



YACHATS RESILIENT CIVIC CAMPUS PLAN

*Community Renewable Energy & Resiliency Planning Project
Made possible with grant funding from the Oregon Department of Energy*

DRAFT | JANUARY 7, 2024

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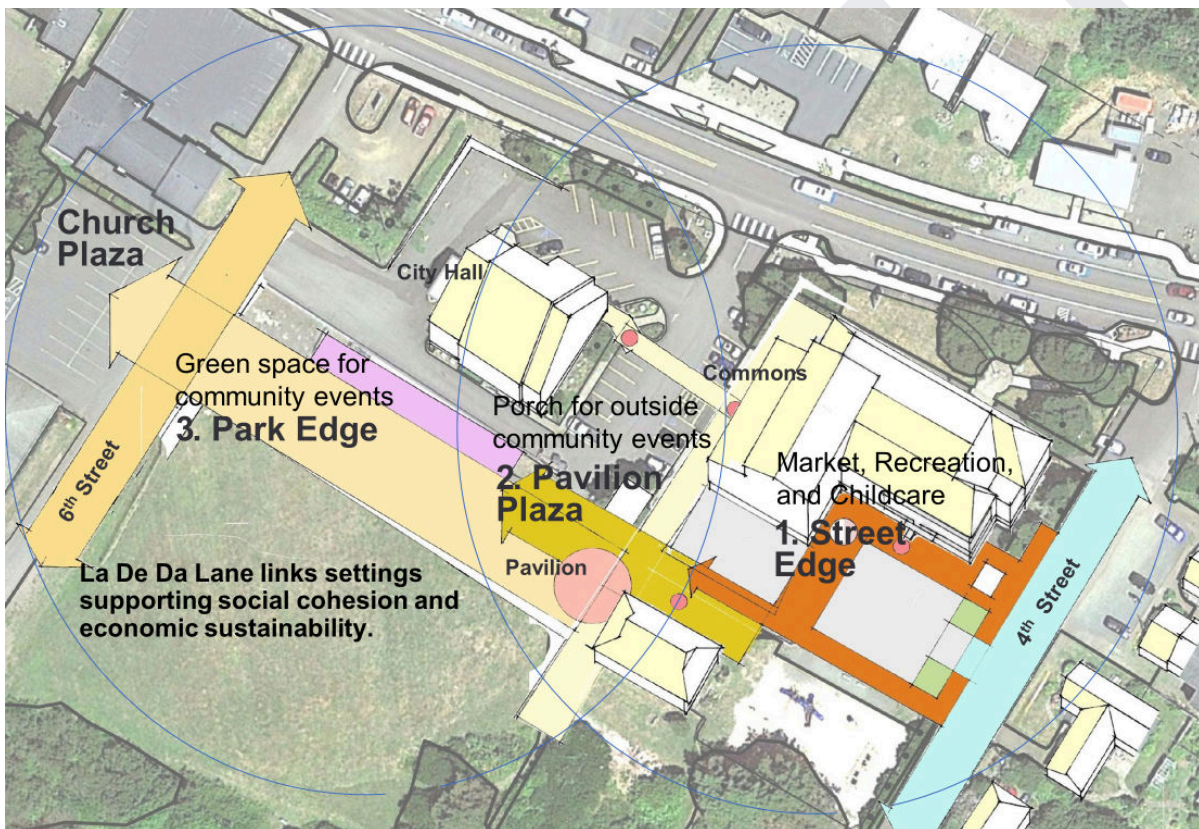
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I. Executive Summary

A Resilient Civic Campus Planning process was conducted by the City of Yachats to convene the community and consider how renewable power could help prepare for hazard events and leverage improvements supporting community resilience. As part of an Oregon Department of Energy (ODOE) Community Renewable Energy Planning (CREP) grant, a core focus of the project has been defining a renewable energy and storage project for the Civic Campus that improves power, communication, and access during and after a hazard event. Through engagement with the community and assessment of the Civic Campus buildings, the value of City Hall, Commons, and Pavilion as a critical location where a command center and refuge is a high priority, and where backup power can be supplied with renewable energy. It is also a place where investments can support economic vitality downtown and cultural events that are critical to the community cohesion which support community resilience.



