements of the library load are not disrupted in the event of an outage.

At this time a complete in-depth control schematic and sequence of operations for construction has not been included. This level of control design will be completed in later stages of project development.

3.4 Grounding System

The new microgrid switchboard 4RDP-0 will serve as the new service entrance equipment and will be the point of neutral to ground bonding within the facility. The existing neutral to ground bonding in the existing MDP-A switchboard will be disconnected and removed.

The remainder of the facility grounding system is existing to remain as currently configured. Each electrical and telecom room currently has its own ground bar that will remain connected to the facility grounding electrode system.

3.5 Pathways and Raceways

Microgrid scope of work will include new underground conduit and associated trenching work throughout the project site including the facility parking lot to support the installation of PV carports.

New above grade conduits will be included to integrate the rooftop PV system. Conduit provisions installed in the chiller plant and generator upgrade scope of work will be leveraged for deployment of the microgrid system. PAE has coordinated with R&W engineers to ensure adequate spare conduits have been provided in prior phases of work.

Appendix A - PV Report



Tigard Library:

Preliminary PV Results

APRIL 28, 2023

PAE

pae-engineers.com

Executive Summary

This report provides the results from the preliminary PV analysis for the Tigard Public Library in Tigard, OR.

This report utilizes the as built information provided by the city as well as our own records as PAE was part of the original design team for the library. Our analysis here does not take into account the forthcoming adjustments to roof spacing that may lead to a small increase in usable PV area on the library roof.

SUMMARY OF KEY FINDINGS

- The east/west orientation for the roofs arrays resulted in the highest overall production. It is recommended that the PV contractor provide optimized options for both an east/west and fixed tilt racking solution.
- The addition of carport solar arrays can more than double the overall production on the site which would improve the resilience of this site and its use as an Emergency Operations Center and should thus be considered in this design.
- Most of the parking spots have adequate solar access.
- Sections of the proposed PV carports are impacted by the trees on site. A detailed shading evaluation is recommended to determine if the impact is too significant. Intentional tree trimming might be sufficient to address shading concerns.

Study Methodology

The initial PV analysis considered two variable categories for each roof location:

Racking

Orientation

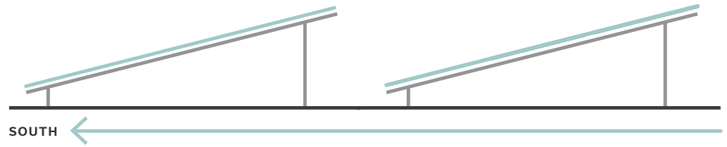
LOCATIONS

Rooftops

Parking Lot Canopies

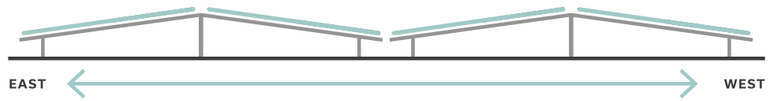
Panel Orientation

SINGLE VS. DUAL TILT RACKING



SINGLE TILT RACKING CONFIGURATION

Traditionally, PV arrays are integrated on building rooftops to face south with single tilt racking systems, which is the optimal, highest efficiency orientation.

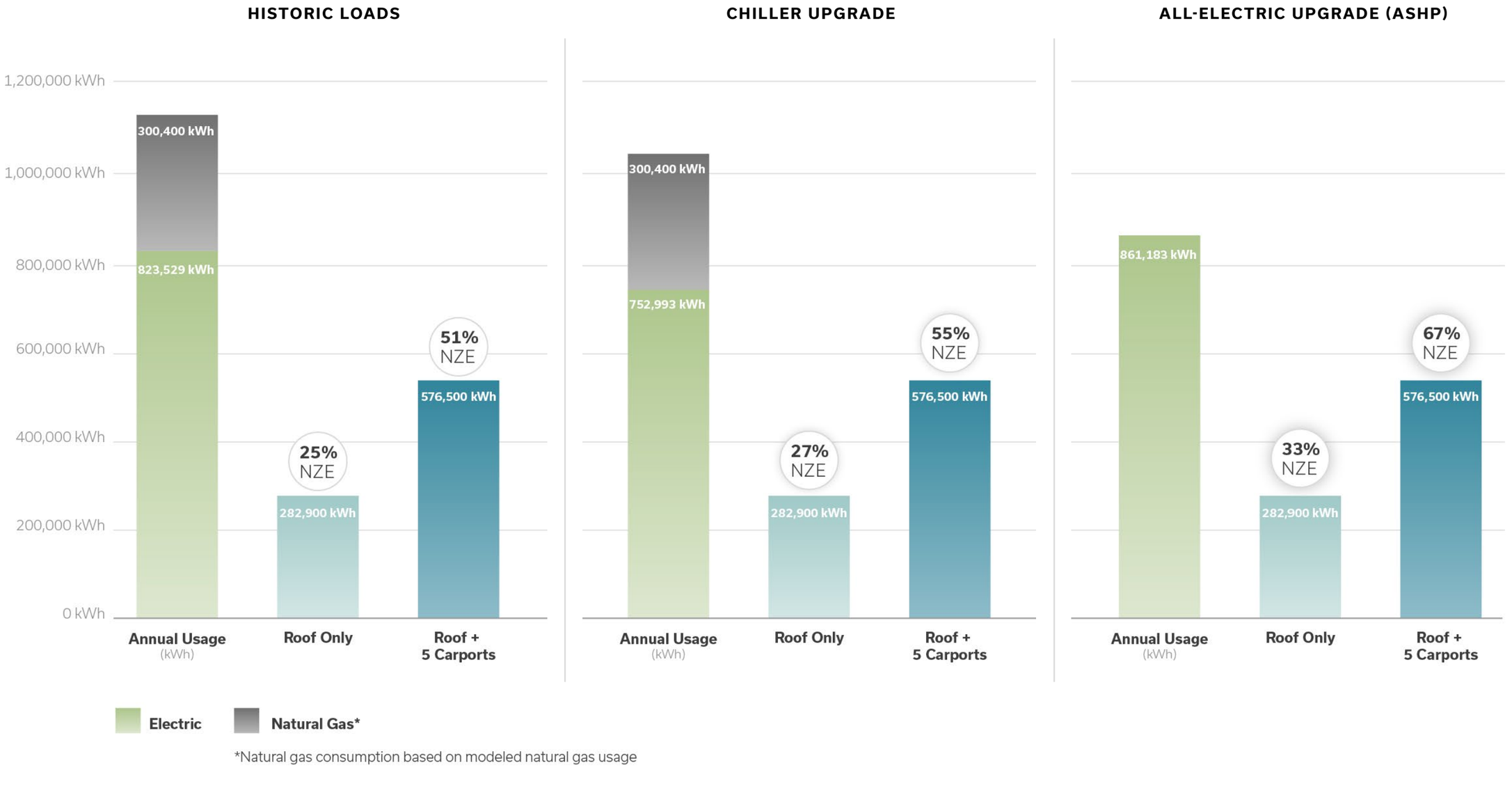


DUAL TILT RACKING CONFIGURATION

In recent years, as panel efficiency has increased and panel cost has decreased, east/west orientated arrays with dual tilt racking have gained market prominence. An east-west orientated mounting for a PV array can provide multiple benefits, even though it is technically a less optimal sun angle. The panel density of an east-west array can be increased since there are no inter-row shading setbacks. This allows for more overall panels to be installed, so although the production from each panel is reduced, total annual production is increased. This orientation also extends the production time period because it catches more morning and evening daylight.

Net Zero Energy Analysis

TIGARD LIBRARY MICROGRID NZE RESULTS



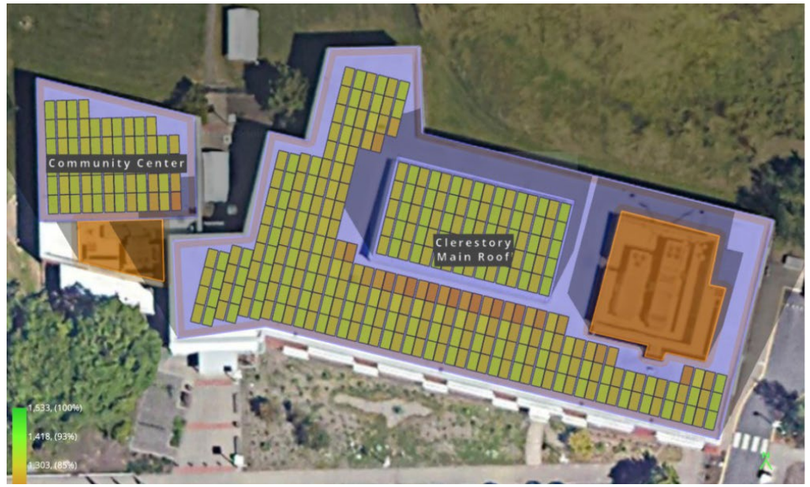
*Natural gas consumption based on modeled natural gas usage

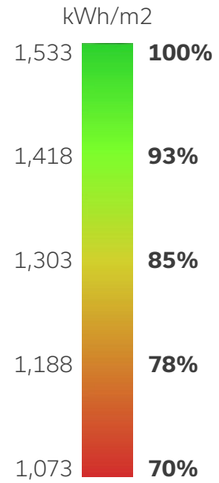
Rooftop Results

FIXED TILT (SOUTH) VS. EAST/WEST ORIENTATIONS

OPTION 1

East/West Orientation





OPTION 2

Fixed Tilt (South) Orientation



RESULTS
EAST + WEST RACKING

	kW	MWh
Main Roof	154	176
Clerestory	53	60
Community Center	41	47
TOTAL	**266**	**283**

RESULTS
FIXED TILT (SOUTH) RACKING

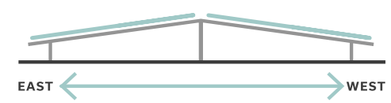
	kW	MWh
Main Roof	124	150
Clerestory	48	58
Community Center	38	46
TOTAL	**210**	**253**

MODEL SUMMARY

- Basis of design is Canadian Solar CS7N-660MB. A panel of equal or better efficiency is acceptable.
- Basis of design inverter is Solar Edge

KEY CONSIDERATIONS

- The East/West Orientation shows the best overall annual production potential for the project.
- It's likely that the panel count will decrease in the final design due to optimization for installation efficiency.
- Based on specifications provided, the new chiller will likely increase the usable area on the roof. Depending on how much space is gained there may be a small increase in the number of panels or an improvement on shading zones.



The E-W Dual Tilt Orientation has the highest simulated output.

Carport Results

MODEL SUMMARY

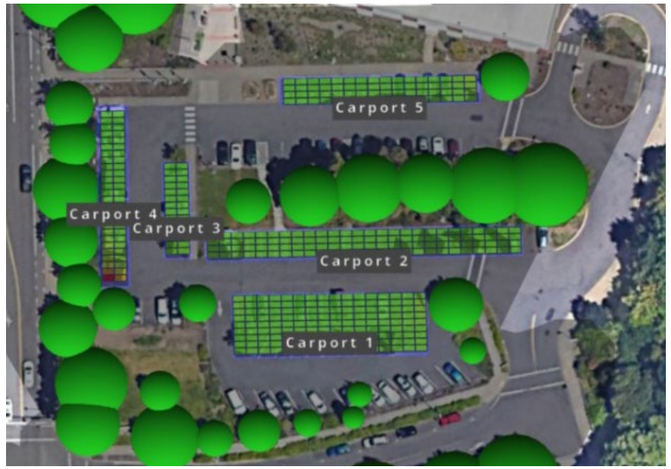
- Model is based on options by Baja Carports
- Basis of Design tilt angle is 7 degrees
- Trees were modeled at 25 feet tall.
- Additional factors such as tree species, height at maturity and exact distance between trees and canopies should be evaluated in the final studies
- Trimming strategies should be evaluated with the guidance of an arborist especially with Carport 2 and 4 as in modeling both have sections that are heavily impacted by the surrounding trees.

KEY FINDINGS

- Property is surrounded by trees. A strategic trimming plan with the guidance of an arborist should be implemented if Carports are going to be utilized to ensure maximum production during peak seasons.
- Trees on the southern most parking spaces make carports infeasible.

OPTION 1
CENTRAL PARKING AREA

- Fixed Tilt Carports
- Trees modeled at 25 ft.
- 7-degree tilt

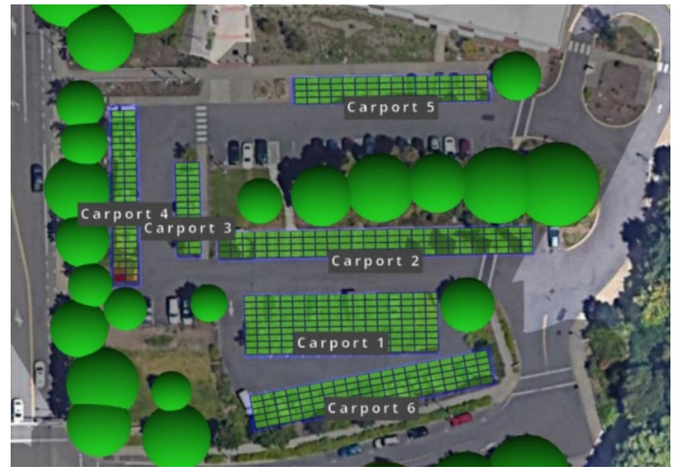


PARKING | 5 CARPORTS
7 DEGREE TILT

Without Trees	kW	MWh
Carport 1	95	110
Carport 2	69	80
Carport 3	19	22
Carport 4	34	39
Carport 5	42	49
TOTAL	**259**	**300**

OPTION 2

- Add southern most parking canopy (assumes no conflict with current existing trees)



PARKING | 6 CARPORTS
7 DEGREE TILT W/ ADDITIONAL SOUTH CANOPY

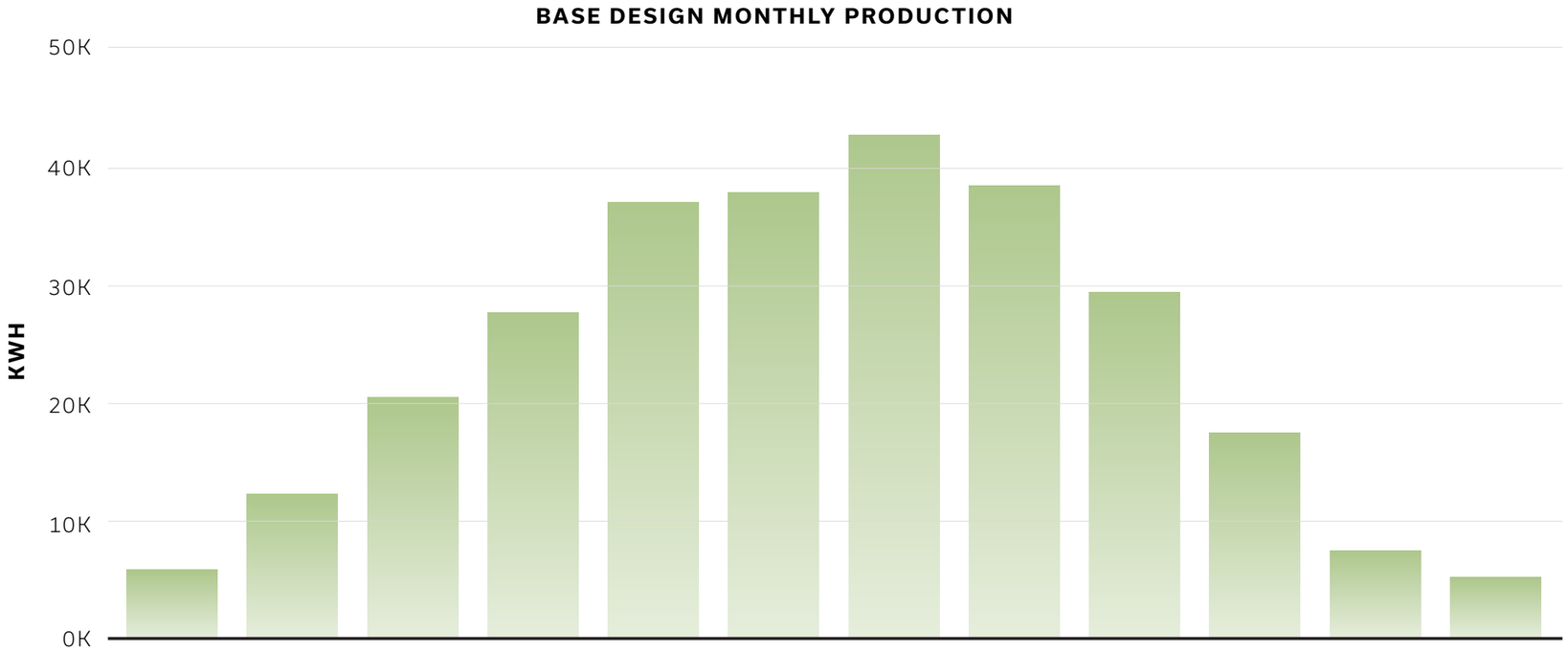
With Trees	kW	MWh
Carport 1	95	110
Carport 2	69	80
Carport 3	19	22
Carport 4	34	39
Carport 5	42	49
Carport 6	66	76
TOTAL	**325**	**376**

Results Summary

BASIS OF DESIGN

- E-W orientation for rooftop arrays
- Flushmount carports at a height of 12′
- Trees Modeled at 25′

- Panels are Canadian Solar - CS7N-660MB-AG
- Optimizers are Solar Edge - P700
- Inverters are Solar Edge - SE30KUS (3), SE40KUS (5), SE100K (2)



	ARRAY AREA	MOUNTING OPTION	KW	MWH	# OF PANELS
ROOF TOP ARRAYS	Main Roof	South	124	150	188
		East/West	**154**	**176**	**234**
	Clerestory	South	48	58	72
		East/West	**53**	**60**	**80**
	Community Center	South	38	46	57
		East/West	**41**	**47**	**62**
	Total of All Roof Top Arrays	South	210	253	317
		East/West	**266**	**283**	**376**
EXPANSION OPTIONS	5 Carports	Fixed Tilt	259	300	392
	6 Carports	**Fixed Tilt**	**325**	**376**	**492**
	Total Possible on Campus		**573**	**659**	**868**

Appendix B - Resiliency Report



Tigard Library:

Creating Resiliency

A PRELIMINARY ANALYSIS OF RESILIENCY OPTIONS FOR TIGARD LIBRARY

MAY 22, 2023

PAE

pae-engineers.com

Executive Summary

The following scenarios and systems are considered in this report.

Resources:

PHOTO-VOLTAIC PANEL ARRAY SIZE

- Roof Only: 248 kW
- Roof + 5 Carports: 509 kW

BESS SIZE

- Full Battery Support: 250kW/2700 kWh
- Reasonable Battery Support: 250 kW/1320 kWh

Load Profiles:

100% BUILDING LOAD

- All Systems
- All Systems minus Space Conditioning and Hot Water

50% BUILDING LOAD

- All Systems
- All Systems minus Space Conditioning

EOC BUILDING LOAD

Outage Types:

- Typical Outage: 24 Hours
- Major Outage: 7 Days
- Catastrophic Outage: 14+ Days

CONCLUSIONS

This study found that building a resilience strategy that depends only on PV and BESS creates challenges that will be difficult to overcome and economically limiting. While EOC operation reduces the overall load, the winter months still present a challenge.

This study concludes that a Whole Building resiliency strategy is the most economically feasible and is achievable with a reasonable BESS size coupled with generator support in the winter months.

This report also presents a brief overview of Capex vs Opex expenses for each design presented.