1. Street Edge



2. Pavilion Plaza



3. Park Edge

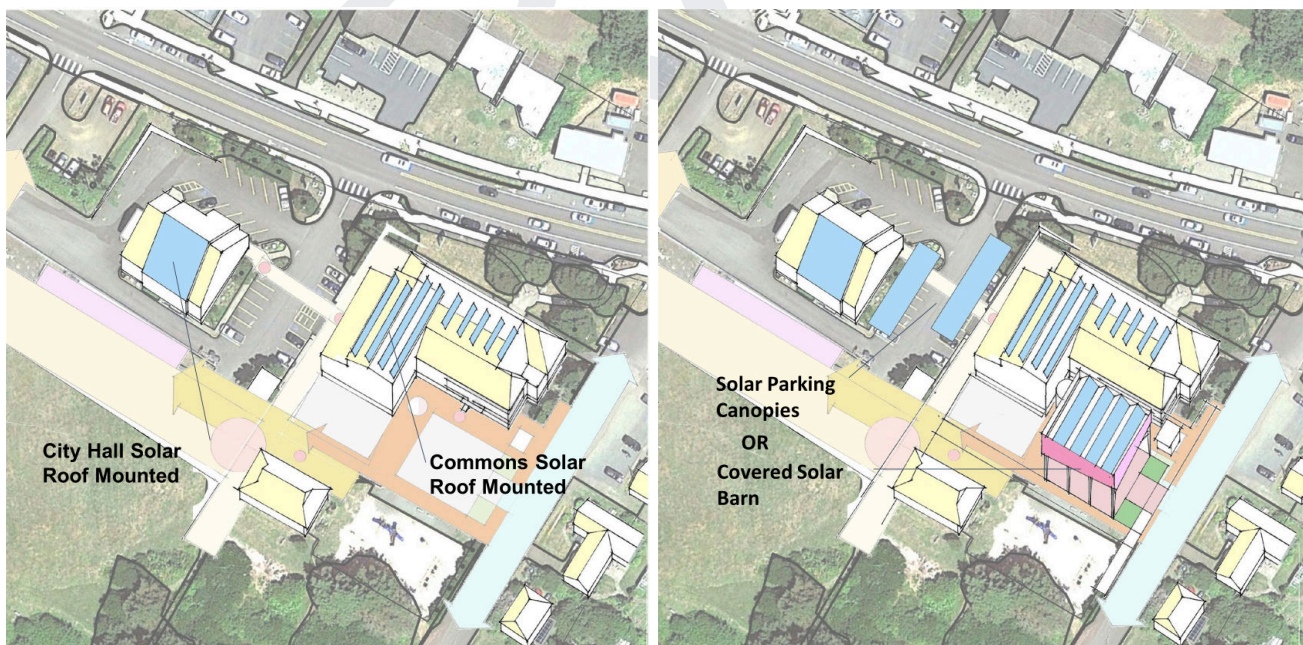
A framework that connects the north and southeast edges of the Civic Campus creating a focus for civic life and a refuge following a hazard event.

During a six month planning process, design and engineering consultants performed extensive assessments of Yachats' "Essential Facilities", made recommendations about potential projects, identified improvements for renewable energy and resiliency, and worked closely with the City and community through a series of public engagement events, advisory groups, survey and other public engagement. This included three large public meetings - a workshop, an in-person open house and an online open house. This outreach concluded that successful resilience projects should promote inclusivity with partners supporting LGBTQ, homelessness, food insecurity, tourism and other organizations on the Oregon Coast who include BIPOC equity outcomes in their mission and provide direct assistance, grant funding, and who can sustain long term partnership agreements with the City of Yachats to those communities.

Resiliency Recommendations

To date, hazard response has largely focused on a large Cascadia seismic event and the corresponding tsunami. A more extensive current understanding of frequent natural hazard events that could significantly disrupt energy systems include smaller Cascadia events, drought-aggravated wildfires, severe winter storms, and landslides. Facilities in the Southeast edge are reasonably located to survive these more frequent hazard events largely intact. This edge already functions as the central gathering spot in Yachats. It is known, accessible, and can provide both shelter and refuge, as well as serve as a communications command center. The primary deficiencies relate to limited back-up power systems. This plan outlines a path for implementing physical and organizational improvements that address these energy system deficiencies, enhance sustainable development in Yachats, and contribute to a growing social vibrancy centered on the Civic Campus.