NEXT STEPS

- Selecting a Resiliency Strategy: Whole Building vs. EOC operation
- Selecting a PV Array Size
- Selecting a BESS Size

Report Contents

2 Executive Summary

3 What is Resiliency

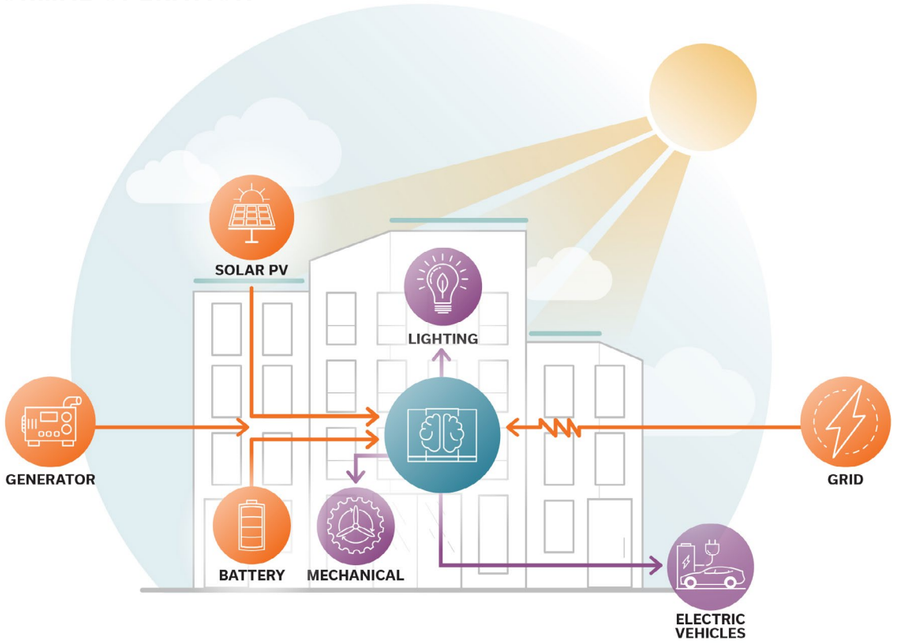
6 Resiliency Scenarios

15 Design Results

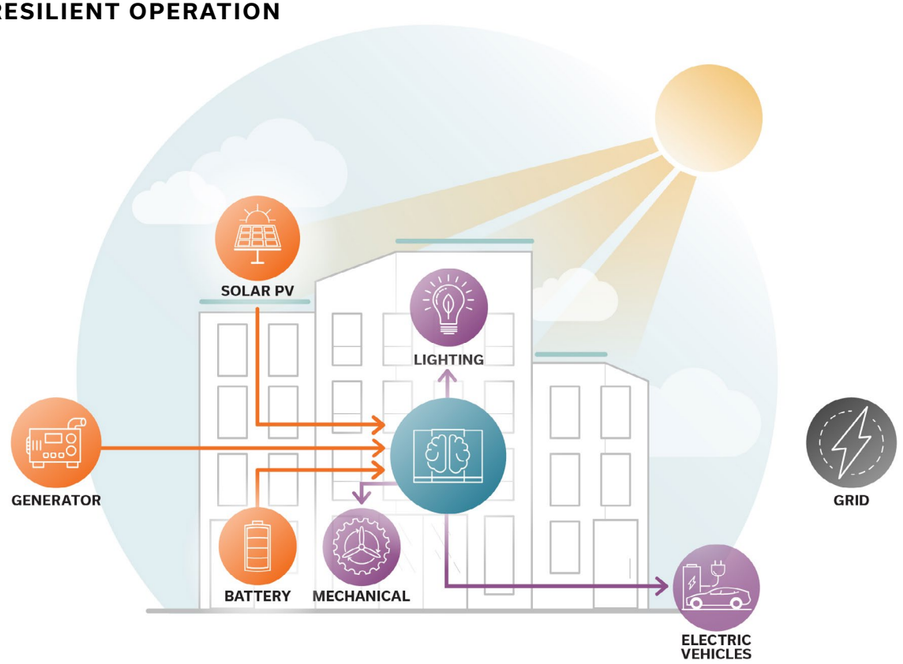
16 Preliminary Financial Results

17 Recommendations and Next Steps

NORMAL OPERATION



RESILIENT OPERATION



Developing a Framework for Energy Resilience

How have we addressed Resiliency in this study?



ROBUSTNESS

Robustness is the ability to withstand or overcome adverse conditions. In the case of resiliency it means that the system design needs to be able to withstand different levels of disaster all with the same system. In this study we explore how the proposed systems will handle a typical outage, a major outage, and a catastrophic outage.



RESOURCEFULNESS

Resourcefulness is the ability to find quick and clever ways to overcome difficulties. In terms of resiliency, it means the system design needs to be adaptable to changing conditions. As well, a system design needs to be able to address the predictable outages it may face but also be designed in such a way that when unexpected events occur, the system should be able to be adapted to that changing need. In this study we explore multiple pathways to serve the library load that show the resourcefulness of the design.



RAPID RECOVERY

Rapid recovery is the ability to quickly return to a condition of stasis after an event that breaks the status quo. In terms of resiliency, this means that the system needs to be able to respond quickly to a sudden loss of power. The system currently utilized by the Library is already designed in such a manner. The addition of PV and BESS systems to the over all resiliency strategy fills in the gaps and adds strength and breadth to the tools available to achieve the electrical needs of the library during an outage. This study did not directly address rapid recovery.



REDUNDANCY

Redundancy is the inclusion of extra components which are not strictly necessary to functioning, in order to address the possibility of failure in another system. In terms of resiliency, this means a system should be designed with fail safes. The addition of PV and BESS systems introduce redundancy to the Library resiliency strategy. The systems this study proposes can work alone or in tandem with the existing generator depending on the season and the severity of the outage. Together, the existing system and the additions proposed in this study strengthen resiliency of the Tigard Library.

WHAT IS RESILIENCY?

Resiliency is the symbiosis of the four categories laid out above. It is the ability of a designed system to respond to sudden and/or enduring loss of a primary power source. Resiliency is a multi-faceted approach to maintaining some semblance of normal operations in a time when the system's power has been interrupted. Resiliency can have many different tiers and in this study we show a variety of ways in which full or partial resiliency can be achieved in the Tigard Library using the various systems already available as well as with the addition of the systems we propose.

CONCLUSIONS

This study found that the best course of action for the city of Tigard is to maximize the size of their BESS from Day 1 for a whole building microgrid design. If the initial battery size is insufficient to support the library's overall electrical need then additional battery can always be added later. Though early versions of the design might require manual load shedding, this study has provided a series of options that will allow the Library to maximize the impact of the battery at multiple sizes according to the need created by different levels of outage event.

Mapping a Path to Resiliency

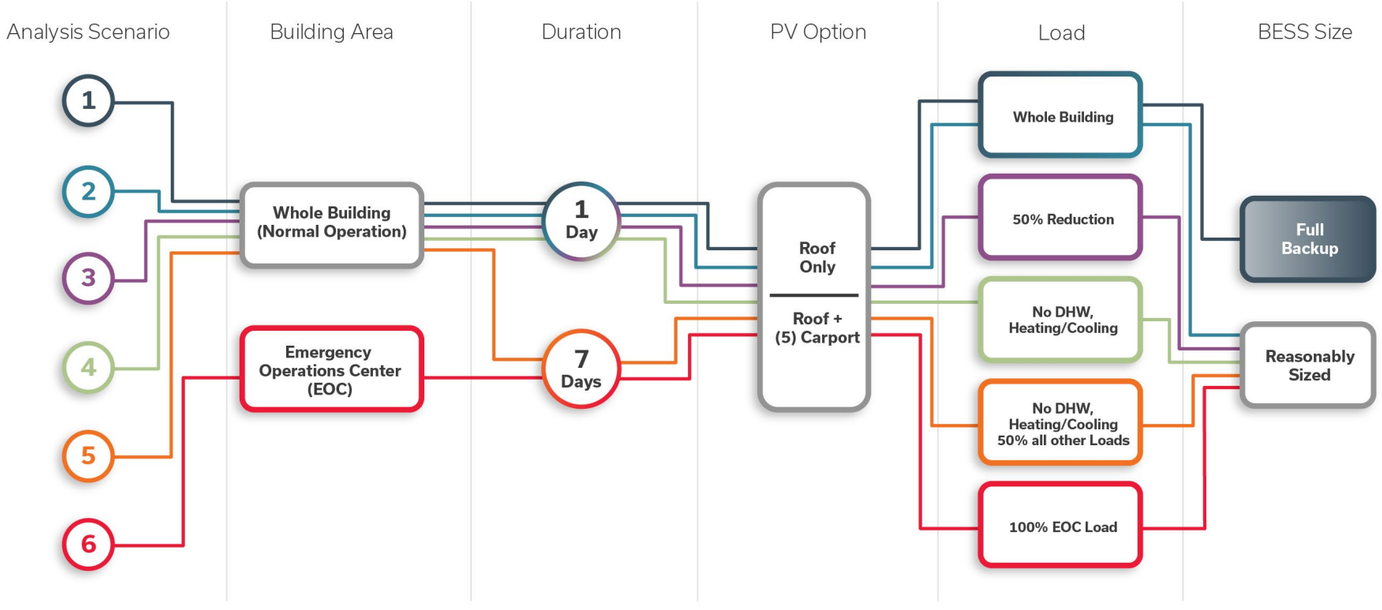
METHODOLOGY

The goal in this study was to determine the system criteria to support three different levels of outage events that the Tigard Library could experience. The analysis considered both a full building load operation mode and a reduced function emergency operation mode.

The study utilized a variety of modeling software tools including 3rd party platforms, as well as PAE-developed tools. Variables considered were:

- Building area
- Supported building load
- PV system size
- 248 kW from Roof Only
- 509 kW from Roof and (5) Carports
- Operating duration
- Battery Energy Storage System (BESS) Size
- Maximized
- Reasonably sized (250kW/1320kWh)
- Economics
- High level CapEx vs OpEx

The analysis included the following scenarios:



The results is different design paths that can meet the needs of the library at the different outage levels. However, the different solutions provide varying levels of resiliency and cost effectiveness.

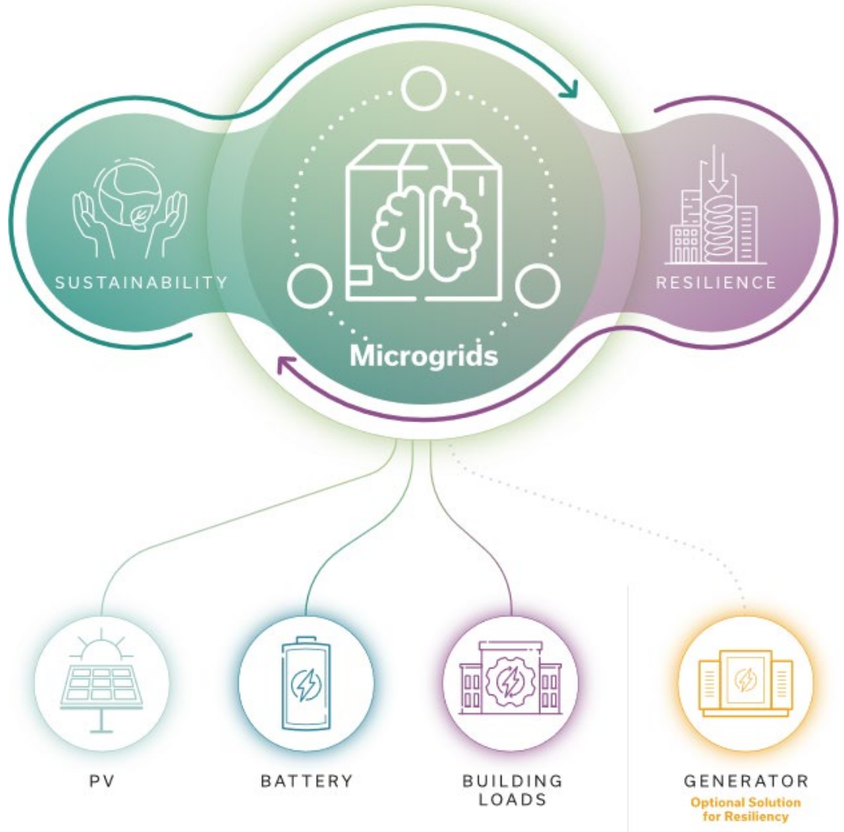
In scenarios where the results from PAE's Resiliency Tool suggest that the PV/BESS system was insufficient to meet the load needs, a secondary analysis was run in HOMER Grid to confirm that when the PV/BESS system fails to meet the load, the future 500 kW generator (planned as part of a different City of Tigard scope) will be capable of supporting the remaining load.

In all of the scenarios presented in this study where the PV/BESS system fails to support the load, the additional analysis found that the generator could pick up the remaining load.

General Notes:

In this Report the term "Reasonable BESS size" means a pair of two 250 kW/ 660 kWh microgrid solution from ELM Microgrid (formally Fieldsight). This system size is a proposed upper limit to help keep cost and space factors constrained to within reasonable limits of the project.

This study assumes no contribution from a fossil fuel generator, unless otherwise stated.



Variables Considered in this Analysis

DURATION OF AN OUTAGE

- We propose 4 different viable options that meet the needs of the Tigard Library at all three levels of outage in all seasons.

REDUNDANCY

- 2 solutions considered generally do not rely on a generator to meet the Library's needs.
- The other 2 solutions rely more heavily on the generator to meet the projected electrical needs of the system.

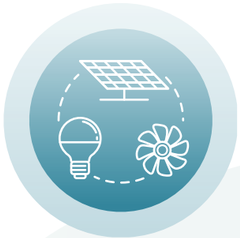
PV ARRAY SIZE

- We propose 2 different sizes of PV array for the library: 248 kW from Rooftop arrays and 509 kW from Rooftop arrays with the addition of 5 Carports.

BESS SIZE

- We propose 3 different sizes of BESS to support the generator and PV array.

A Guide to Reading the Resiliency Tool Outputs



Loads and Sources Used in the Model. Grey means the load/source is included in the calculations. White means it is not.



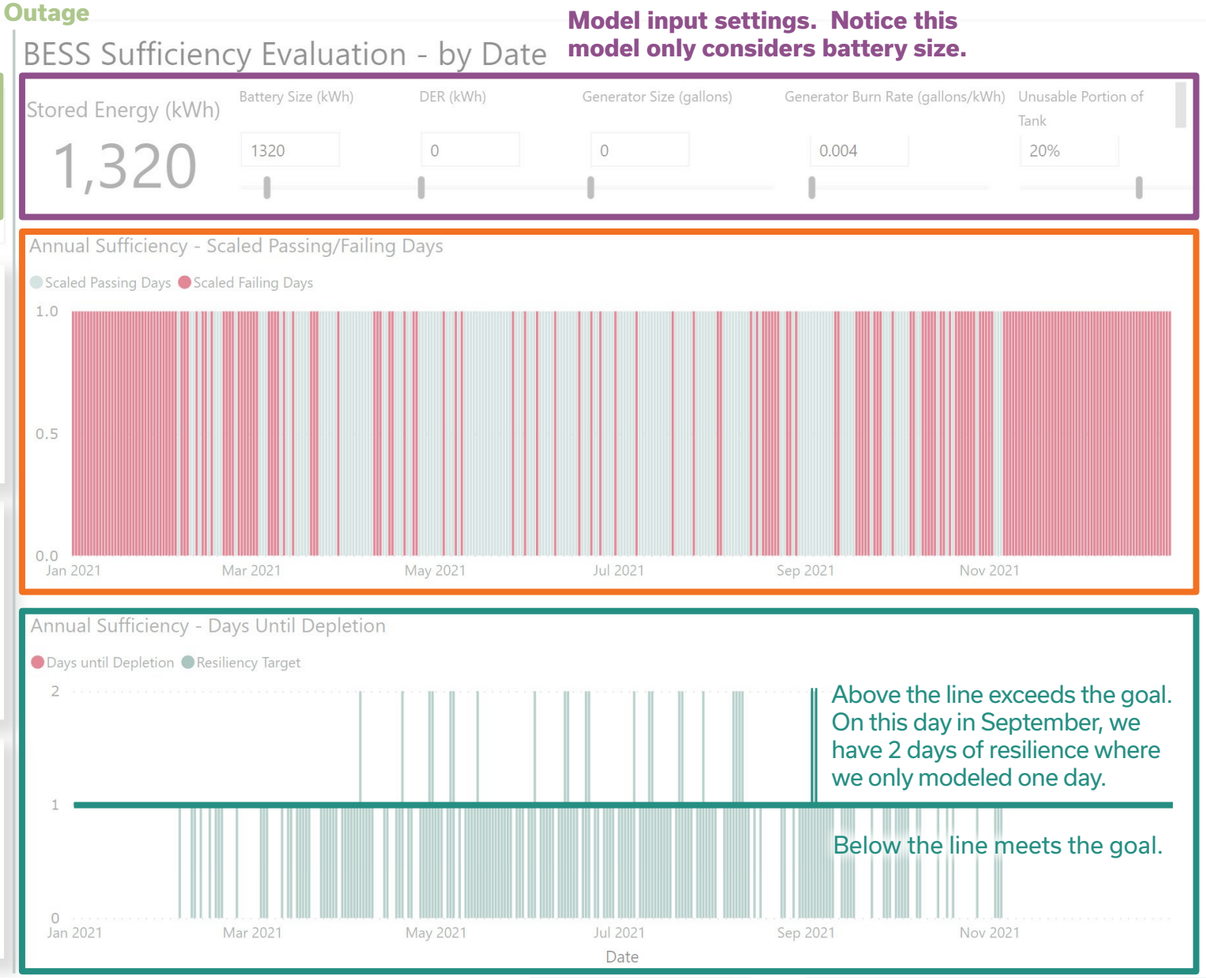
Percentage of included load considered in this model. 1.0 means 100% of load. A 0.5 means 50% of total load.



Percentage of PV design considered in this model.







Model input settings. Notice this model only considers battery size.



A simple pass/fail graph of the results. Green means our resilience goals are met. Red means they are not.



This graph builds on the above graph. For days where the resilience target is met, this graph lets you know how well the target was met.

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Whole Building Scenarios

Design Results

	PV SYSTEM LOCATION	PV SYSTEM SIZE	BESS SIZE MODELED	SYSTEM COST
SYSTEM DESIGN 1	Rooftop Only	248 kW	2,700 kWh	PV: $3.20/Watt Battery: $550/kWh
SYSTEM DESIGN 2	Rooftop and 5 Carports	508 kW	2,300 kWh	Roof PV: $3.20/Watt Carport PV: $7.00/Watt Battery: $550/kWh
SYSTEM DESIGN 3	Rooftop Only	248 kW	1,320 kWh	PV: $3.20/Watt Battery: $550/kWh
SYSTEM DESIGN 4	Rooftop and 5 Carports	508 kW	1,320 kWh	Roof PV: $3.20/Watt Carport PV: $7.00/Watt Battery: $550/kWh

Key Terms and Definitions

OPERATIONAL CARBON OPTIMIZATION
a solution that attempts to prevent the use of Carbon producing entities like a fossil fuel generator.

ECONOMICALLY OPTIMIZED
a solution that assesses the cost/benefit of different design elements and balances them against the needs of the project. Generally a lower cost option that still provides for the basic needs of the system.

PARTIAL RESILIENCY
a solution that maintains some part but not all of the normal electrical load during an outage.

FULL RESILIENCY
a solution that maintains the entirety of the normal electrical load even during an outage.

FULL LOAD
the normal electrical load when the grid is providing power.

PARTIAL LOAD
anything less than the normal electrical load when the grid is providing power.

REASONABLE BESS SIZE
In this report the term "Reasonable BESS Size" means two 250 kW/660 kWh microgrid solutions from ELM Microgrid (formally Fieldsight).

Outage Type

TYPICAL OUTAGE
- This study modeled a **24-hour outage**.
- 4 System Designs Proposed

MAJOR OUTAGE
From time to time a major outage occurs from inclimate weather events such as a winter storm, a wind storm or a fire event that leaves significant sections of the grid off-line for an extended period of time. This study modeled a **7 day outage**.

CATASTROPHIC OUTAGE
The west coast is long overdue for an earthquake that could cripple basic infrastructure. This study modeled a **2 week outage**.

Resiliency Scenario #1

TYPICAL OUTAGE: 24 HOURS

Scenario Overview

INPUTS:

- Whole Building
- 100% Building Load
- 1 Day Operation
- BESS sized to support all conditions

OUTPUTS:

- Full Resiliency
- Full load, all conditions, all systems

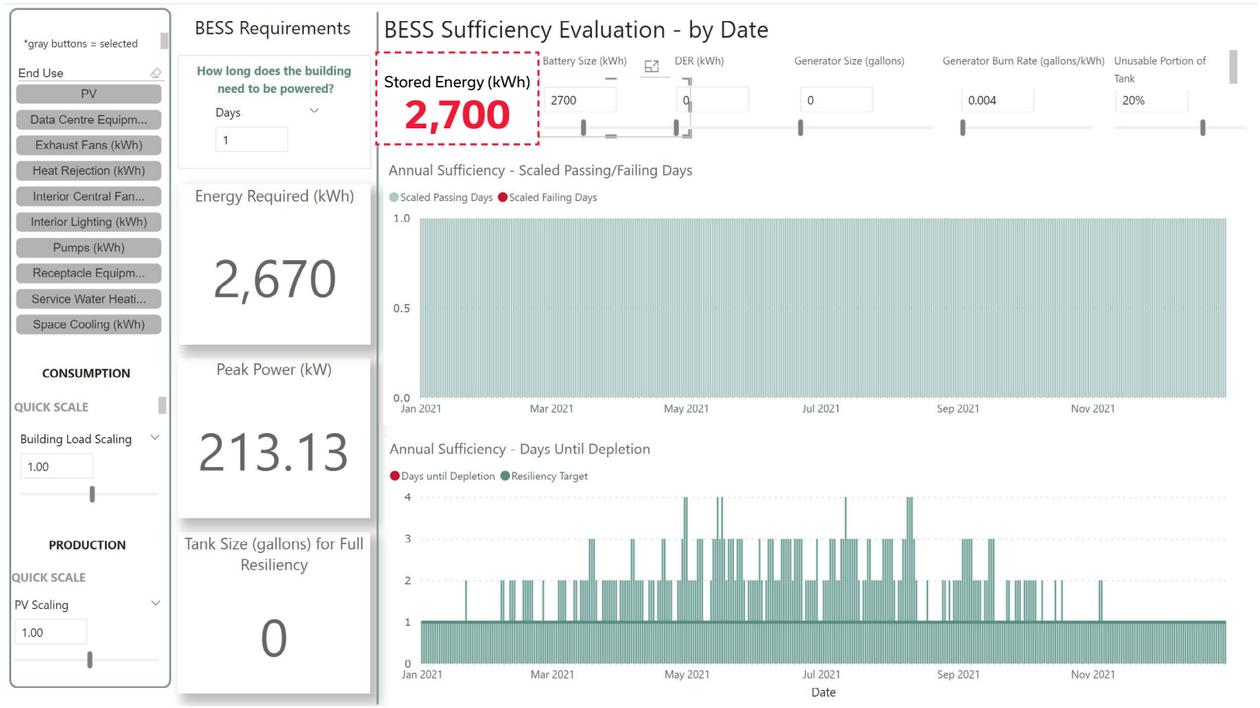
KEY FINDINGS:

- This scenario considered the question: what would it take to keep the building running under normal operation during a Level 1 outage?
- In practice the actual system would be four stacked 250kW/600 kWh microgrid solutions from ELM Fieldsight
- In the Rooftop Only PV Array scenario the building would fall 30 kWh short of its overall need, but the system has the backup of a 500 kW generator that would pick up this slack and recharge the battery in the winter months.
- In the Rooftop Array + 5 Car Ports scenario the building would have excess battery power to prevent the battery from full discharge allowing consideration of enrollment in one of PGEs DER programs.
- Both solutions may require generator backup in the winter months as PV production is unlikely to fully support the building load during extreme conditions not necessarily reflected in the average weather file.

SYSTEM DESIGN 1:

Rooftop Only PV

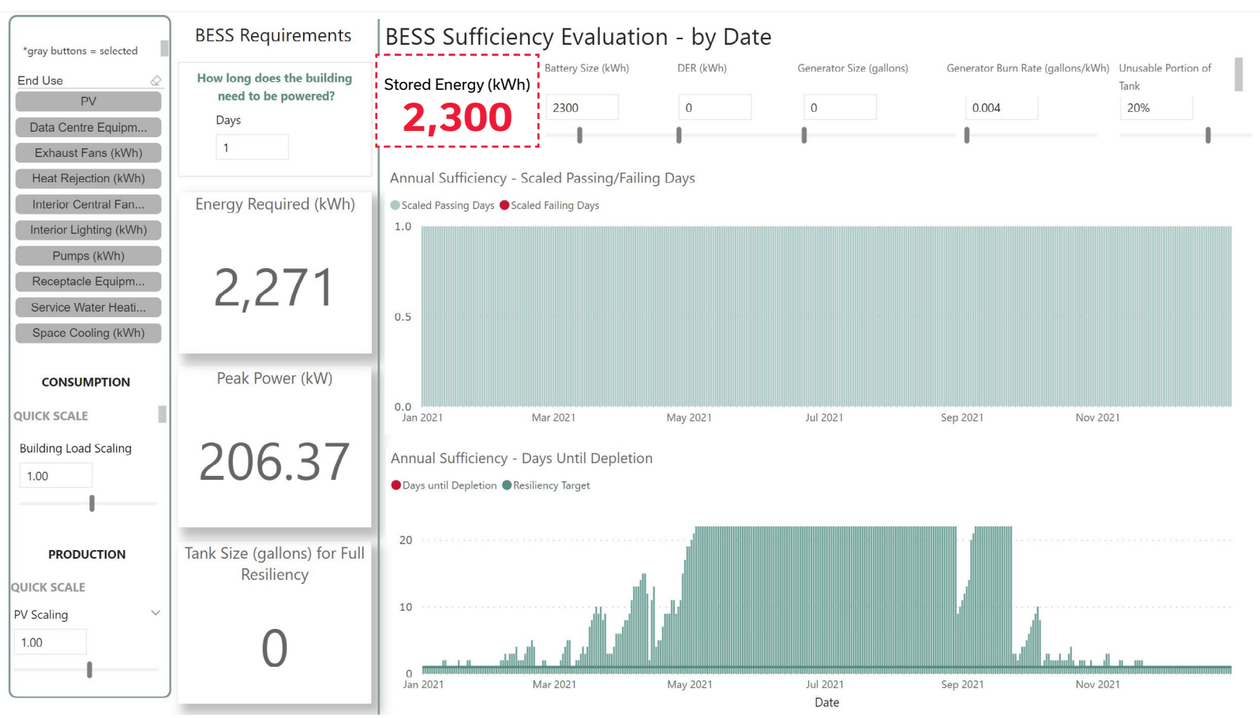
SYSTEM NPC: $4.30M



SYSTEM DESIGN 2:

Rooftop and 5 Car Ports

SYSTEM NPC: $5.65M



Resiliency Scenario #2

TYPICAL OUTAGE: 24 HOURS

Scenario Overview

INPUTS:

- Whole Building
- 100% Building Load
- 1 Day Operation
- Reasonable BESS Size

OUTPUTS:

- Partial Resiliency

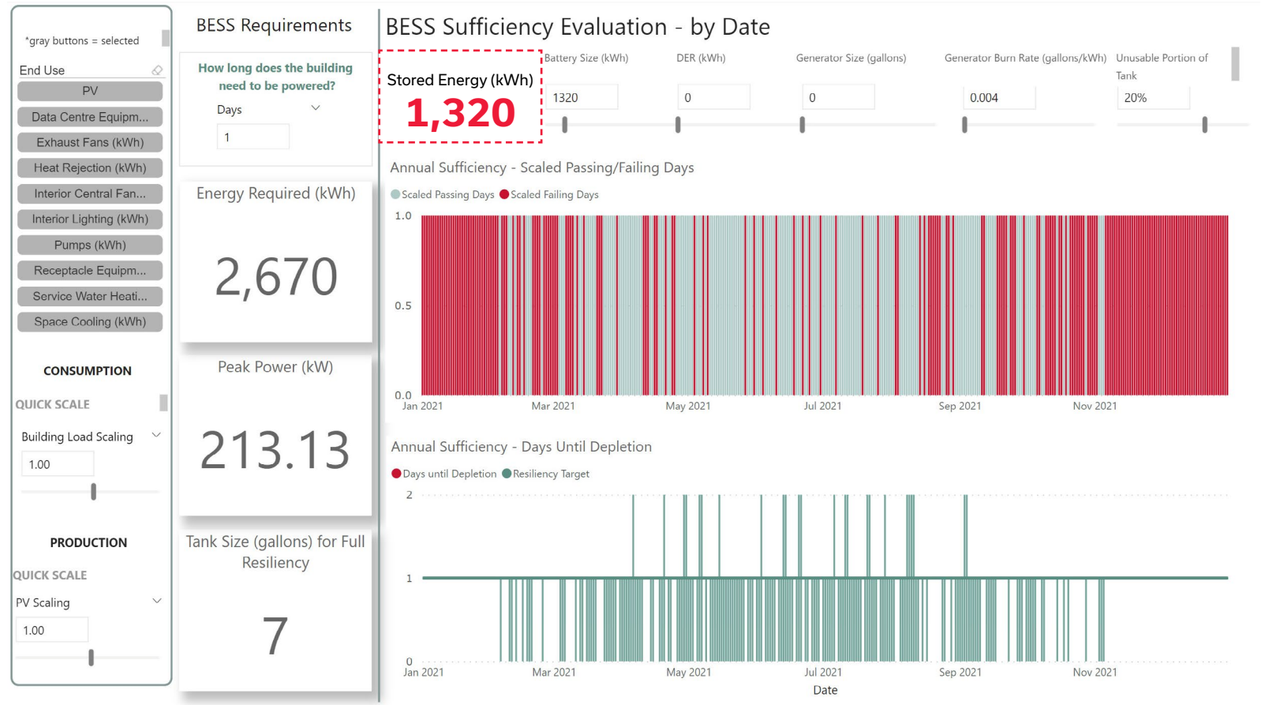
KEY FINDINGS:

- This is a lower cost option that relies on generator support to meet electrical need.
- In the Rooftop Only array the system would need significant support from the generator even in the spring and summer.
- In the Rooftop Array + 5 Car Ports scenario the system would be mostly resilient in the spring and summer months with support from the generator only being necessary in the winter months.

SYSTEM DESIGN 3:

Rooftop Only

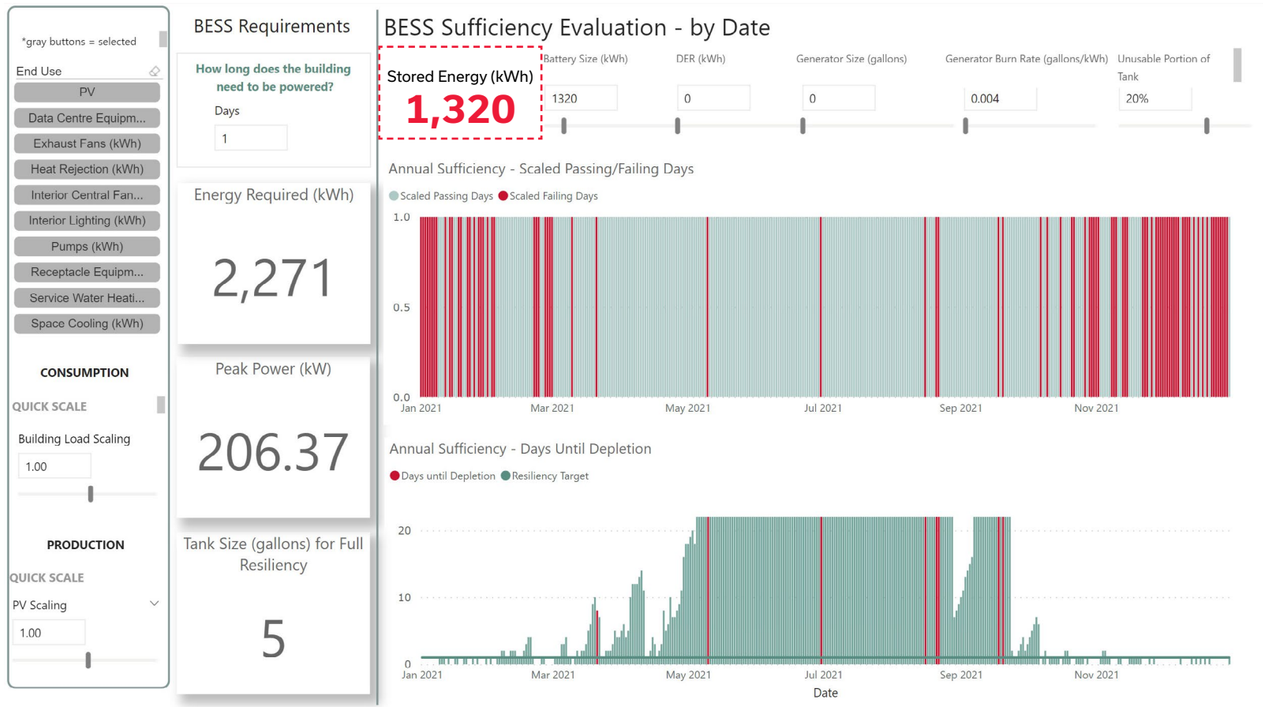
SYSTEM NPC: $2.87M



SYSTEM DESIGN 4:

Rooftop and 5 Car Ports

SYSTEM NPC: $4.70M



Resiliency Scenario #3

TYPICAL OUTAGE: 24 HOURS

Scenario Overview

INPUTS:

- Whole Building
- 50% Building Load
- 1 Day Operation
- Reasonable BESS Size

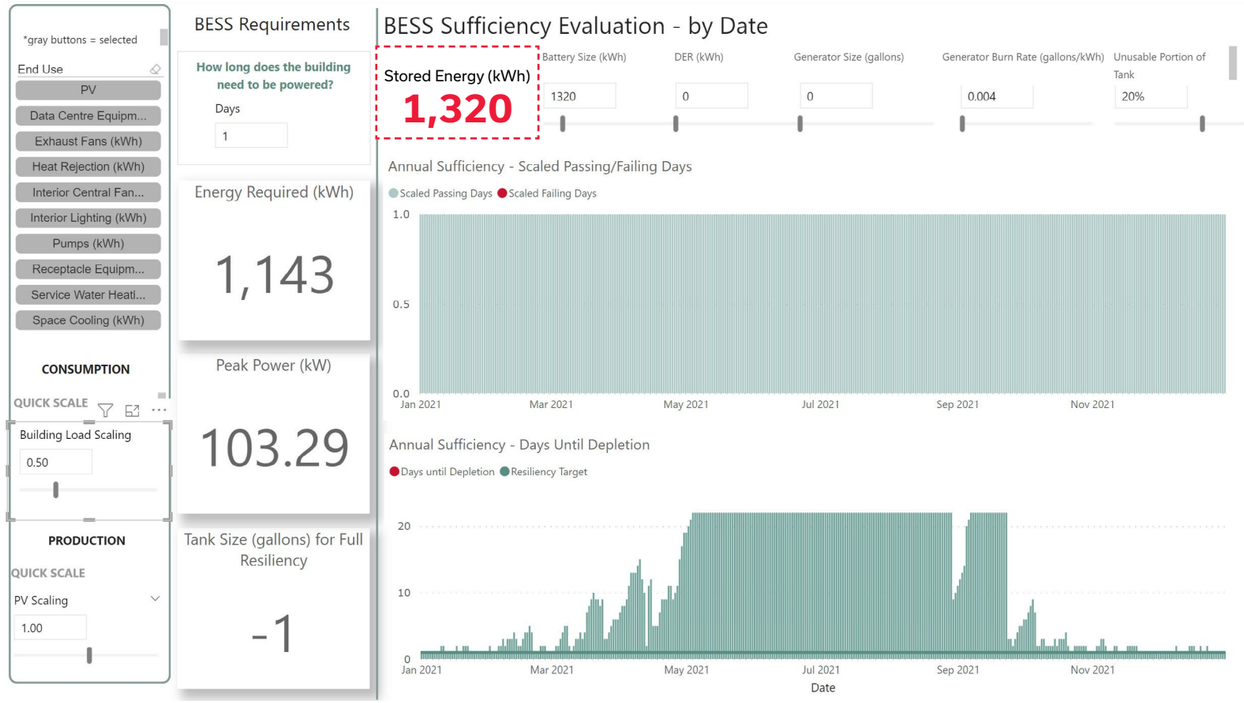
OUTPUTS:

- Partial Resiliency

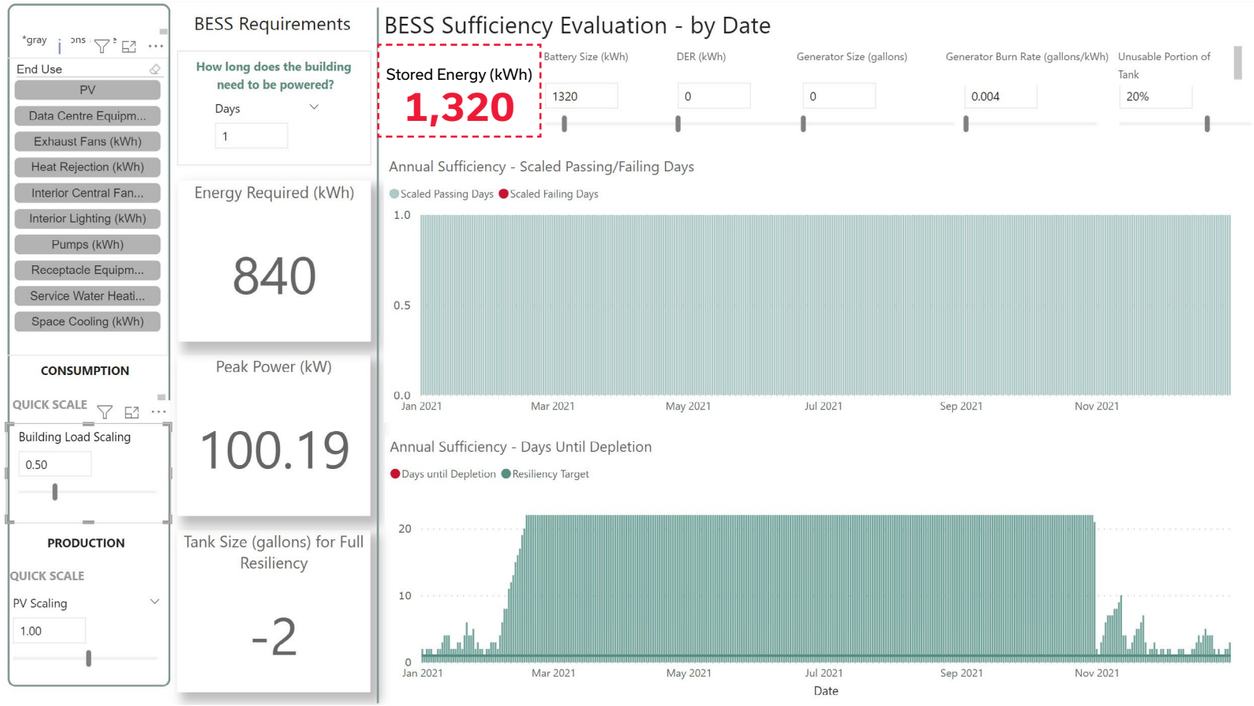
KEY FINDINGS:

- This is a lower cost option that also considers environmental impact. By shedding 50% of the load in the building, the PV/ BESS systems are able to provide energy resilience through most of the year.
- Both solutions may require generator backup in the winter months as PV production is unlikely to fully support the building load.