Priority Project



Priority Project 78% of Power Need

Subsequent Project 100% of Power Need

With guidance from the Yachats Resilience Civic Campus Plan Advisory Committee, the plan identifies a priority project that establishes the electrical infrastructure needed to connect the Pavilion, City Hall, and Commons and to share renewable energy generation and back-up power up to 78% of the power needed on a yearly basis. It includes batteries and diesel generators to support power demand during the winter, when access to the sun's rays is limited. Citywide investments that anticipate power outage, communications, and access to caches, water, medical care, and hygiene facilities were identified for subsequent action.

An initial recommended priority project has been defined and documented in some detail. This project interconnects the electrical systems of all three facilities in the Southeast edge, upgrades existing panels and generator in the Commons, implements energy efficiency measures in both buildings, and installs a solar photovoltaic system to serve the entire edge with renewable energy. This initial project is recommended as a viable project to submit for subsequent grant funding. It is anticipated to provide up to 78% of the annual electricity needs of the Southeast Campus edge and to work in conjunction with the existing generator to provide adequate back-up power during an extended power outage. Solar panels would be installed on rooftop areas of both the City Hall and Commons buildings, and with an interconnected Pavillion, all three facilities can function to share power to support the community during an extended power outage.

“ Resilience doesn't just mean emergency planning. Resilience comes from the sustainability, economic vitality, and health of our Community “

– Heard During Open House 1.

An extensive community outreach engagement and facility assessment effort was undertaken to identify the community needs, identify initial responses, and populate the recommendations contained within this plan. The table below (next page) organizes the most significant findings inclusive and exclusive of the recommended priority project.

The plan framework presents resiliency recommendations at three scales: Citywide, Civic Campus, and Building. This framework includes goals, objectives, guidelines, and criteria. It also includes recommendations for building City organizational capacity and community partnerships that can translate to project implementation success.

As can be understood, investment in resiliency for the City will be ongoing over many years. This plan is intended to be a living document. It identifies and recommends a way to get started, and a number of possible paths to continue that investment after an initial project. It also provides a roadmap and process framework to navigate those paths. City leadership and engaged citizens are strongly encouraged to make use of this as a meaningful planning tool.

| CITYWIDE INTEGRATED SYSTEMS | Where & How Much | Resiliency Value |
|-----------------------------|--|---|
| Basic Needs | Possible Location | Role |
| Refuge | Civic Campus Commons, City Hall, Church, Library etc | Shelter, warmth, |
| Energy Generation | Civic Campus Buildings | Power |
| Fuel Storage | Fire Station | Power, Diversity of Back up power |
| Fire Protection | Fire Station | Life Safety |
| Caches | Citywide, South of Bridge | Emergency Supplies |
| Water Filtration & Storage | South Edge Civic Campus, South of Bridge | Clean Water |
| Central Distribution Center | South Edge Civic Campus City Hall & Commons | Access to Food & Water |
| Mobile Generators | North Edge Civic Campus WWTP (& City Hall/Commons?) | Access to power |
| Information Center | Civic Campus, Kiosk near 4th | Tourism, Communication |
| Satellite phones, radios | City Hall, WWTP | Communication |
| Mobile Batteries Devices | North Edge Civic Campus WWTP (& City Hall/Commons?) | Access to Power |
| Refrigeration | Commons | Access to Food |
| Access - Bikes & Peds | Trails | Access |
| Vehicle Charging | Bike & EV Charging, City Fleet at WWTP | Batteries, tourism amenity, City fleet |
| Hygiene | Restroom Kiosk at Civic Campus South Edge | Hygiene |
| Training | City Hall/Commons Annual Event | Emergency Preparedness, Education |
| Signage | Trails, Meeting Points, Civic Campus Signage, Reader Board | Communication, Tourism, Education, Wayfinding |
| Medical Supplies | Caches, City Hall, Commons | Life Safety |
| Lighting | Trailheads, wayfinding to refuge & meeting points | Access, Communication, Wayfinding |

The implementation of this plan makes a network of improvements that enriches the community and provides resilience to hazard events.

The needs and ideas originating from the community are incorporated into the assessment, planning, and implementation elements of this plan. It is intended to be a tool to be used to help consider good ideas, plan improvements, and build partnerships to advance investments that provide resilience in Yachats across the entire City. Appendices are referenced providing back up information supporting the plan elements.



II. ACKNOWLEDGEMENTS

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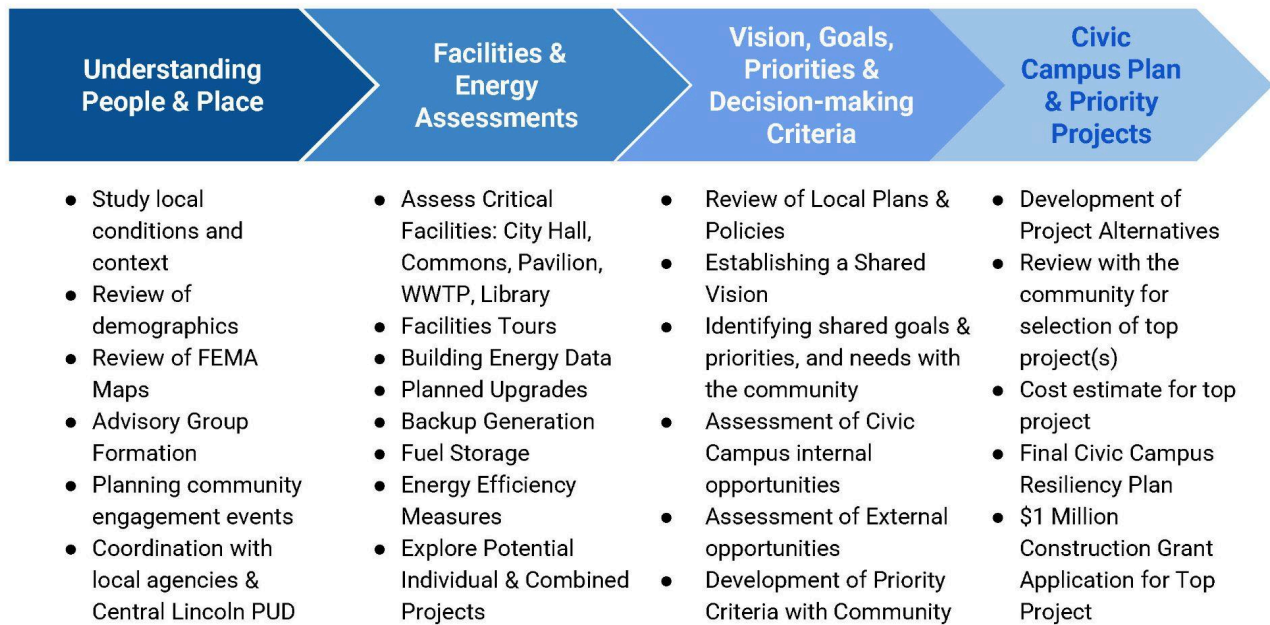
III. INTRODUCTION

Project Overview

In May 2023, The Oregon Department of Energy (ODOE) awarded the City of Yachats a \$100,000 Community Renewable Energy Project (CREP) planning grant. This grant funded a process to identify needs and priorities that support a more resilient Civic Campus. The following plan describes what was learned during the site and facility assessments, and the planning and community engagement process. The plan also identifies both Citywide and Civic Campus priorities and provides a guide for subsequent City policy action, grant funding, and physical improvement.

Over six months, beginning in August 2023, the design and planning consultants performed extensive facility assessments of relevant City of Yachats facilities. During this same time period, a series of public engagement outreach efforts were organized including advisory groups, public surveys, and three large public meetings - a workshop, an in-person open house and an online open house. Assessment findings combined with information collected during public outreach has translated to recommendations about potential future projects that are presented within this plan, along with documentation of the underpinning findings and outreach feedback.

The following is an overview of project process and planning steps to determine core priorities, opportunities, and key criteria for decision-making, selection of priority projects, and a final plan.



This plan summarizes:

- Priorities to promote resilience at three scales – citywide, Civic Campus, and individual buildings.
- Frameworks to make decisions about renewable power generation and energy storage projects that align planned improvements with identified Civic Campus recommendations.
- Project opportunities to invest in building durable power generation system projects such as photovoltaic systems, battery storage, and supporting electrical system infrastructure upgrades, that enhance the current systems that rely solely on utility power and limited diesel generator back-up.

How to Use this Document

As information was collected during the community engagement processes and meeting with the Advisory Group, it was organized into a plan document that can be used to guide decision-making on future Civic Campus projects that support resiliency projects. Ideally, these projects will position the City of Yachats to respond and recover from future hazard events, develop and construct renewable energy infrastructure, and advance local social and economic outcomes. Candidate projects should be evaluated to see how well they align with the goals, objectives, goals, guidelines, and criteria as identified within this plan. Using this plan as a contributory decision-making tool, the Civic Campus can achieve its full potential overtime as each project is considered, located, funded, designed, constructed, and operated. **Please see: Section V and Appendix D Final: 2.5 Criteria for Renewable and Resilient Energy**

Generalized steps to use this plan as a decision-making tool would involve the following.