SYSTEM DESIGN 3:
Rooftop Only



SYSTEM DESIGN 4:
Rooftop and 5 Car Ports



Resiliency Scenario #4

TYPICAL OUTAGE: 24 HOURS

Scenario Overview

INPUTS:

- Whole Building
- 100% Building Load without Space Conditioning and Hot Water
- 1 Day Operation
- Reasonable BESS Size

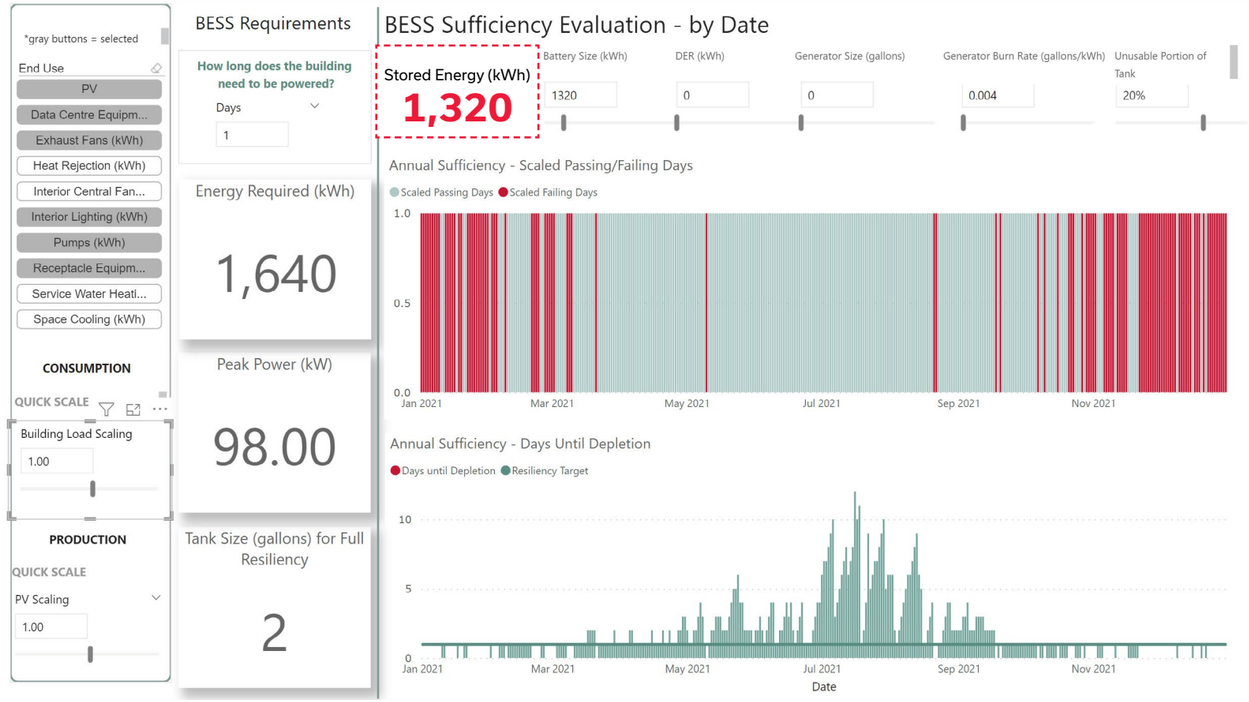
OUTPUTS:

- Partial Resiliency

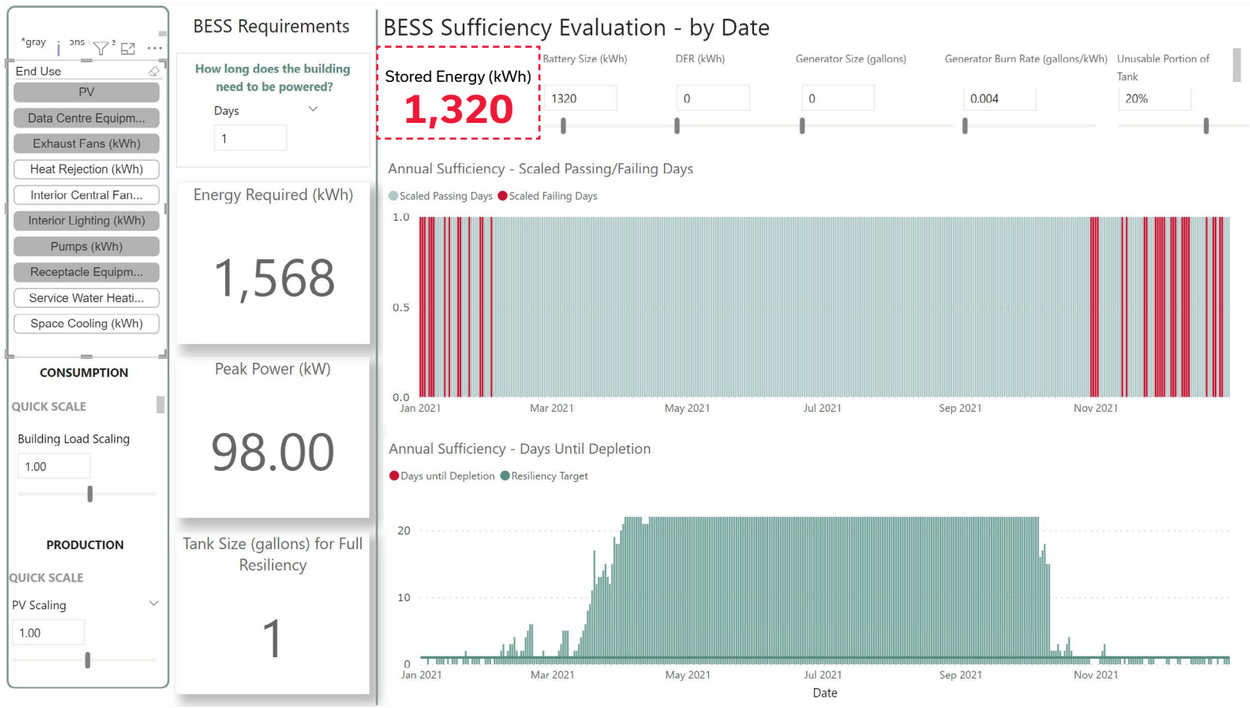
KEY FINDINGS:

- In this scenario we explore means of manual load shedding to illustrate a scenario where the BESS may not be able to meet the electrical load of the entire building, but can provide sufficient support for basic needs during an outage. The goal being to reduce the need to backup the system with a fossil fuel generator.
- In all scenarios explored in this study the trade off when the PV/ BESS system is insufficient for the load is an increased need for generator support in the winter months.

SYSTEM DESIGN 3:
Rooftop Only



SYSTEM DESIGN 4:
Rooftop and 5 Car Ports



Resiliency Scenario #5

MAJOR OUTAGE: 7 DAYS

Scenario Overview

INPUTS:

- Whole Building
- 50% Building Load without Space Conditioning
- 7 Day Operation
- Reasonable BESS Size

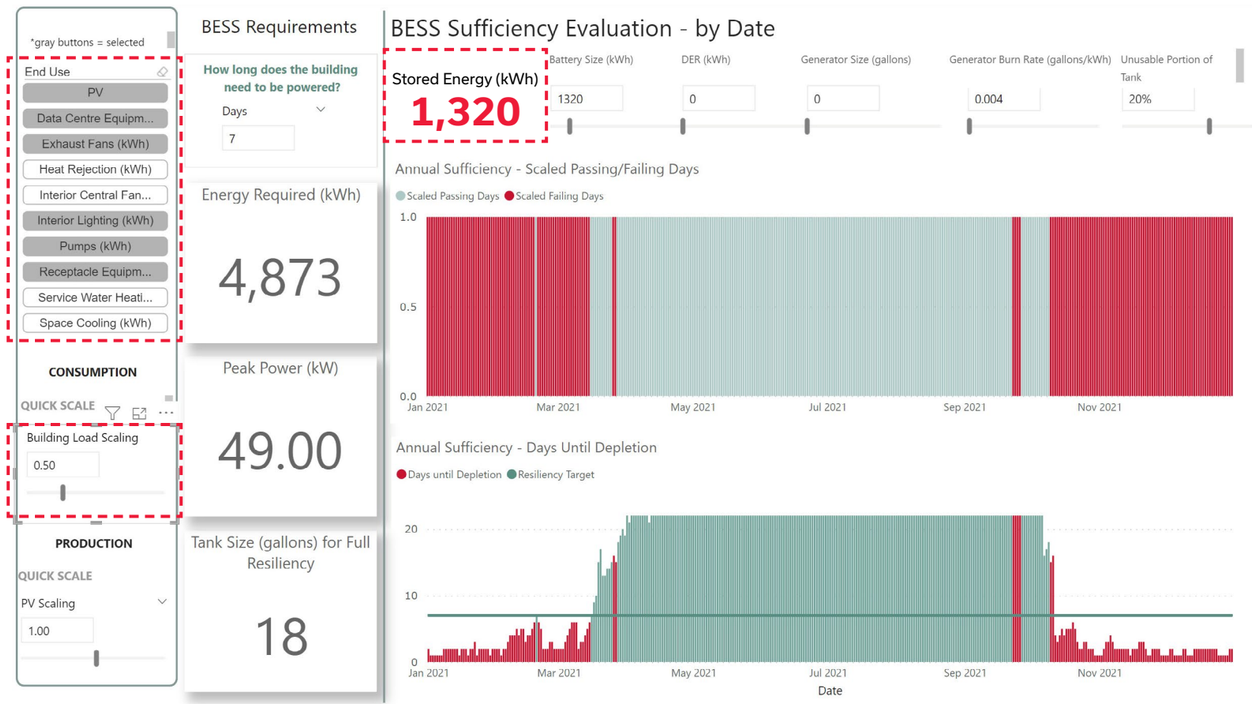
OUTPUTS:

- Partial Resiliency

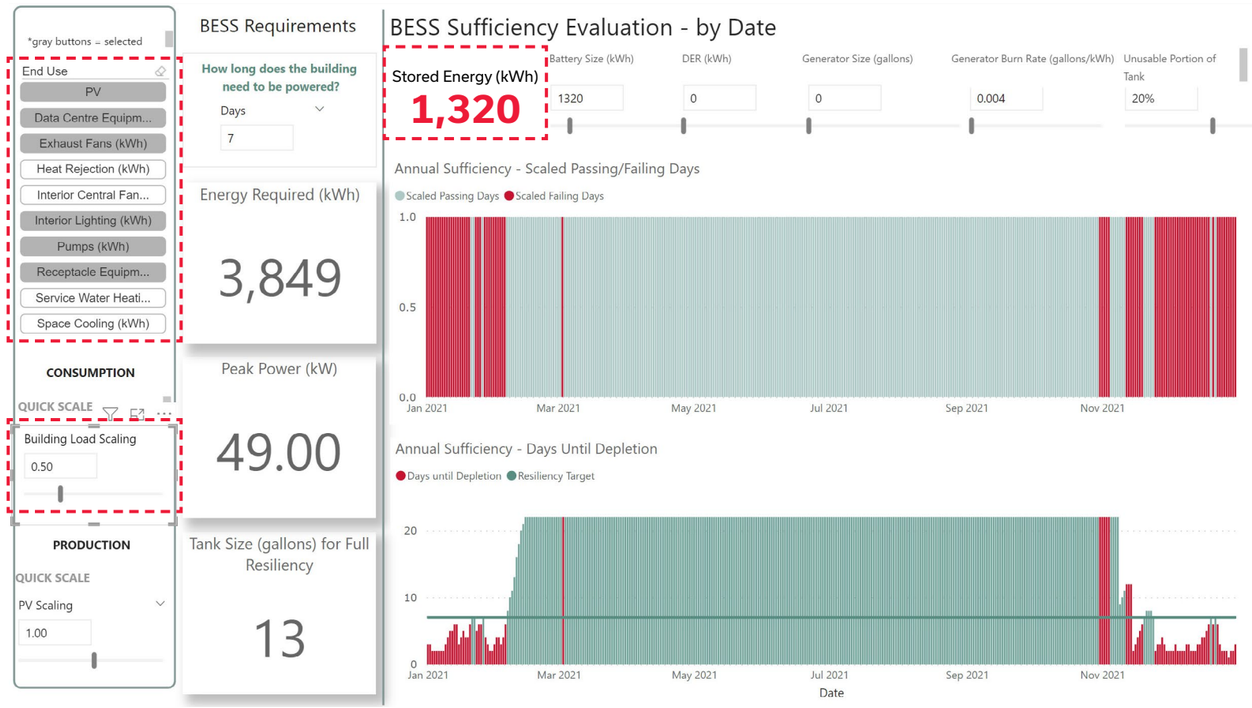
KEY FINDINGS:

- The increased duration of the outage substantially increases the resiliency needs of the system.
- In either design, even with the increased demand of the longer outage the system remains resilient in the spring and summer months only needing backup from the generator in the winter months.
- Both solutions meet the needs of the load in all seasons with the backup of the generator.

SYSTEM DESIGN 3:
Rooftop Only



SYSTEM DESIGN 4:
Rooftop and 5 Car Ports



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EOC Scenarios

Resiliency Scenario #6

MAJOR OUTAGE: 7 DAYS

Scenario Overview

INPUTS:

- EOC Operation
- EOC Load Conditions
- 7 Day Operation
- Reasonable BESS Size

OUTPUTS:

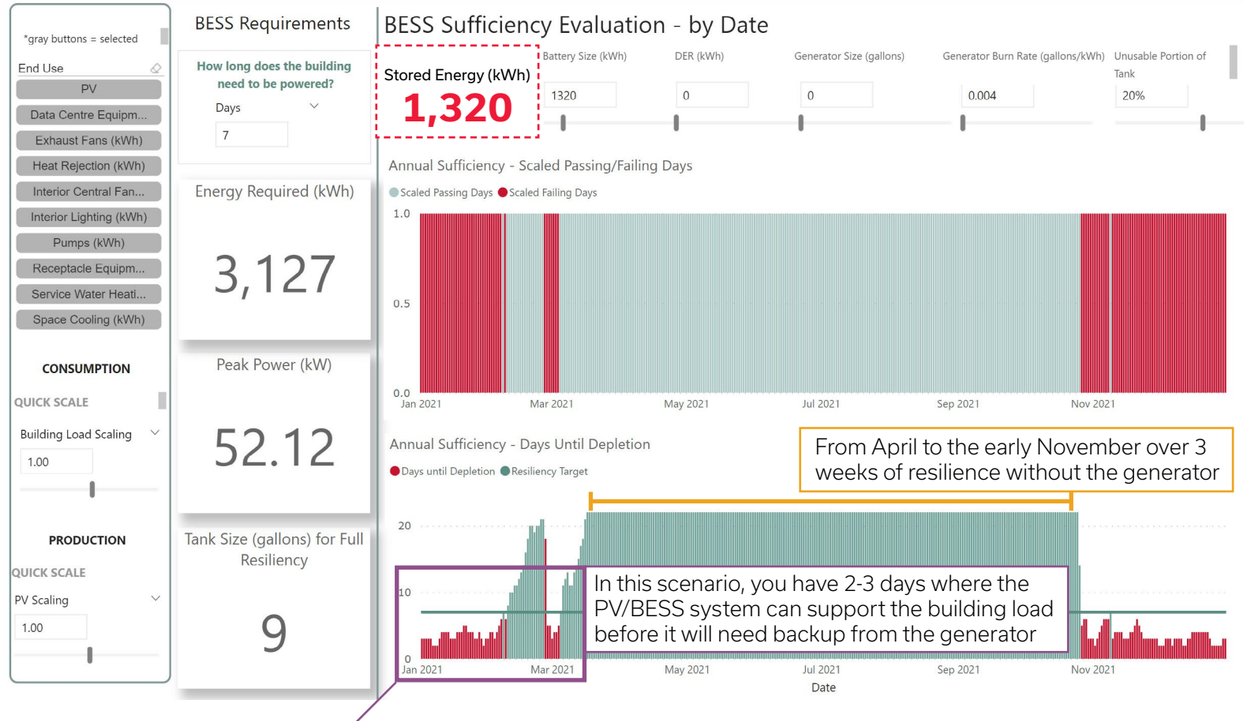
- Partial Resiliency

KEY FINDINGS:

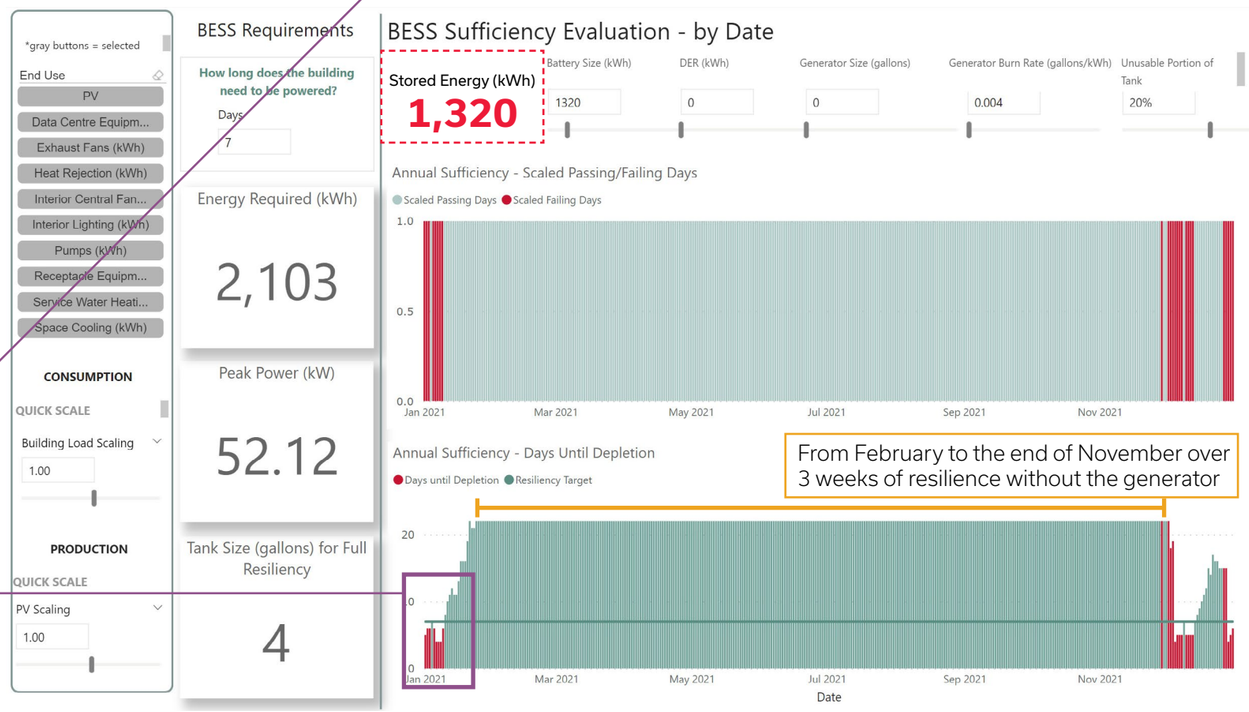
- There exists a gap between the needs of the system and the realities of a disaster. In the case of a catastrophic earthquake gas lines will have to be inspected before they can return to normal operation. In the winter months, this leaves a gap between need and ability to service that need that is not addressed by the proposed system.
- In the scenario with Rooftop PV Array and 5 Car Ports the gap between need and the ability to service that need is significantly smaller. With Rooftop arrays only, the gap can be as large as 4+ months where in the Car Port scenario that window shrinks to 1-2 months.
- Outside of the winter months both system designs have a strong resilience. While modeled at 2 weeks results show that when the sun is out basic power can be provided for EOC operation for nearly 3 weeks.

Assuming in the case of a catastrophic earthquake that the gas lines need to be turned off for inspection. This analysis shows that the PV/BESS system can support the building load for about 4-5 days before it would need support from the generator. If the gas lines can be restored in this time frame then this system is fully resilient. If gas can-not be restored in this time frame then the system enters a period where the necessary electrical needs cannot be met by the PV/BESS system.

SYSTEM DESIGN 3:
Rooftop Only



SYSTEM DESIGN 4:
Rooftop and 5 Car Ports



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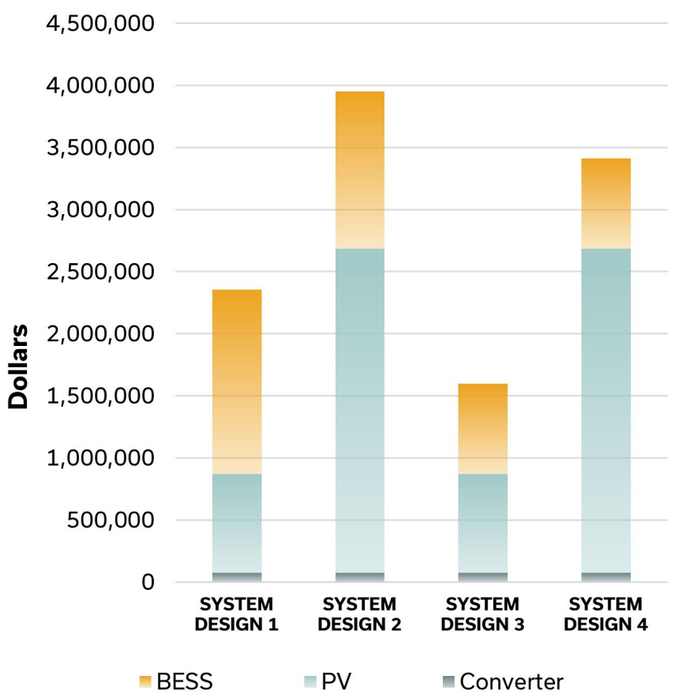
Results Summary



Preliminary Financial Analysis

	NPC	TOTAL SYSTEM LCOE	CAPEX	UTILITY SAVINGS $/YR
SYSTEM DESIGN 1	$4.30M	$0.31	$2.35M	$32,973
SYSTEM DESIGN 2	$5.65M	$0.40	$3.95M	$16,786
SYSTEM DESIGN 3	$2.87M	$0.21	$1.60M	$33,518
SYSTEM DESIGN 4	$4.70M	$0.32	$3.41M	$17,616

CAPITAL COST BY ELEMENT



COST BASIS

ROOFTOP PV ARRAY	$3.20/W
CARPORT PV ARRAY	$7.00/W
BESS	$550/kWh *Based on General Quote from ELM Microgrid*
UTILITY	$0.175/kWh *Based on Tariff Schedules Modeled in HOMER Grid*
UTILITY SCHEDULES	Schedule 83 + Subschedules *38,103,105,108,110,112,115,118, 135,146,150,153*



Recommendations and Next Steps

It is our recommendation that the City should move forward with a whole building microgrid with as much BESS as they can afford on Day 1. This might require manual load shedding during extreme weather conditions but over time the City can add to the BESS until they have adequate backup to meet their resilience operating needs.