1. Consider how a potential project supports Citywide, Civic Campus, or Building Scale Energy and Resiliency Criteria.
2. Respond to applicable objectives, goals, and guidelines to determine if there is a link between scales that might leverage social and economic outcomes that support resilience.
3. Consider how the project reinforces the Concept for public spaces linked along La De Da Lane which connects north and southeast edges.

Project Purpose

The purpose of this project is to define a number of potential renewable energy and storage projects for the Civic Campus that support citywide community resilience in power, communication, and access during and after a hazard event. In addition, a framework has been developed that can be used to identify and evaluate future projects that are not yet defined. Ultimately, a key deliverable for this project is to recommend and support decision-making on a priority project that can be considered for near-term follow-up construction grant funding by ODOE. Specifically, this CREP planning grant for a “Resilient Civic Campus” project provided support for:

1. **Technical studies** for building and site energy analysis.
2. **Planning to provide renewable power and hazard preparedness** to reduce risks.
3. **Community involvement** to identify priorities, needs and criteria for decision-making.
4. **Planning and selection of a renewable energy project** for a Phase 2 - \$1 million ODOE construction grant.

In general, the planning process was structured and executed to identify community-oriented criteria that should be considered for emergency preparedness that promotes resilience. These criteria translate to a number of more specific project strategies including but not limited to those that:

1. Allow the Civic Campus to provide power to needed community services after high-risk hazards occur.
2. Identify and plan for needed Civic Campus facility upgrades and public space improvements
3. Improve communication about emergency response and preparedness (e.g. signage).
4. Leverage emergency preparedness benefits with services that are needed day to day.
(Example: Plan for City to support EV charging of their vehicle fleet.)

Project Goals

During engagement with stakeholders and community at large, a number of goals related to community resilience were identified that connected the Civic Campus to further citywide goals.

Overarching emergent goals are to:

1. Be inclusive of all communities who would use the services provided in the Civic Campus following a power outage or other hazard event.
2. Provide an emergency response center in the Civic Campus with durable power for communication and access to services.
3. Build capacity for the areas south of the Yachats River in case they are cut off from the services provided in the Civic Campus.
4. Support public works efforts to provide and improve existing diesel and gasoline-powered emergency generation capability to maintain sewer and water system pump and lift stations.
5. Balance the electrical energy needs within the North and Southeast edges of the Civic Campus with the availability of renewable power to minimize diesel and gasoline use during an extended power outage.