NEXT STEPS:

— Final decision on whole building vs EOC microgrid basis of design
— Design team to complete SD design for basis of design microgrid system
— ETO trade partner to provide pricing estimate on basis of design system

Appendix C - Microgrid Single Line Diagrams

ABBREVIATIONS - ELECTRICAL

AFF	ABOVE FINISHED FLOOR	KVAR	KILOVOLT-AMPERE REACTIVE
ADA	AMERICANS DISABILITIES ACT	LA	LIGHTNING ARRESTOR
A	AMPERE (AMP)	LED	LIGHT EMITTING DIODE
AL	ALUMINUM	LRC	LIGHTING RELAY CONTROL PANEL
ARCH	ARCHITECT / ARCHITECTURAL	LTG	LIGHTING
ATS	AUTOMATIC TRANSFER SWITCH	LV	LOW VOLTAGE
AWG	AMERICAN WIRE GAUGE	MATV	MASTER ANTENNA TELEVISION
BAS	BUILDING AUTOMATION SYSTEM	MAX	MAXIMUM
BESS	BATTERY ENERGY STORAGE SYSTEM	MBJ	MAIN BONDING JUMPER
C	CONDUIT	MCA	MINIMUM CIRCUIT AMPACITY
CAT	CATEGORY CABLE	MCB	MAIN CIRCUIT BREAKER
CB	CIRCUIT BREAKER	MCC	MOTOR CONTROL CENTER
CCTV	CLOSED CIRCUIT TELEVISION	MDP	MAIN DISTRIBUTION PANEL
CKT	CIRCUIT	MECH	MECHANICAL
CLG	CEILING	MEMS	MICROGRID ENERGY MANAGEMENT SYSTEM
CT	CURRENT TRANSFORMER	MH	METAL HALIDE
CU	COPPER	MID	MICROGRID INTERCONNECT DEVICE
DER	DISTRIBUTED ENERGY RESOURCE(S)	MIN	MINIMUM
DN	DOWN	MLO	MAIN LUGS ONLY
DW	DISHWASHER	MOCP	MAXIMUM OVERCURRENT PROTECTION
ECB	ENCLOSED CIRCUIT BREAKER	MTS	MANUAL TRANSFER SWITCH
EM	EMERGENCY	MV	MEDIUM VOLTAGE
EMT	ELECTRICAL METALLIC TUBING	MW	MICROWAVE
EP	EXPLOSION PROOF	NIC	NOT IN CONTRACT
EPO	EMERGENCY POWER OFF	NL	NIGHT LIGHT CIRCUIT
EWC	ELECTRIC WATER COOLER	PA	PUBLIC ADDRESS
FA	FIRE ALARM	PCS	POWER CONTROL SYSTEM
FLA	FULL LOAD AMPS	PDZ	PRIMARY DAYLIGHT ZONE
FLUOR	FLUORESCENT	PE	PHOTOELECTRIC CELL
FCIC	FURNISHED BY CONTRACTOR	PF	POWER FACTOR
	INSTALLED BY CONTRACTOR	PNL	PANELBOARD
FOIC	FURNISHED BY OWNER	PVC	POLYVINYL CHLORIDE
	INSTALLED BY CONTRACTOR	PWR	POWER
FOIO	FURNISHED BY OWNER	REF	REFRIGERATOR
	INSTALLED BY OWNER	SDP	SUB-DISTRIBUTION PANEL
GD	GARBAGE DISPOSAL	SDZ	SECONDARY DAYLIGHT ZONE
GEC	GROUNDING ELECTRODE CONDUCTOR	STR	STARTER
GEN	GENERATOR	SV	SOLENOID VALVE
GFP	GROUND FAULT PROTECTION	SW	SWITCH
GFI	GROUND FAULT INDICATOR	TD	TIME DELAY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TP	TAMPERPROOF
GRC	GALVANIZED RIGID CONDUIT	TTB	TELEPHONE TERMINAL BOARD
GND	GROUND	TTC	TELEPHONE TERMINAL CABINET
HP	HORSEPOWER	TV	TELEVISION
HPS	HIGH PRESSURE SODIUM	TYP	TYPICAL
HV	HIGH VOLTAGE	UG	UNDERGROUND
HZ	HERTZ	UPS	UNINTERRUPTIBLE POWER SUPPLY
IG	ISOLATED GROUND	V	VOLTAGE
INC	INCANDESCENT	VA	VOLT-AMPERE
INV	INVERTER	VFD	VARIABLE FREQUENCY DRIVE
JB	JUNCTION BOX	VP	VAPORPROOF
KW	KILOWATT	W	WATTS
KWH	KILOWATT HOUR	WP	WEATHERPROOF
KV	KILOVOLT	XFMR	TRANSFORMER
KVA	KILOVOLT-AMPERE		

ELECTRICAL EQUIPMENT DESIGNATION

E 4 L - 1 - 1A - A

POWER TYPE:
- BLANK - NORMAL POWER
- E - EMERGENCY POWER
- U - UNINTERRUPTIBLE POWER

VOLTAGE:
- 2 - 208Y/120V
- 4 - 480Y/277V
- 5 - 4160Y/2400V
- 15 - 12470Y/7200V

EQUIPMENT:
- D - MAIN DISTRIBUTION PANEL
- S - SUB DISTRIBUTION PANEL
- B - BUSWAY
- M - MOTOR CONTROL CENTER
- A - AUTOMATIC TRANSFER SWITCH
- P - POWER PANEL
- L - LIGHTING PANEL
- T - TRANSFORMER
- U - UPS
- LRC - LIGHTING RELAY CONTROL PANEL

BUILDING LEVEL:
- 0 - BASEMENT
- 1 - FIRST LEVEL
- 2 - SECOND LEVEL
- 3 - THIRD LEVEL
- 4 - FOURTH LEVEL
- ETC.

GRID LOCATION:
- 1A - NEAR INTERSECTION OF GRID LINES 1 AND A

IDENTIFIER:
- A - FIRST IN SERIES OF EQUIPMENT
- B - SECOND IN SERIES OF EQUIPMENT
- ETC.

DESIGNATION SYMBOLS

--- / 123	EQUIPMENT DESIGNATOR SEE SCHEDULE.
E / X	EXISTING TO REMAIN, EXISTING TO BE REMOVED
R / F	EXISTING TO BE RELOCATED, FUTURE
N	NEW, POINT OF CONNECTION
1	NOTE

POWER - SINGLE LINE DIAGRAM & RISER

- CIRCUIT BREAKER, WITH GROUND FAULT PROTECTION, DRAW OUT
- DISTRIBUTION SWITCHBOARD / PANELBOARD, WITH INTERNAL BUS
- UTILITY POLE
- PANELBOARD
  PANEL INCOMING DESIGNATOR: MLO UNLESS MARKED MCB
  AMPACITY (AMPS)
- TRANSFORMER
- SERVICE TRANSFORMER, WITH VAULT
- GENERATOR, AUTOMATIC TRANSFER SWITCH
- METER: UTILITY, BASIC, ADVANCED, POWER QUALITY
- TRANSDUCER: CURRENT, POTENTIAL (VOLTAGE), COMBINED
- SURGE PROTECTIVE DEVICE, PUSH BUTTON
- ELECTRICAL BUSWAY, BUSWAY PLUG-IN CIRCUIT BREAKER
- FEEDER CONTINUATION CALLOUT, FEEDER TAG
- CALCULATED AVAILABLE SHORT-CIRCUIT CURRENT
- FEEDER: DROP, RISE, CAP, BREAK, CONTINUATION
- SWITCH, FUSED SWITCH
- DISCONNECT, FUSED DISCONNECT
- MOTOR, MOTOR WITH CONTROLLER, MOTOR WITH STARTER
- PV ARRAY, INVERTER

GENERAL NOTES:

A. THIS IS A STANDARD LEGEND SHEET, THEREFORE, SOME SYMBOLS MAY APPEAR ON THIS SHEET THAT DO NOT APPEAR ON THE DRAWINGS.

ELECTRICAL SHEET LIST

SHEET #	SHEET NAME
E001	SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL
E701	DIAGRAMS - ELECTRICAL - DEMOLITION
E702	DIAGRAMS - ELECTRICAL - NEW CONSTRUCTION
Grand total: 3	

PAE
pae-engineers.com
LUMA
Lumald.com

Tigard Microgrid BRIC Grant

P:\Standard Files\01 Production\01 Revit\01 Templates

STAMP:

NO.	REVISION	DATE

SET TITLE:
Project Status

DRAWN BY:	Author
CHECKED BY:	Checker
SCALE:	NONE
DATE:	2022-12-20
JOB NO.	23-####

SHEET TITLE:
SYMBOLS, LEGENDS AND ABBREVIATIONS - ELECTRICAL

SHEET NUMBER:
E001

6/9/2023 9:29:32 AM Autodesk Docs://23-785 - Tigard Microgrid BRIC Grant/23-785 - Tigard Microgrid BRIC Grant E23.rvt

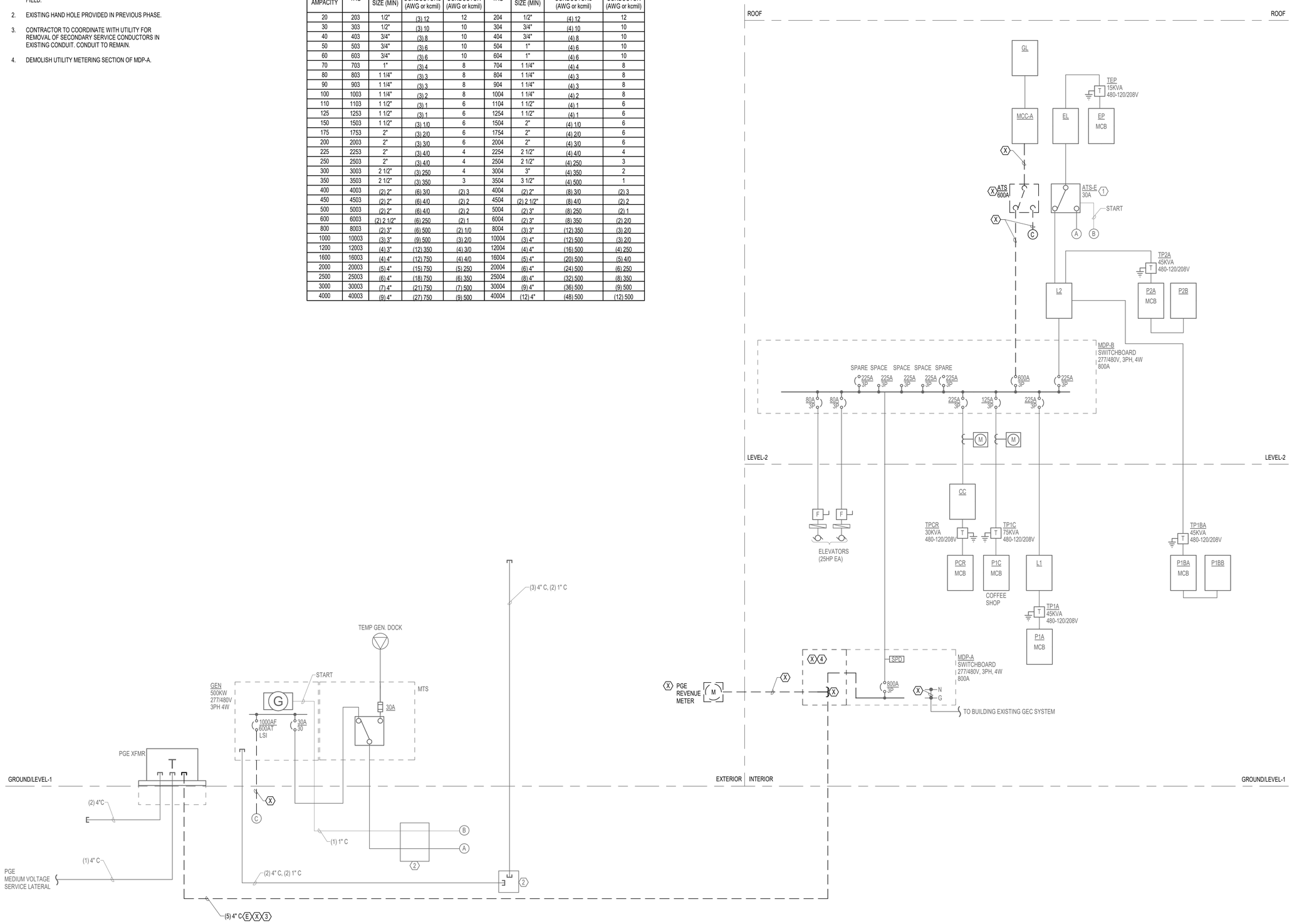
GENERAL NOTES:

A. EQUIPMENT IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

NOTES:

1. CONTRACTOR TO UPDATE EQUIPMENT LABELING IN FIELD.
2. EXISTING HAND HOLE PROVIDED IN PREVIOUS PHASE.
3. CONTRACTOR TO COORDINATE WITH UTILITY FOR REMOVAL OF SECONDARY SERVICE CONDUCTORS IN EXISTING CONDUIT. CONDUIT TO REMAIN.
4. DEMOLISH UTILITY METERING SECTION OF MDP-A.

	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
NOMINAL AMPACITY	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)
20	203	1/2"	(3) 12	12	204	1/2"	(4) 12	12
30	303	1/2"	(3) 10	10	304	3/4"	(4) 10	10
40	403	3/4"	(3) 8	10	404	3/4"	(4) 8	10
50	503	3/4"	(3) 6	10	504	1"	(4) 6	10
60	603	3/4"	(3) 6	10	604	1"	(4) 6	10
70	703	1"	(3) 4	8	704	1 1/4"	(4) 4	8
80	803	1 1/4"	(3) 3	8	804	1 1/4"	(4) 3	8
90	903	1 1/4"	(3) 3	8	904	1 1/4"	(4) 3	8
100	1003	1 1/4"	(3) 2	8	1004	1 1/4"	(4) 2	8
110	1103	1 1/2"	(3) 1	6	1104	1 1/2"	(4) 1	6
125	1253	1 1/2"	(3) 1	6	1254	1 1/2"	(4) 1	6
150	1503	1 1/2"	(3) 1/0	6	1504	2"	(4) 1/0	6
175	1753	2"	(3) 2/0	6	1754	2"	(4) 2/0	6
200	2003	2"	(3) 3/0	6	2004	2"	(4) 3/0	6
225	2253	2"	(3) 4/0	4	2254	2 1/2"	(4) 4/0	4
250	2503	2"	(3) 4/0	4	2504	2 1/2"	(4) 250	3
300	3003	2 1/2"	(3) 250	4	3004	3"	(4) 350	2
350	3503	2 1/2"	(3) 350	3	3504	3 1/2"	(4) 500	1
400	4003	(2) 2"	(6) 3/0	(2) 3	4004	(2) 2"	(8) 3/0	(2) 3
450	4503	(2) 2"	(6) 4/0	(2) 2	4504	(2) 2 1/2"	(8) 4/0	(2) 2
500	5003	(2) 2"	(6) 4/0	(2) 2	5004	(2) 3"	(8) 250	(2) 1
600	6003	(2) 2 1/2"	(6) 250	(2) 1	6004	(2) 3"	(8) 350	(2) 2/0
800	8003	(2) 3"	(6) 500	(2) 1/0	8004	(3) 3"	(12) 350	(3) 2/0
1000	10003	(3) 3"	(9) 500	(3) 2/0	10004	(3) 4"	(12) 500	(3) 2/0
1200	12003	(4) 3"	(12) 350	(4) 3/0	12004	(4) 4"	(16) 500	(4) 250
1600	16003	(4) 4"	(12) 750	(4) 4/0	16004	(5) 4"	(20) 500	(5) 4/0
2000	20003	(5) 4"	(15) 750	(5) 250	20004	(6) 4"	(24) 500	(6) 250
2500	25003	(6) 4"	(18) 750	(6) 350	25004	(8) 4"	(32) 500	(8) 350
3000	30003	(7) 4"	(21) 750	(7) 500	30004	(9) 4"	(36) 500	(9) 500
4000	40003	(9) 4"	(27) 750	(9) 500	40004	(12) 4"	(48) 500	(12) 500



1 26 - Single Line Diagram - Demolition Plan
NONE

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Tigard Microgrid BRIC Grant

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DRAWN BY:	Author
CHECKED BY:	Checker
SCALE:	NONE
DATE:	2022-12-20
JOB NO.	23-####

SHEET TITLE:
DIAGRAMS - ELECTRICAL - DEMOLITION

SHEET NUMBER:
E701

Autodesk Docs://23-1789 - Tigard Microgrid BRIC Grant/23-1789 - Tigard Microgrid BRIC Grant_E23.rvt
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GENERAL NOTES:

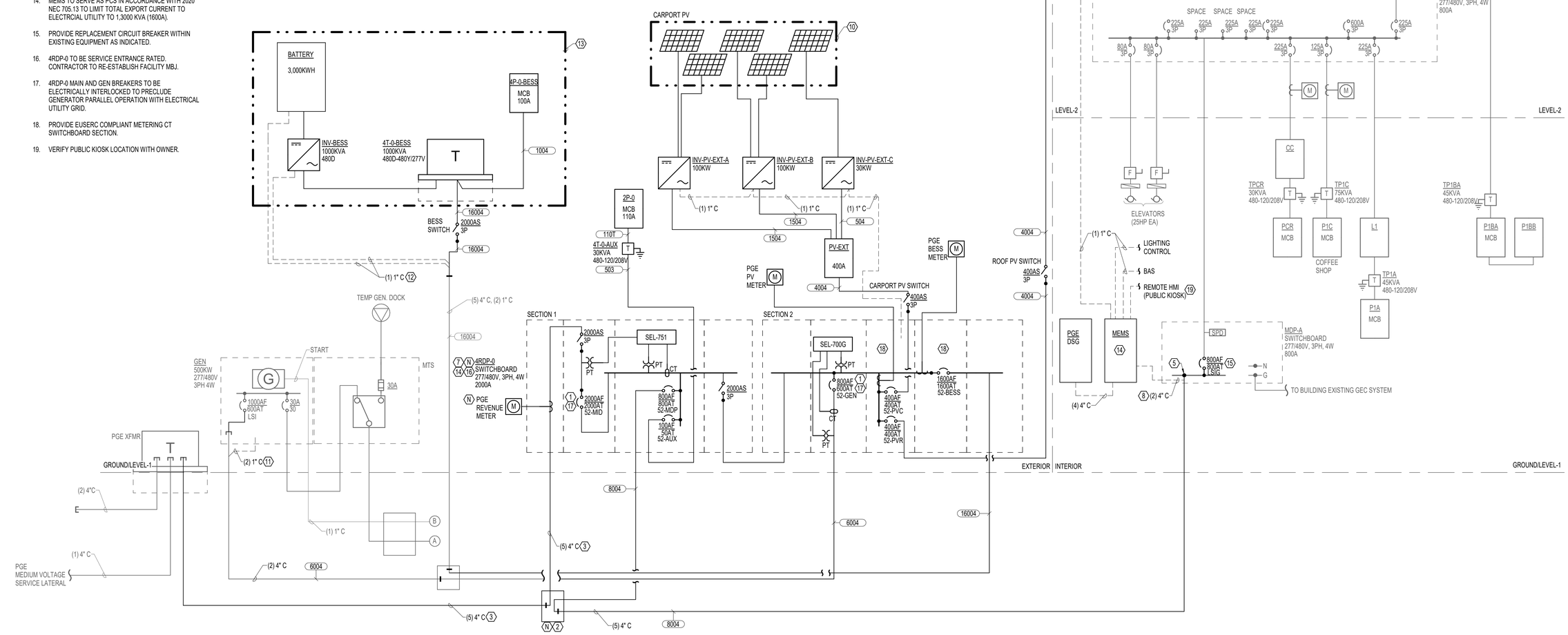
A. EXISITNG EQUIPMENT IS INDICATED WITH HALF-TONE LINE WEIGHT.