Context Map

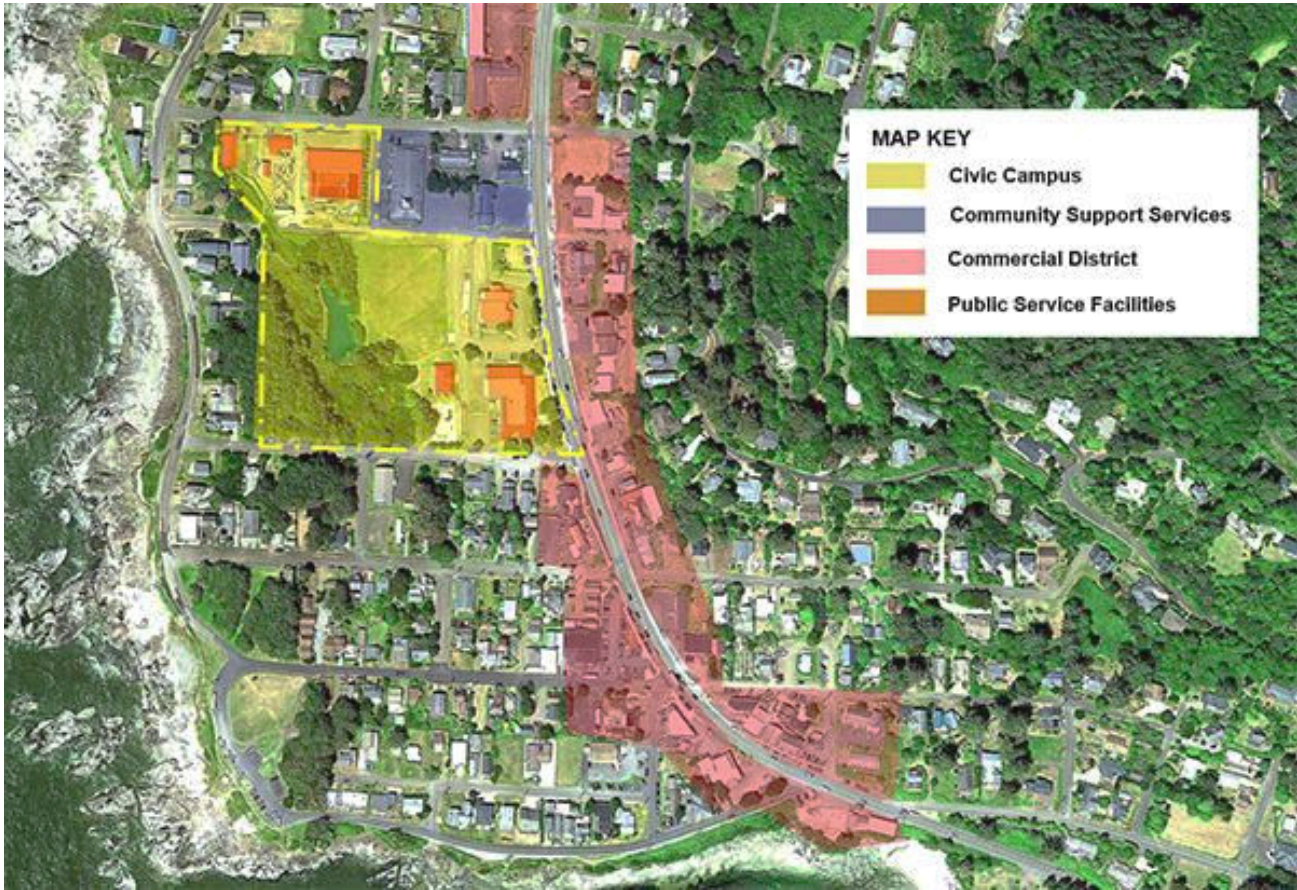
See Section V for a more detailed listing of goals at each of three community scales.

“Yachats is in a very isolated location that is vulnerable to disasters like we are seeing more and more all over the world. This project can make us safer and more secure.”

– Rick Sant, Yachats Interim City Manager

Civic Campus Context & Conditions

Yachats is a small coastal town near the Southern boundary of Lincoln County and similar to many of Oregon's coastal communities is bisected by Highway 101; the Pacific Ocean to the West and its Coastal Range geography starting immediately to the East. Yachats is also bisected North and South by its river and small tidal basin of the same name. The Siuslaw National Forest at over 630,000 acres, surrounds the community to the North, East and South.



Today, Yachats is a beloved and picturesque City. It is a community that recognizes its history and the value of this place on the coast to serve the many people who rely on it for family, social events, childcare, employment, recreation, and a refuge from hazard events. The area is host to many natural resources, public trails and cultural sites. However, its history also encompasses the brutal displacement of the indigenous people from the coast to internment facilities that were located within the boundary of the City that continues to traumatize that remaining community. This plan recognizes that there will be opportunities to leverage both energy resilience and cultural resilience. It encourages creative ways to build on current reconciliation efforts. Project scope elements that demonstrate sustainable design features and foster greater social cohesion shall include respectful signage and interpretive information about the people and cultures in this place in the past, the present and future.

The central focus of this renewable energy and resiliency planning project is the 15-acre Civic Campus located in the figure to the right. This area includes the City Hall, public Library, Wastewater Treatment Plant (WWTP) and public works shops, Community Presbyterian Church, Park Pavilion, community park, and a Community Center (Yachats Commons). The latter is a shared social, childcare, meeting space and performance venue. This location is also in the heart of the business district with shopping, restaurants, lodging and recreation all within walking distance. The Civic Campus is envisioned to function both as refuge for the community during hazard events and as the organizational locus for civic response and recovery support. The civic buildings - City Hall, Commons, WWTP and the Library - all have designated roles that are critical to respond to emergencies and hazard events. The private facility (Presbyterian Church) currently supports key community resilience activities such as providing sleep and hygiene facilities for the homeless population, providing educational support for home-schooled children, and a community food pantry.

Policy and Design Context, Vision, Goals and Background

Understanding and shaping the approach first considered the site context and conditions as well as the role of the Civic Campus for resilience in relation to the City of Yachats as a whole. It also considered: existing City policies, vision and goals, related mapping of hazards and emergency plans, cultural history and recent or planned City projects.