B. NEW EQUIPMENT IS INDICATED WITH FULL-TONE LINE WEIGHT.

NOTES:

1. PROVIDE ELECTRICALLY OPERABLE CIRCUIT BREAKER.
2. CONTRACTOR TO PROVIDE HAND HOLE FOR INTERCEPTION, EXTENSION AND REROUTING OF EXISTING CONDUIT RUN AS INDICATED.
3. CONTRACTOR TO COORDINATE WITH UTILITY FOR INSTALLATION OF SECONDARY SERVICE CONDUCTORS IN EXISTING CONDUIT.
4. BOLTED PRESSURE SWITCH WITH VISIBLE INSPECTION WINDOW OR MECHANICAL SWITCH POSITION INDICATOR.
5. PV FEEDER TAP AND NEW MDP-A FEEDER TO BE LANDED ON EXISTING SWITCHBOARD BUS UPSTREAM FROM THE EXISTING 800A FEEDER BREAKER TO MDP-B.
6. ROOF PV SYSTEM MAXIMUM DC NAMEPLATE CAPACITY TO BE 250KW.
7. ALL CIRCUIT BREAKERS WITHIN SWITCHBOARD 4RDP-0 TO BE EQUIPPED WITH INTEGRAL POWER AND ENERGY METERING AND ADJUSTABLE LSIG TRIP SETTING CAPABILITIES.
8. UTILIZE SPARE CONDUITS FOR MICROGRID CONTROL COMMUNICATIONS BETWEEN MEMS CABINET AND 4RDP-0.
9. NOT USED.
10. CARPORT PV SYSTEM MAXIMUM DC NAMEPLATE CAPACITY TO BE 260KW.
11. UTILIZE SPARE CONDUITS FOR MICROGRID CONTROL COMMUNICATIONS BETWEEN MEMS CABINET AND GEN.
12. UTILIZE SPARE CONDUITS FOR MICROGRID CONTROL COMMUNICATIONS BETWEEN MEMS CABINET AND BESS.
13. BESS EQUIPMENT TO BE SUPPLIED AND FIELD LISTED UNDER UL9540 AS A SINGLE PRE-ENGINEERED SYSTEM BY THE BESS MANUFACTURER.
14. MEMS TO SERVE AS PCS IN ACCORDANCE WITH 2020 NEC 705.13 TO LIMIT TOTAL EXPORT CURRENT TO ELECTRCIAL UTILITY TO 1,3000 KVA (1600A).
15. PROVIDE REPLACEMENT CIRCUIT BREAKER WITHIN EXISTING EQUIPMENT AS INDICATED.
16. 4RDP-0 TO BE SERVICE ENTRANCE RATED. CONTRACTOR TO RE-ESTABLISH FACILITY MBJ.
17. 4RDP-0 MAIN AND GEN BREAKERS TO BE ELECTRICALLY INTERLOCKED TO PRECLUDE GENERATOR PARALLEL OPERATION WITH ELECTRICAL UTILITY GRID.
18. PROVIDE EUSERC COMPLIANT METERING CT SWITCHBOARD SECTION.
19. VERIFY PUBLIC KIOSK LOCATION WITH OWNER.

	FEEDER SCHEDULE COPPER: 3 PHASE, 3 WIRE + GROUND				FEEDER SCHEDULE COPPER: 3 PHASE, 4 WIRE + GROUND			
NOMINAL AMPACITY	TAG	CONDUIT SIZE (MIN)	PHASE CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)	TAG	CONDUIT SIZE (MIN)	PHASE & NEUTRAL CONDUCTORS (AWG or kcmil)	GROUND CONDUCTOR (AWG or kcmil)
20	203	1/2"	(3) 12	12	204	1/2"	(4) 12	12
30	303	1/2"	(3) 10	10	304	3/4"	(4) 10	10
40	403	3/4"	(3) 8	10	404	3/4"	(4) 8	10
50	503	3/4"	(3) 6	10	504	1"	(4) 6	10
60	603	3/4"	(3) 6	10	604	1"	(4) 6	10
70	703	1"	(3) 4	8	704	1 1/4"	(4) 4	8
80	803	1 1/4"	(3) 3	8	804	1 1/4"	(4) 3	8
90	903	1 1/4"	(3) 3	8	904	1 1/4"	(4) 3	8
100	1003	1 1/4"	(3) 2	8	1004	1 1/4"	(4) 2	8
110	1103	1 1/2"	(3) 1	6	1104	1 1/2"	(4) 1	6
125	1253	1 1/2"	(3) 1	6	1254	1 1/2"	(4) 1	6
150	1503	1 1/2"	(3) 1/0	6	1504	2"	(4) 1/0	6
175	1753	2"	(3) 2/0	6	1754	2"	(4) 2/0	6
200	2003	2"	(3) 3/0	6	2004	2"	(4) 3/0	6
225	2253	2"	(3) 4/0	4	2254	2 1/2"	(4) 4/0	4
250	2503	2"	(3) 4/0	4	2504	2 1/2"	(4) 250	3
300	3003	2 1/2"	(3) 250	4	3004	3"	(4) 350	2
350	3503	2 1/2"	(3) 350	3	3504	3 1/2"	(4) 500	1
400	4003	(2) 2"	(6) 3/0	(2) 3	4004	(2) 2"	(8) 3/0	(2) 3
450	4503	(2) 2"	(6) 4/0	(2) 2	4504	(2) 2 1/2"	(8) 4/0	(2) 2
500	5003	(2) 2"	(6) 4/0	(2) 2	5004	(2) 3"	(8) 250	(2) 1
600	6003	(2) 2 1/2"	(6) 250	(2) 1	6004	(2) 3"	(8) 350	(2) 2/0
800	8003	(2) 3"	(6) 500	(2) 1/0	8004	(3) 3"	(12) 350	(3) 2/0
1000	10003	(3) 3"	(9) 500	(3) 2/0	10004	(3) 4"	(12) 500	(3) 2/0
1200	12003	(4) 3"	(12) 350	(4) 3/0	12004	(4) 4"	(16) 500	(4) 250
1600	16003	(4) 4"	(12) 750	(4) 4/0	16004	(5) 4"	(20) 500	(5) 4/0
2000	20003	(5) 4"	(15) 750	(5) 250	20004	(6) 4"	(24) 500	(6) 250
2500	25003	(6) 4"	(18) 750	(6) 350	25004	(8) 4"	(32) 500	(8) 350
3000	30003	(7) 4"	(21) 750	(7) 500	30004	(9) 4"	(36) 500	(9) 500
4000	40003	(9) 4"	(27) 750	(9) 500	40004	(12) 4"	(48) 500	(12) 500



1 26 - Single Line Diagram - New Construction
NONE

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Lumald.com

Tigard Microgrid BRIC Grant

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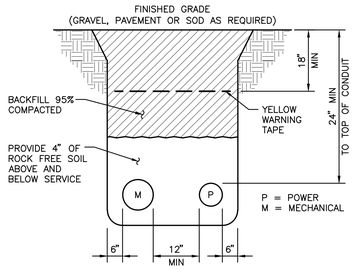
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JOB NO.	23-####

SHEET TITLE:
DIAGRAMS - ELECTRICAL - NEW CONSTRUCTION

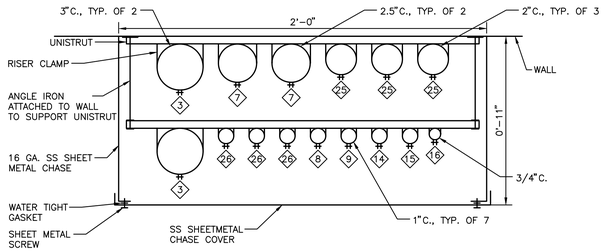
SHEET NUMBER:
E702

6/5/2023 2:29:39 AM Autodesk Docs://23-1780 - Tigard Microgrid BRIC Grant/23-1780 - Tigard Microgrid BRIC Grant E23.rvt

Appendix D - Microgrid Site Plan



3 E2.4 **TRENCHING SECTION**
NOT TO SCALE



NOTES:
1. SEAL ALL PENETRATIONS W/ SILICONE WATER TIGHT.
2. PROVIDE CROSS BREAKS OR REINFORCEMENTS PER SMAACNA.
3. RISER SUPPORTS AT MAXIMUM 15' O.C. VERTICALLY PER CODE. ATTACH PER STRUCTURAL.
4. DCW PIPING BETWEEN TRENCH AND FIRST FLOOR CEILING ONLY.

4 E2.4 **CONDUIT CHASE DETAIL**
SCALE: 3" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET E0.1 FOR ELECTRICAL SYMBOL LEGEND AND ABBREVIATIONS.

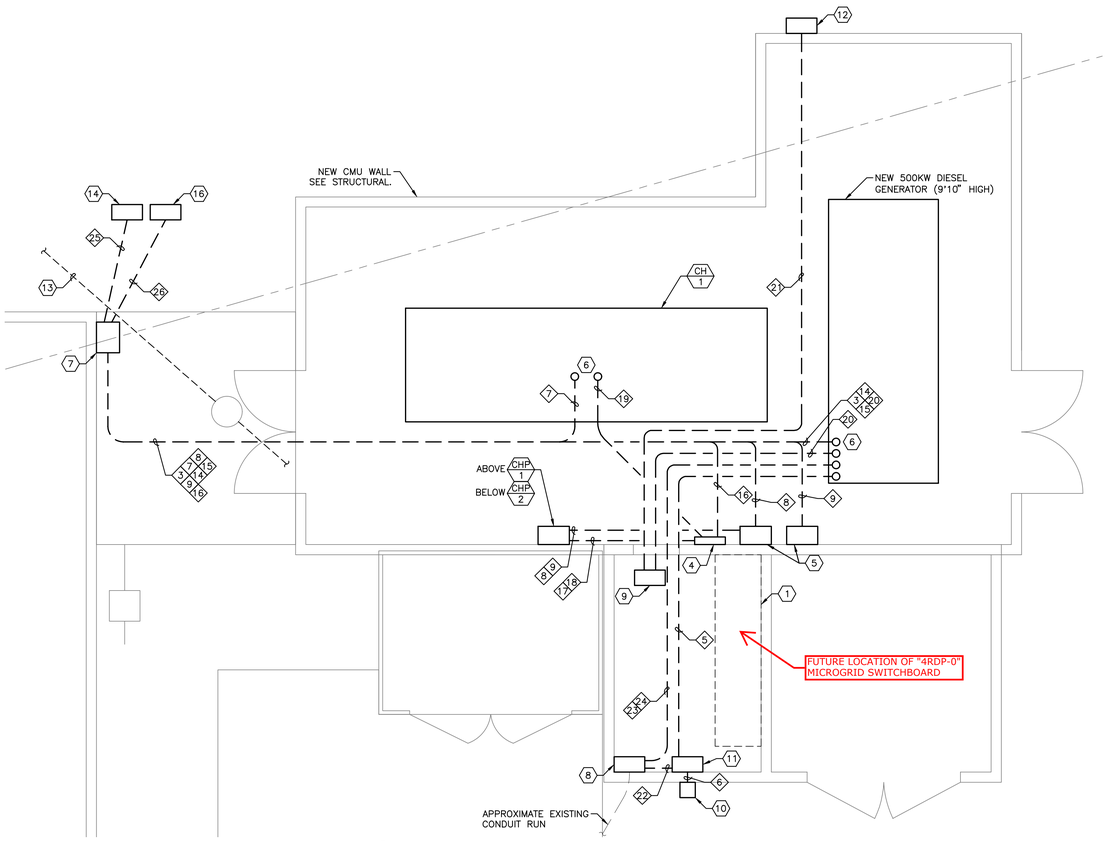
B. REFER TO SHEET E3.1, E3.2, E3.3, AND E3.4 FOR ELECTRICAL ONE-LINE DIAGRAM.

C. REFER TO SHEET E3.5 FOR ELECTRICAL SCHEDULES.

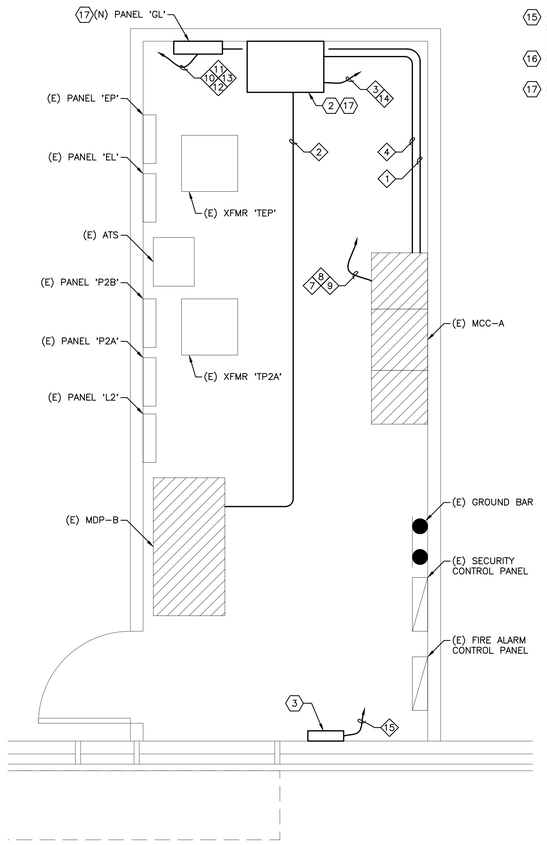
D. ALL CONDUIT ROUTING SHOWN IS DIAGRAMMATIC, EXACT CONDUIT ROUTING TO BE COORDINATED IN THE FIELD.

NOTES THIS SHEET

1. POTENTIAL LOCATION FOR FUTURE RESILIENT DISTRIBUTION PANEL 'RDP-A'.
2. INSTALL NEW AUTOMATIC TRANSFER SWITCH, SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
3. INSTALL NEW GENERATOR ANNUNCIATOR PANEL, FIELD COORDINATE EXACT LOCATION WITH OWNER.
4. MECHANICAL CONTROL PANEL. FIELD COORDINATE ALL CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
5. 10HP NEMA 3R VFD FOR CHILLED WATER PUMP.
6. COORDINATE CONDUIT STUB-UP AREA WITH EQUIPMENT MANUFACTURER.
7. VERTICAL CHASE FOR ELECTRICAL CONDUITS TO BE ROUTED ALONG ROOF TO ELECTRICAL ROOM. EXACT CONDUIT ROUTING TO BE DETERMINED IN THE FIELD. SEE DETAIL 4/E2.4 FOR ADDITIONAL INFORMATION. WHERE CHASE GOES OVER PARAPET, PROVIDE WATER TIGHT SS COVERING OPEN TO ROOF BELOW.
8. INSTALL HANDHOLE TO INTERCEPT EXISTING EMERGENCY GENERATOR FEED, GENERATOR CONTROL SIGNAL, GENERATOR BATTERY CHARGER, AND GENERATOR BLOCK HEATER. FIELD COORDINATE EXACT LOCATION OF EXISTING CONDUIT RUN PRIOR TO INSTALLATION OF HANDHOLE.
9. INSTALL HANDHOLE FOR FUTURE EXTENSION OF CONDUITS TO RDP-A. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
10. INSTALL NEW 30A 480V 3-PHASE GENERATOR PLUG.
11. INSTALL NEW MANUAL TRANSFER SWITCH, SEE ONE-LINE DIAGRAM FOR ADDITIONAL INFORMATION. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
12. INSTALL HANDHOLE FOR CONNECTION OF FUTURE BESS SYSTEM TO FUTURE RESILIENT DISTRIBUTION PANEL RDP-A. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
13. APPROXIMATE LOCATION OF (E) STORM SEWER. TOP OF SEWER APPROXIMATELY 3' B.G.
14. INSTALL HANDHOLE FOR FUTURE POWER OF STORAGE BUILDINGS. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
15. CONDUIT TO BE ROUTED ABOVE CONCRETE FOOTING, BLOCKOUTS WILL BE REQUIRED. COORDINATE EXACT CONDUIT ROUTING AND REQUIREMENTS WITH CIVIL.
16. INSTALL HANDHOLE FOR FUTURE AV OF STORAGE BUILDINGS. FIELD COORDINATE EXACT INSTALLATION LOCATION WITH OWNER.
17. PROVIDE DRIP PAN ABOVE EQUIPMENT.



1 E2.4 **BUILDING EXTERIOR - ELECTRICAL**
SCALE: 1/4" = 1'-0"



2 E2.4 **EQUIPMENT ROOM - ELECTRICAL**
SCALE: 1/2" = 1'-0"

MICROGRID SITE PLAN - PROVIDED FOR REFERENCE ONLY.

MICROGRID INFRASTRUCTURE PROJECT SCOPE PROVISIONS PROVIDED BY PAE AND INCORPORATED INTO CHILLER PLANT UPGRADE DESIGN BY R&W. CONTRACTOR TO REQUEST FULL CHILLER PLANT UPGRADE CURRENT ADDENDUM DESIGN DRAWINGS FROM CITY OF TIGARD FOR COMPLETE SCOPE OF DESIGN.