Policy and planning documents consulted in the process of developing the Resilient Civic Campus Plan and projects included the following:

- [2019 City of Yachats Comprehensive Plan](#)
- [Yachats Addendum to Lincoln County Hazard Mitigation Plan](#)
- [Yachats Area Strategic Plan \(1996\)](#)
- [Yachats Park Master Plan](#)
- Parks & Commons Survey responses
- 2023 Parks Plan Request for Proposals (RFP)
- [Yachats Emergency Operations Plan](#)
- [Capital Improvement Plans \(CIP\)](#)
- View the Future (VTF) Vision & [Cultural History](#)
- Hazard mapping & risk index
- [Yachats Evacuation Routes](#)
- [History of the Yachats Community Park & Wetlands \(2015\)](#)
- [Commons Policy Manual \(2019\)](#)
- [Oregon Resilience Plan \(2013\)](#)

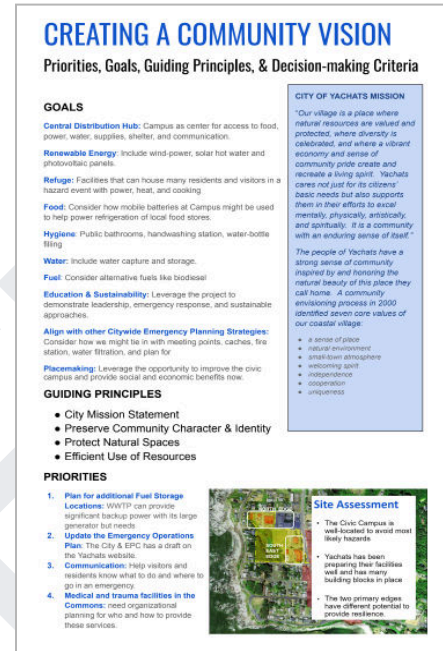


Image: Vision, Goals & Priorities Poster from the 11/16/23 Open House

Citywide Context: Resiliency & Emergency Response

As it is remotely located, Yachats serves as a regional center of essential services for Lincoln County's disaster response and is at the most southerly end of electric utility service. A byproduct of being at the end of the line is that an interruption of power elsewhere on the Utility grid could result in extended power outages to the Community. Power outage of up to a day are routine and are considered part of daily life at the Coast but outages of longer duration puts a strain on Community resources and the most vulnerable members of the Community. The Civic Campus was selected as the primary focus of this resiliency planning project because so many of the area's "Critical Service Facilities" are centrally located in this area.

Additional essential emergency response facilities include the Fire Station, tsunami evacuation routes and community meeting points, disaster response caches with storage of supplies, food, and equipment. The Emergency Preparedness Committee has identified that two existing Disaster Response Caches need replacement due to age and additional caches have been deemed necessary to protect the community more fully in case of a catastrophic event. Existing cache locations are not easily accessed. A need for community gathering points on both the north and south side of the bridge has been identified. Water, food and power needs to be reliable at these gathering points, as they will become the assembly place during a tsunami event.

The Wastewater Treatment Plant has the opportunity to fill a separate resiliency need in the Community. Having a service voltage of 480 volts and a large backup generator makes the plant the logical location for charging of electric vehicles for the City as well as charging of portable battery packs that can be employed at a variety of locations in the Community. In this scenario, work at the Wastewater Treatment Plant will play the largest single role in meeting resiliency needs in the Community. It was not identified as the priority project because the City is not currently in the position to invest in electric vehicles and larger scale inverter and battery systems are still in the development stage.

Yachats has an extensive trail network that is well known to locals for access to refuge and higher elevation meeting points if roads are not passable. Given the average age of residents in Yachats many cannot use the trails system and will be in need of assistance. These trails may not be as familiar to the crowds of tourists that flock to Yachats for its coastal amenities, natural resources, small village charm and small businesses as well as abundant cultural events. While there is extensive tsunami signage for motorists and non-motorists, there is less information about other potentially more frequent hazards nor where and how to respond for safety, shelter and assistance. Opportunities exist to expand information awareness and information through travel and tourism bureaus, hotels and short term rentals, wayfinding signage, training and upgraded facilities to increase resiliency preparedness and make residents and visitors more secure in an unplanned event.