REV	DATE	DESCRIPTION	BY
0	3/28/2023	ISSUED FOR PERMIT	MDJ
A	9/9/2022	ISSUED FOR EQUIPMENT ORDERING	MDJ

THIS LINE IS 2 INCHES
AT FULL SCALE
IF IT DOES NOT MEASURE 2 INCHES, SCALE ACCORDINGLY

R&W ENGINEERING, INC.
"Engineering Integrated Solutions"
9615 S.W. Allen Blvd., Suite 107
Beaverton, Oregon 97005
Phone: (503) 726-3346
Fax: (503) 726-3326
E-mail: rweng@rweng.com

TIGARD PUBLIC LIBRARY
13500 SW HALL BLVD. TIGARD, OR 97223

ENLARGED FLOOR PLANS - ELECTRICAL

DRAWN:	R&W
CONTACT:	M. FOSTER
PROJECT #:	868.003.001
DATE:	3/3/2023
DRAWING NO.	E2.4
SHEET	6 OF 11

CITY OF TIGARD

Respect and Care | Do the Right Thing | Get it Done

Tigard Resiliency Initiative

Pre-disaster Energy Resiliency Through Microgrids at Three Scales

City Council | July 11, 2023

Background

Initiative developed to apply for the **Building Resilient Infrastructure and Communities** (BRIC), a FEMA grant, to address changing environmental conditions and city priorities:

- **Climate Change** Threats & Cascadia Subduction
- **Emergency Operations Center** Energy Vulnerability
- **Renewable Energy** Development
- **Strategic Plan** Focus on Equitable Development

Tigard Policy Foundation for Initiative

The **Tigard Resiliency and Grants Review Committees** approved the grant application as consistent with policy direction:

- **Emergency Operation Plan 6.6** city priority to fund Emergency Management Operations;
- **Strategic Plan Vision and Priority 3.5.C,** prepare public spaces for changing climate;
- **Comprehensive Plan 13.1 Energy, Policy 5,** city to lead renewable energy development

Grant Development Team

- **City of Tigard:** Initiative development, grant application, and project management, ($11K cash match)
- **PGE**: Delivers and tests grid services: Generation Capacity, Regulation, Load Following, Contingency Reserves, Frequency Response, Distribution Upgrade Deferral, ($25K in-kind engineering)
- **ETO**: Supports clean energy grid edge services, city energy-related policy initiatives, and integration of renewables in city CAPs. ($31K cash match & staff subject matter expertise)
- **PAE** Consulting Engineers (local subject experts)

City of Tigard Stakeholders (share $11K match)

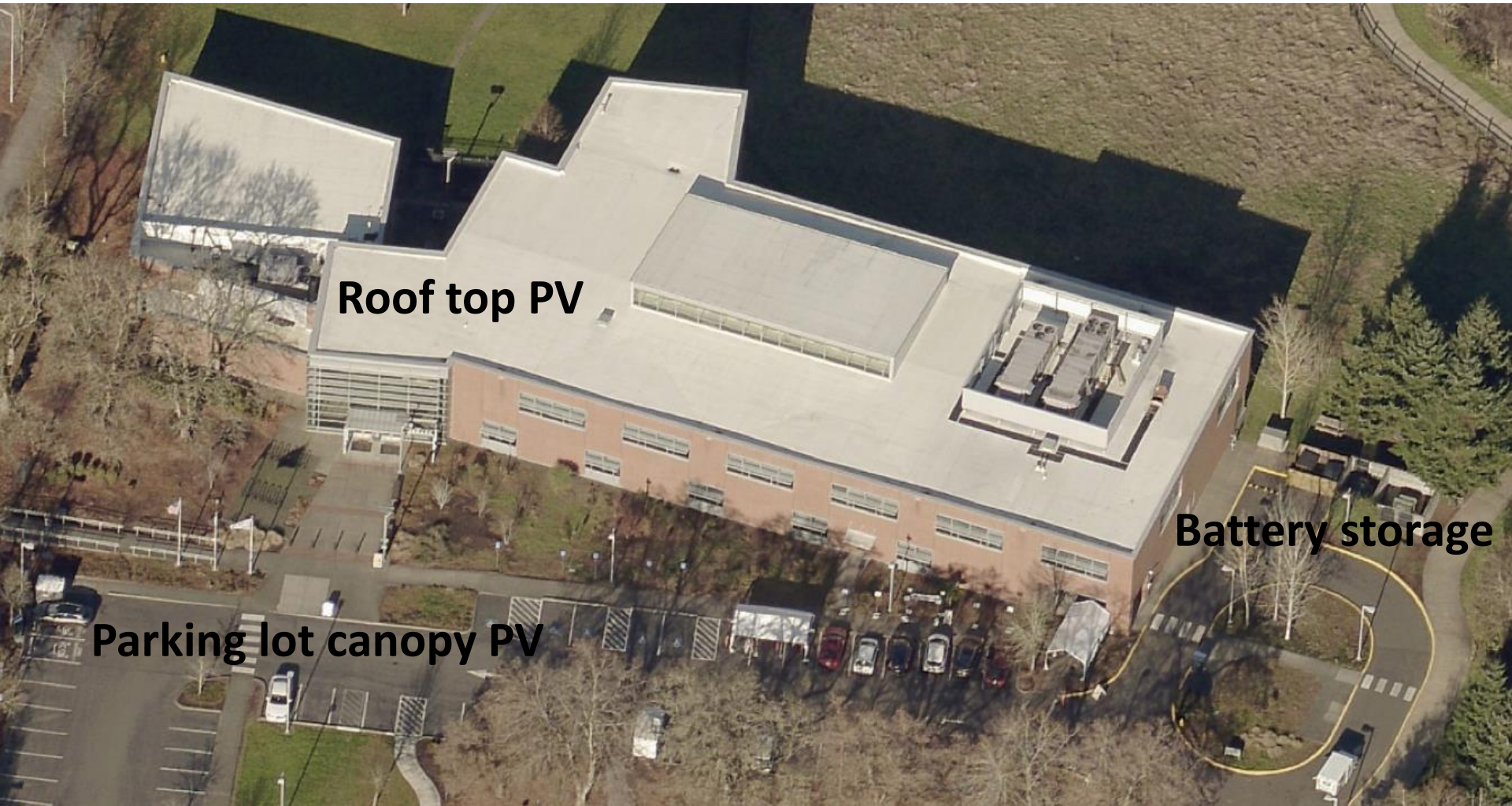
- **Community Development** – Developed Initiative, grant, project management, coordination and engagement
- **Facilities** – Maintains the library building, coordinates improvements to support a microgrid; account for the HVAC upgrade project in system design.
- **Public Works** – Manages public realm infrastructure, Emergency Services, and Parks

Initiative Summary

Three-tier microgrid feasibility analysis:

- **Tier 1 Library:** resilient energy for backup EOC, IT server backup, heating & cooling; from rooftop and parking lot canopy PV, battery storage, and a controller
- **Tier 2 Public Realm**: resilient energy for electronic device and micro mobility charging, and other community services; PV located within suitable ROW, stormwater facilities, parks, bridges, or other infrastructure
- **Tier 3 District-scale**: resilient energy, climate benefits, and economic development for single user or multi-user districts

Tier 1 Library Microgrid



PAE Library Rooftop PV Capacity Analysis



PAE Library Parking Lot Canopy PV Capacity Analysis



Summary of Key PV Capacity Findings

- The **east/west orientation** for the roofs arrays resulted in the highest overall production.
- The addition of **carport solar arrays can more than double the overall production** on the site to improve the resilience.
- Most of the parking spots have **adequate solar access**.
- Sections of the proposed PV carports are impacted by the trees on site and will be subject to a **detailed shading evaluation.**

PAE Tier 1 – Library PV/Battery Microgrid Feasibility

The following scenarios and systems are considered in this report.

Resources:

PHOTO-VOLTAIC PANEL ARRAY SIZE

- Roof Only: 248 kW
- Roof + 5 Carports: 509 kW

BESS SIZE

- Full Battery Support: 250kW/2700 kWh
- Reasonable Battery Support: 250 kW/1320 kWh

Load Profiles:

100% BUILDING LOAD

- All Systems
- All Systems minus Space Conditioning and Hot Water

50% BUILDING LOAD

- All Systems
- All Systems minus Space Conditioning

EOC BUILDING LOAD

Outage Types:

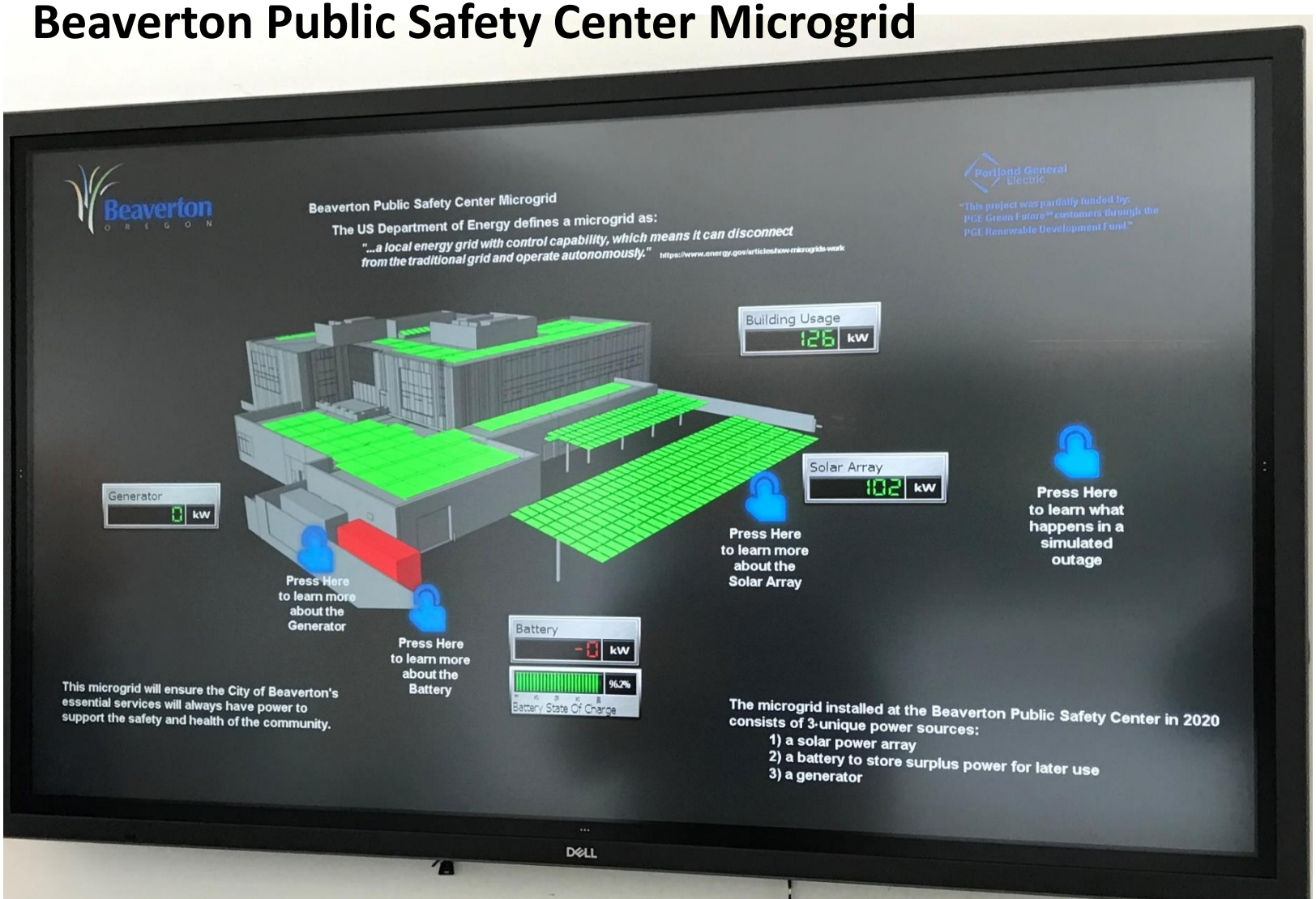
- Typical Outage: 24 Hours
- Major Outage: 7 Days
- Catastrophic Outage: 14+ Days

CONCLUSIONS

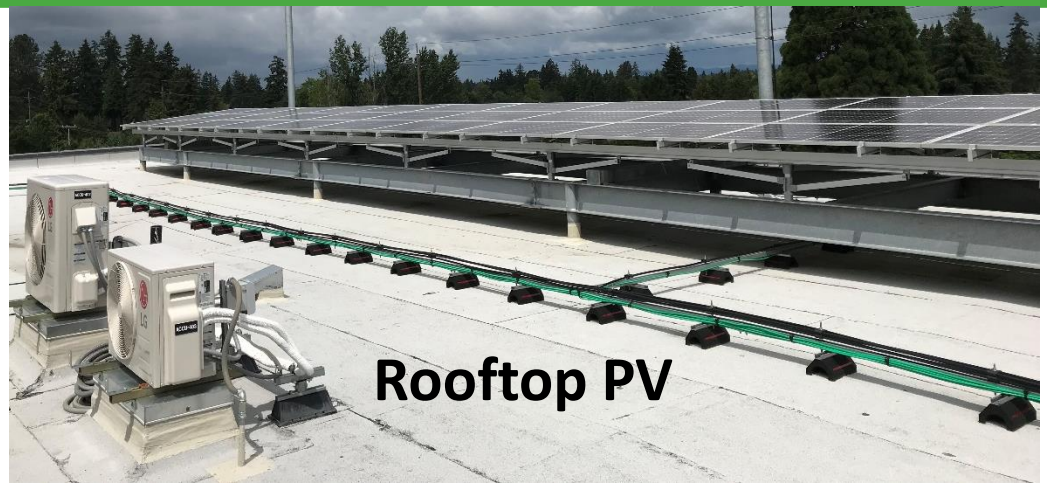
This study found that building a resilience strategy that depends only on PV and BESS creates challenges that will be difficult to overcome and economically limiting. While EOC operation reduces the overall load, the winter months still present a challenge.

This study concludes that a Whole Building resiliency strategy is the most economically feasible and is achievable with a reasonable BESS size coupled with generator support in the winter months.

Beaverton Public Safety Center Microgrid




BEAVERTON PUBLIC SAFETY CENTER
6125
BPSC

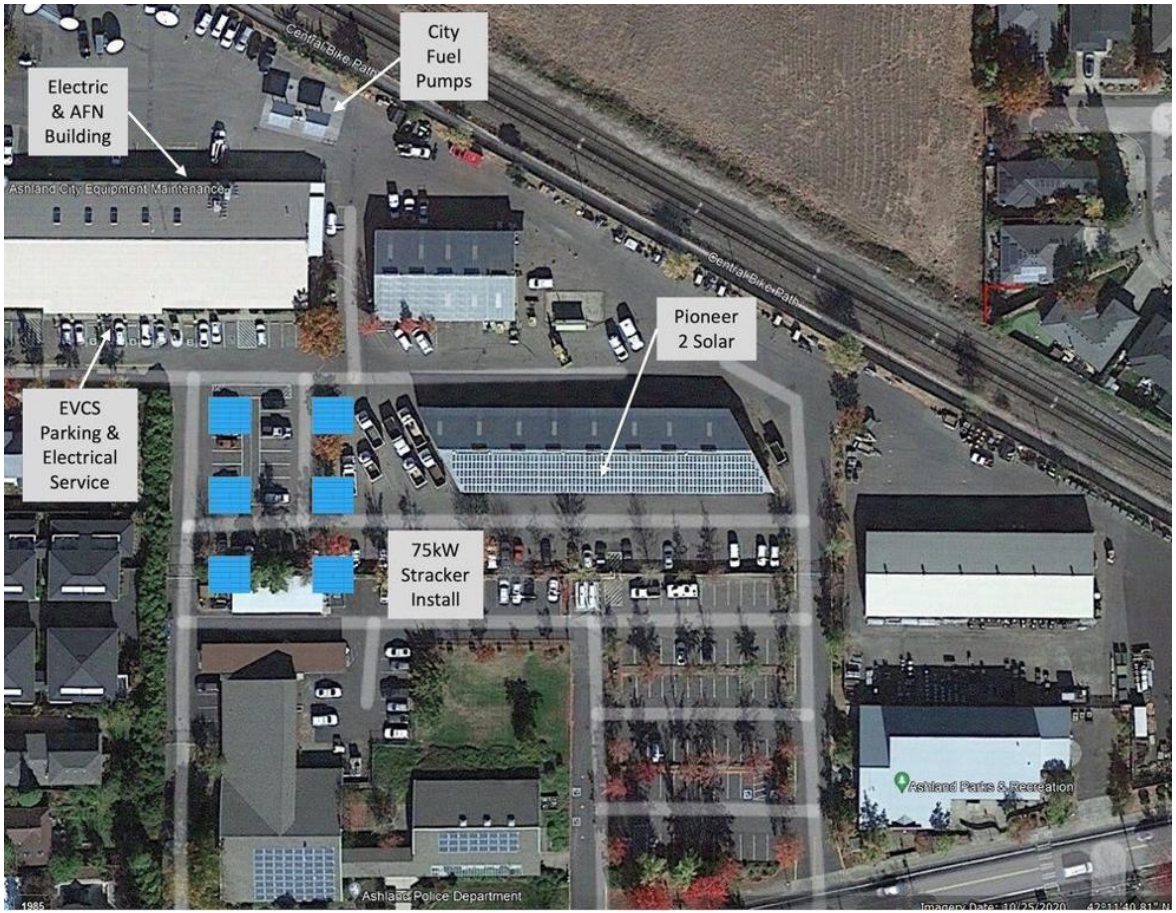

Rooftop PV


Battery energy storage system


Parking lot canopy PV

HB 2021 created a $50 million ODOE fund to provide grants for planning and developing community renewable energy and energy resilience projects.

The $1M ODOE grant for **Ashland's** solar plus battery project will support operation of essential services and continued fueling of city vehicles, including ambulance and fire trucks, in the event of power grid failures, to be built at the City Service Center. (*+SOU*)



The **City of San Diego** is partnering with Gridscape to deploy eight solar microgrids throughout the city (recreation centers, police and fire stations). Project benefits include:

- Backup power during power shut off events
- Leveraging of new energy investments in DAC communities
- Increased emergency capability for neighborhood services
- Reduced greenhouse emissions
- Access to EV charging stations
- Avoided energy cost savings of over $6 million over 25 years (50% grant/50% Shell funded)
- Implements City's Climate action plan and State's GHG emission goals

Tier 1 Next Steps

- **PAE Schematic Design** submitted for ETO Trade Ally pricing.
- **ETO helps clarify roles and responsibilities** for PV design, procurement and installation, and identify funding options
- **I&I/Grants Review Committee** reviews potential next steps
- **Enroll** (potentially) **in PGE DSG Schedule 200 Program** for battery

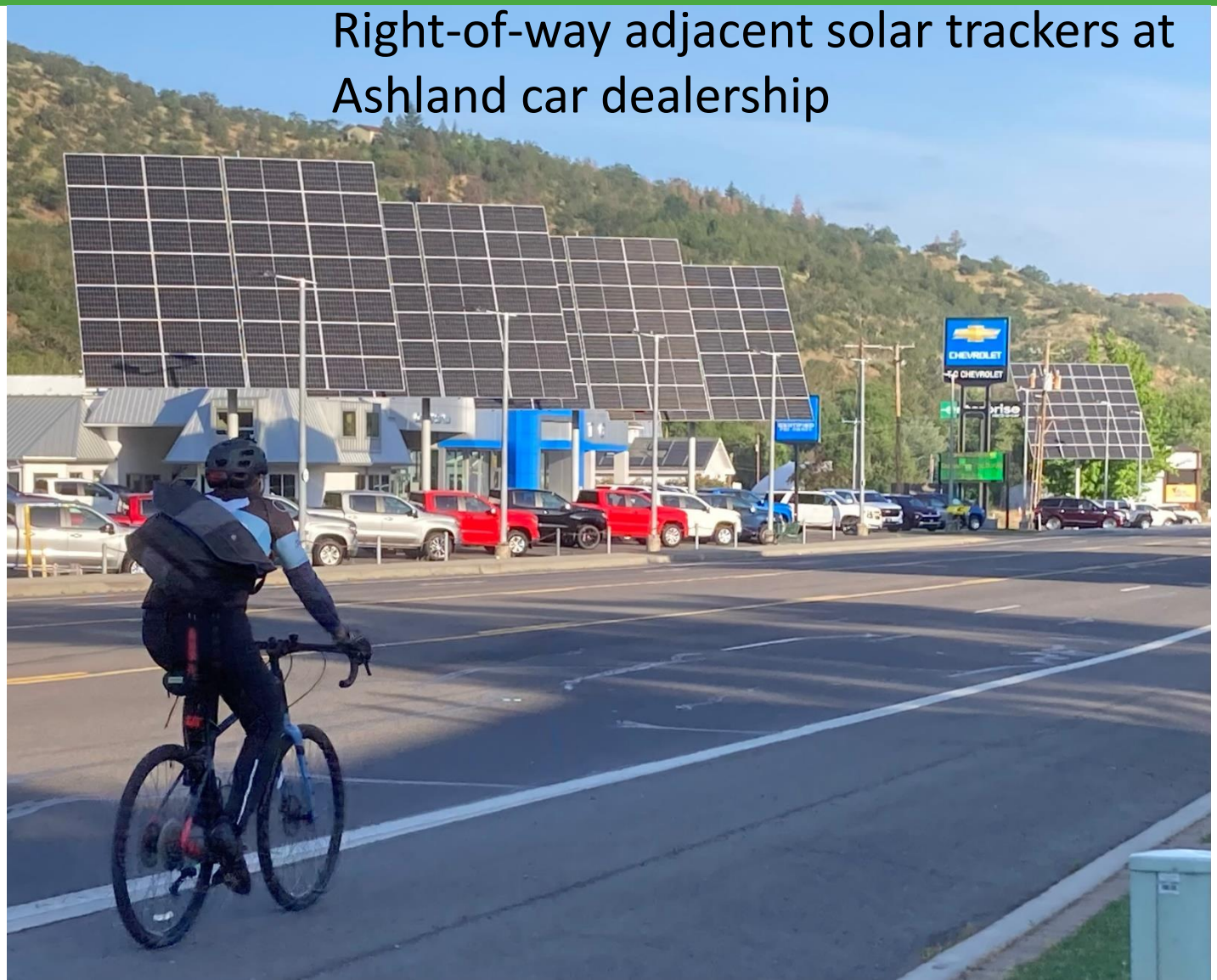
- **City leads** (potentially) with this implementation pilot for the proposed CRP strategy for 50 MW of installed DER capacity by 2035, 160 MW by 2050.

Tier 2 Public Realm Microgrid

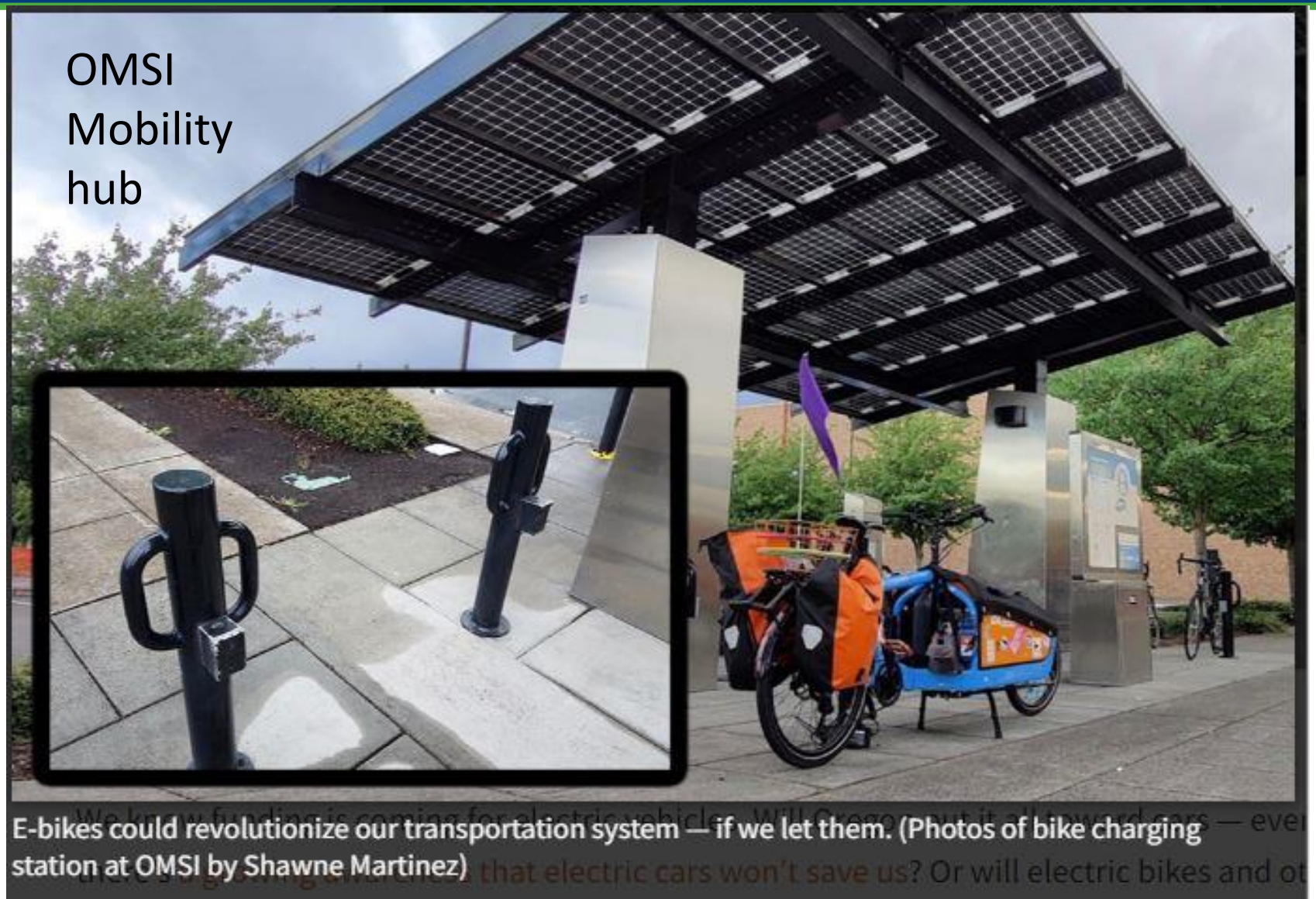
Distributed Energy Resources in Rights-of-way/Stormwater facilities/Parks for resilient publicly accessible energy and services



Right-of-way adjacent solar trackers at Ashland car dealership



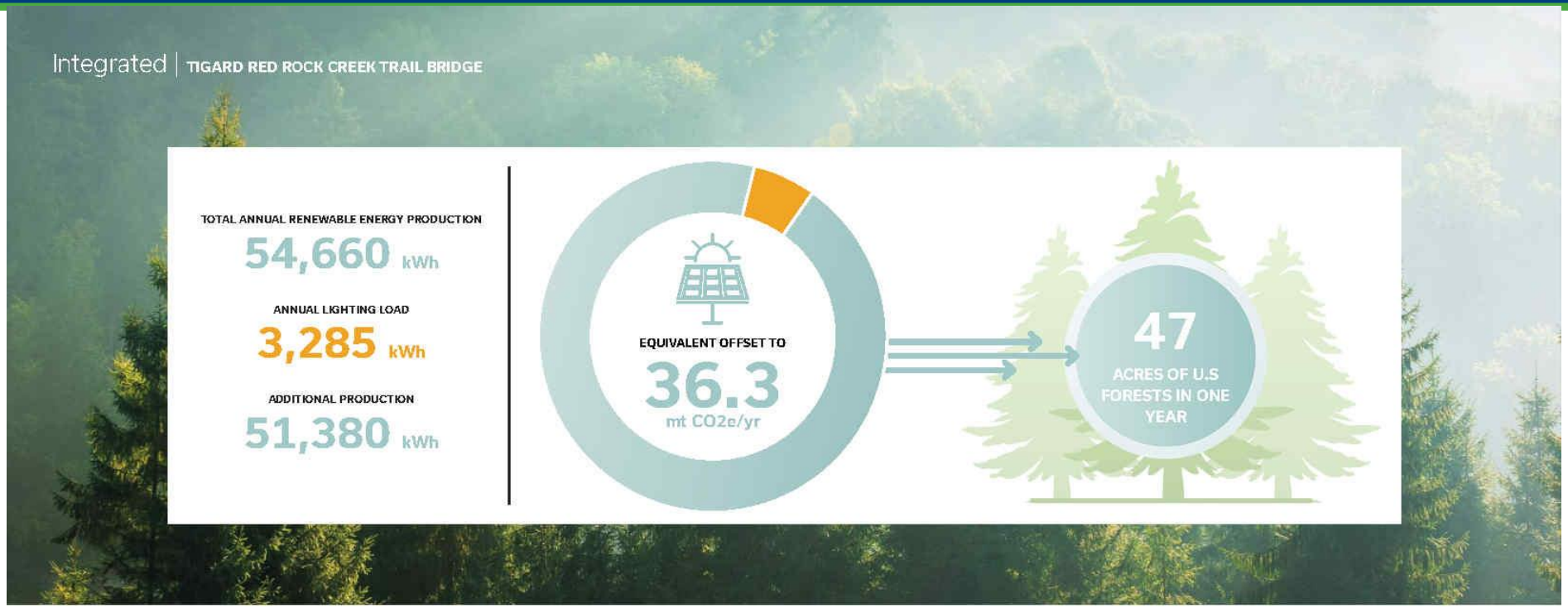

Opens space solar tracker array, Ashland



E-bikes could revolutionize our transportation system — if we let them. (Photos of bike charging station at OMSI by Shawne Martinez)

CITY OF TIGARD

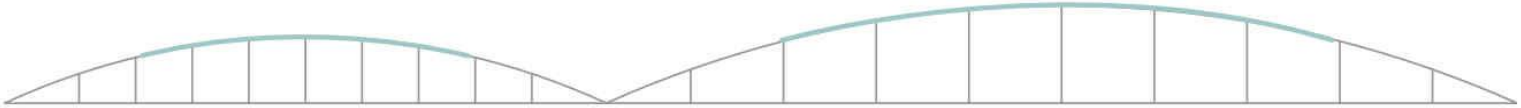
Integrated | TIGARD RED ROCK CREEK TRAIL BRIDGE



PV LAYOUT | PLAN VIEW



PV LAYOUT | SECTION VIEW



INTEGRATED

225 (-135) Degree Azimuth
144 Modules
51.8 Modules 54.7 KW

BASIS OF DESIGN:

OPTION 1:
Panel: Sunpower SPRX22-360-COM-MLSD
Inverter SolarEdge

OPTION 2:
Panel / Microinverter:
Sunpower SPRX22-360-C-AC

SYSTEM COST ESTIMATE:
$300k - $350k*

NOTE

*Cost estimates are based on industry averages and have been provided as information only.



01 PLAN VIEW
NOT TO SCALE



02 VIEW LOOKING SOUTHEAST - ORGANIC STAIRS
NOT TO SCALE



03 VIEW LOOKING NORTH
NOT TO SCALE

RED ROCK CREEK TRAIL PEDESTRIAN BRIDGE | VISUALIZATIONS

G.K. | NOVEMBER 2, 2020 | PROJECT 17052

Otak

Fields Property Area Microgrid/Resiliency Hub Concept




Tigard Resiliency District Tier II
THE FIELDS APARTMENTS
– 5 Buildings
– 4 Stories
– 250,000 SF
– EUI = 45
THE FIELDS APARTMENTS CLUBHOUSE
– 3,500 SF
– EUI = 58
FUTURE TRANSPORTATION HUB
– Covered bike parking and charging
FUTURE OFFICES
– 2 Buildings
– 2 Stories
– 80,000 SF
– EUI = 29
Current
TIER II
RESILIENCE HUB
RESILIENCE HUB
Future
TIER II

Other potentially suitable public realm infrastructure for distributed energy resource and microgrid development:

- Water facilities – storage and well pump sites
- Greenways
- Parks and park facilities
- Public Works facilities and parking lots
- City Hall/Police facilities and parking lots

Tier 2 Next Steps

- **PAE Energy resilience report** summarizing evaluated options for microgrid-supported Resilience Hubs by July 31st
- Fields Apartments and "Trailhead" Property owner engagement and **concept development**
- Potential **planning grant** application with development partner

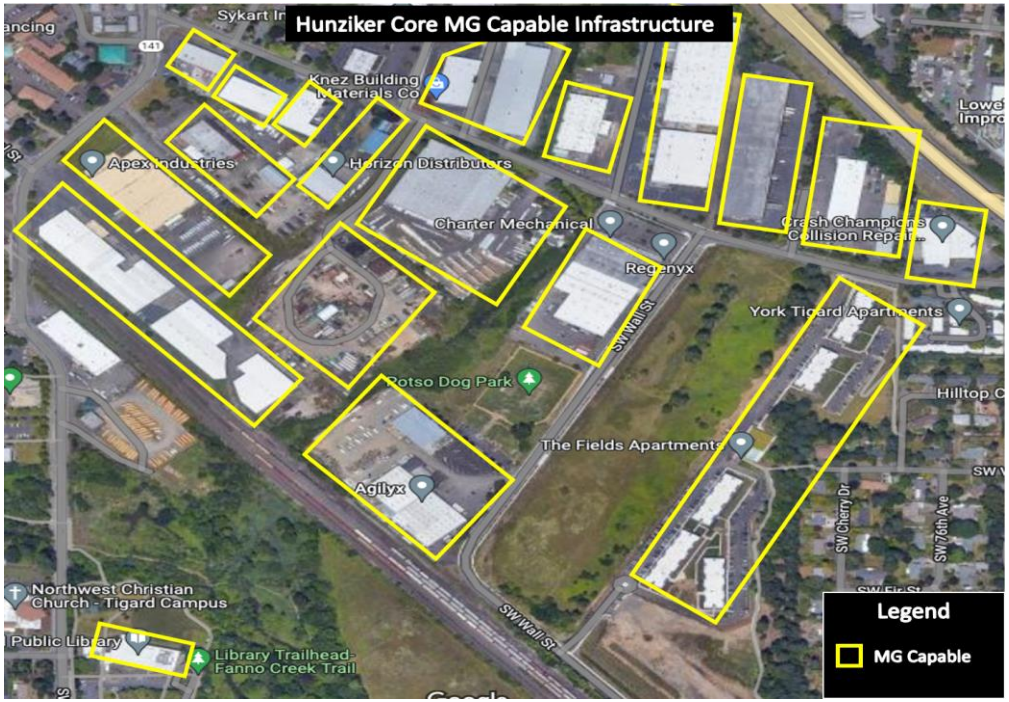
- **City leads** (potentially) with this implementation pilot for the proposed CRP strategy for 50 MW of installed DER capacity by 2035, 160 MW by 2050.

Tier 3 District Microgrid for resiliency, climate benefits, and economic development.

- **Hunziker Core** energy services district concept (multi-owner microgrid) to serve local and adjacent Tigard Town Center urbanization.

*SCYP UO MBA Study characterization as infeasible, currently, due to complexity.

** Aerial view of Hunziker Core showing potential rooftops for solar PV (approximately 1M sf, 15 MW)*



Other potential district-scale microgrid locations:

- **City district** (city-owned property/community solar)
- **Greenburg Neighborhood** (equitable community solar)
- **Tigard Triangle** (big box)
- **Macerich** (single-owner district)
- **PacTrust** (single-owner district)
- **CWS** Sewage treatment district (single-owner, existing)



Durham CWS District



TT Big Box

Greenburg



PacTrust



Macerich



Tier 3 Next Steps

- **PAE high level concept** development for city district microgrid by July 31st.
- **District stakeholder engagement** to identify potential interested parties for microgrid development.
- **Potential planning grant** application for a city resiliency district to further the concept.

- **City leads** (potentially) with this implementation pilot for the proposed CRP strategy for 50 MW of installed DER capacity by 2035, 160 MW by 2050.

Council Consideration

- **Tier 1 Library microgrid** – consider supporting construction grant applications and utility agreements
- **Tier 2 Public Realm microgrid** - consider use of the public realm for distributed energy resources (DER) to meet GHG reduction goals; consider priority uses for resilient energy such as affordable housing, active transportation charging, and critical water infrastructure, etc.
- **Tier 3 District microgrid** – consider exploring the concept of a downtown resiliency district plan.

Questions/Discussion

Tigard Resiliency Initiative
Pre-disaster Energy Resiliency Through Microgrids at Three Scales

AIS-5262 **7.**

Business Meeting

Meeting Date: 07/11/2023

Length (in minutes): 30 Minutes

Agenda Title: Climate Goal Update

Authored By: Kenny Asher

Presented By: Community Development Director Asher & Assistant City Manager Tritsch

Item Type: Update, Discussion, Direct Staff

Public Hearing Legal Ad Required?: No

Publication Date:

Information

EXPLANATION OF ISSUE

The City Council has set a goal to address climate change. This briefing provides information on the status of city efforts to meet this goal, and to invite feedback and direction from the council on efforts for the remainder of 2023.

ACTION REQUESTED

No Council action is requested at this time.

BACKGROUND INFORMATION

The Council's 2022-24 goal to address change seeks to achieve three outcomes: to reduce the city's carbon emissions; to center climate in the council's decision-making; and to develop a shared understanding of climate policy options with the council. Council identified four strategies to achieve these outcomes. These would have the city prioritizing carbon responsibility in City operations, projects, and policies; building understanding on the City's climate work and how the organization is supporting it; providing incentives for the community to transition to more climate friendly choices; and developing educational materials to build awareness while supporting residents in reducing their carbon emissions.

The City of Tigard has been working to advance environmental sustainability and climate action for years. A staff presentation in January of this year enumerated some longstanding and ongoing efforts; this presentation will focus on efforts that have started or progressed since that presentation. A short summary is provided below – these will be elaborated in the presentation and in Q & A.

The Tigard Public Library is improving the energy efficiency of its building and landscaping, and is offering programming and services that support the council strategy to educate and support residents to reduce their carbon emissions. The Library is also making it easier to get to the facility without emitting greenhouse gasses, and to reduce Tigard's waste stream.

In the Public Works area, the Parks Division is also educating Tigard residents about the value of native pollinators plants and nature-scaping that respects native growth, which is building understanding in the organization about resource conservation and species preservation. Recycling water, electrifying equipment, planting trees and monitoring for pests are all efforts to be carbon-responsible in Parks operations. Similarly, the Water and Storm Divisions are also active in education and conservation. Conservation of water resources translates to few leaks in the utility system, and fewer trips due to meter reading. Storm maintenance is done with a new, highly efficient combination cleaning unit. The new equipment reduces trips and fuel consumption due to fewer trips made back and forth to the Public Works yard. The Water team has further advocated for participation in PGE's Green Future Enterprise program in which Tigard's water distribution, the city's largest energy consumer, reduces or removes energy usage at peak periods and sells energy back to the grid.

In Public Works Engineering, carbon emissions are being reduced at Reservoir 18. This is accomplished in a few ways: by leaving earth materials in place on site; decreasing truck trips to and from the site; and reducing runoff/erosion concerns by burying the facility. Similarly, the Streets Division is using recycled asphalt, minimizing fossil fuel reliance and landfill inputs. The Division is utilizing other recycling practices as well, and is overseeing a large street planting program that is helping to sequester carbon and other greenhouse gasses, keeping those pollutants out of our atmosphere and climate.

The Community Development Department is committed to transitioning CD practices toward an ethic of carbon-responsibility.

This means centering emissions reductions in all departmental programs and practices. Some examples of how this is occurring include streamlining the permitting process for solar array installations through the SolSmart certification program; considering a service provider letter from the Energy Trust of Oregon for all Tigard building projects; creating a distributed energy system at the Tigard Public Library and perhaps at a larger scale; participating in the Zero Coalition to support the decarbonization of Oregon's built environment and exploring a Home Energy Score program to help homebuyers and sellers understand home energy use and savings opportunities.

These represent just a sample of the work happening across the city to address climate change. Some of that work is so fundamental to the city's vision, centered as it is on walkability and health, that it is now part and parcel of how the city operates. The Safe Routes to School Program is such an example, as is the backyard habitat program and the slate of bike/ped projects that populate the transportation CIP.

One final note: the Climate Action Report produced for the city in 2022 measured Tigard's baseline emissions at 571,164 tons annually. Staff has determined that this inventory should be updated to track the direction of Tigard's emissions in each sector, given that that several years have passed already. That update should be available by October.

The staff looks forward to sharing more about these and other efforts at the council meeting on July 11.

Previous actions on this topic
March 21, 2023 - City Council adopts its Council Goals for 2023 - 2025
Jan 17, 2023 – Low Carbon Actions briefing to City Council
Oct 25, 2022 - Recommended Low Carbon Actions briefing to City Council
April 2021 – City Council adopted a Climate Resilience Goal which states: Develop and implement a bold community resiliency plan, with the outcome of reducing the carbon footprint in the City.
The internal Community Resilience Plan (CRP) team has provided quarterly updates on progress through 2021 and 2022.

Future Council Considerations
To be determined based on Council direction.

Results of Community Engagement and Outreach
Between interviews, advisory committees, task forces, surveys, and Council testimony, there have been more than 500 touchpoints across the community on climate action topics since January 2022. The majority of the feedback received show a community ready for climate action, particularly mitigation activities, as well as progress on sustainability. The Tigard community has showed up in many ways over the last year to ask City leadership to do more for the environment, and City teammates look forward to working with community to discuss implementing climate actions, from tree planting to changing habits to sharing information with neighbors.

In 2022, the City assembled two Advisory Committees: one technical and one community-based; a BIPOC Task Force was also created by APANO on behalf of this project to gather feedback on proposed actions and planned implementation. In 2023, Community Engagement and Outreach has been conducted at the project and program level. The Advisory Committees from 2022 have not continued as staff considers the best way to re-engage the public on this Council goal.

Impacts to Community, Budget, Policies and Plans
Connection to Strategic Goals:
This briefing directly relates to the Council Goals to Address Climate Change.

Budget Considerations
Pandemic relief funds are available for implementation of climate and community resiliency activities. These are part of the approved 2023-24 budget. Other funds are available to the city through the recent federal packages authorized by the IIJA (infrastructure investment jobs act) and IRA (inflation reduction act). State and regional funding streams including Climate Pollution Reduction Grants from the EPA and Energy Efficiency CDBG (community development block grant) funding are also being tracked.

ALTERNATIVES & RECOMMENDATION

City Council is asked to receive this briefing on the Climate goal.

ADDITIONAL RESOURCES

Climate Goal Update - City Council briefing - 1/17/2023:
https://www.youtube.com/watch?v=CJCjix5dO8E&list=PLMs4T0uiAcvKrP7TGmvqktyP00a0_HwSy&index=18
(starts at 1:11:00)

Recommended Low Carbon Actions briefing to City Council – 10/25/2022:
https://www.youtube.com/watch?v=_wwGEp24t-Q&list=PLMs4T0uiAcvKrP7TGmvqktyP00a0_HwSy&index=7
(start at 22:40)

Meeting materials
:
https://public.destinyhosted.com/agenda_publish.cfm?id=84427&mt=ALL&get_month=10&get_year=2022&dsp=ag&seq=2124

Community Resiliency Plan website:
https://www.tigard-or.gov/community-support/community-resiliency-plan

Climate Hub - For information on rebates and ways for community members to save through energy efficiency:
https://www.tigard-or.gov/community-support/community-resiliency-plan/climate-hub

Climate Action Plan Engage Tigard page: https://www.engage.tigard-or.gov/cap

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Attachments

No file(s) attached.