Campus Context: Central location for Community Access, Activities & Services

The Civic Campus is located in the heart of Yachats’ central business district. It features a beloved public park with large green space, walking paths and wetland trails, public library, and WasteWater Treatment Plant, nearby church facilities also provide emergency response and houses a small transitional housing pod of tiny homes for houseless individuals. The Civic Campus is a hub of community life with regular festivals and events held at The Commons which houses a child care center for [Yachats Youth and Family Activities Program](#), and meeting spaces for City commissions. This is located in the Southern edge of the campus and close to a playground, picnic shelter. The City Hall (also known as the “501 Building”) also provides public services, city offices, and the location for a central command center in times of emergencies.



A description of the site from the 2023 Parks Plan RFP includes a summary of the Civic Campus site as follows:

“The open space is approximately 180’ x 200’. To the north is a road, church parking and the city sewage plant, the west is bounded by a restored wetland, the south is a path, greenspace, an enclosed outdoor pavilion and a small open space, the east [] a planned access road and parking. Across that road is a skate park abutting the City Hall and the Commons Community Center.”

Resiliency Response: Increasing Access, Power & Communications

Yachats is vulnerable to natural disasters and severe weather events causing power outages. Adding renewable power in the Civic Campus was identified as an important opportunity to increase access to durable power and back-up batteries, increase spaces for shelter and refuge that can serve a greater population and improve services and amenities the community needs on a day to day basis. Because of its central location, the Civic Campus is well suited to increase awareness and access to emergency response and preparedness information, provide access to reliable power for device charging and communications, and safe accessible locations to connect with local disaster responders in case of hazards and other emergencies such as powerful storms, fires, and mudslides.

Refuge and Emergency Response

The Commons, the Presbyterian Church, City Hall and Library are already designated as spaces for refuge and shelter in times of need. The Park Pavilion, although not fully enclosed, can also provide additional support for refuge. The Commons and the Wastewater Treatment Plant are both served by backup diesel-fired generators.

Yachats Hazards and Emergency Response Needs

The Emergency Preparedness Committee has been grappling with the existential Cascadia Seismic event to locate powered emergency supply caches above Highway 101. They are anticipating how to recover from a 1,500 year seismic event that would produce a 9 + magnitude earthquake followed 15 minutes later by a large tsunami which would wash up approximately 30' above Highway 101 along 6th Street. More recently, the adoption of the City of Yachats Addendum to the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan (NHMP) on January 25, 2021. This represents a five year plan to address hazard events through December 2025.

This plan was developed by the City of Yachats NHMP Steering Committee (2020). This plan elevates Top Tier Hazards ranked in the following order.

CITYWIDE CONTEXT | How Might we Advance Goals & Priorities with this "Resilient Civic Campus Plan"?

Role of the Civic Campus
During and after a hazard event. What is the role of the Civic Campus and what service is most important?

Access to services and caches?
Communication with other community members?
Power and charge systems ?

Legend:
Fuel Storage
Water Pump + Battery Storage
Meet Up Area
Mobile Storage Charging
EV Charging

Civic Campus + City
Renewable energy opportunities to provide the community enhanced power, communication and access to resources following a disruption

| | | |
|--|--|--|
| Power <ul style="list-style-type: none">SolarGround SourceBattery Storage | Communication <ul style="list-style-type: none">CellWi-FiSatelliteData | Access <ul style="list-style-type: none">Bike and Walking AccessADAShared TransportEV Charging |
|--|--|--|

Table YA-2 Hazard Analysis Matrix – City of Yachats

| Hazard | Maximum | | | | Total Threat Score | Hazard Rank | Hazard Tiers |
|-------------------------|---------|---------------|--------|-------------|--------------------|-------------|--------------|
| | History | Vulnerability | Threat | Probability | | | |
| Drought | 20 | 50 | 100 | 70 | 240 | #1 | Top Tier |
| Windstorm | 20 | 50 | 100 | 70 | 240 | #1 | |
| Landslide | 20 | 40 | 100 | 70 | 230 | #3 | |
| Winter Storm (Snow/Ice) | 18 | 40 | 100 | 70 | 228 | #4 | |
| Earthquake (Cascadia) | 10 | 50 | 100 | 49 | 209 | #5 | |
| Tsunami (Local) | 2 | 50 | 100 | 49 | 201 | #6 | Middle Tier |
| Flood (Riverine) | 20 | 35 | 50 | 70 | 175 | #7 | |
| Wildfire | 10 | 35 | 70 | 56 | 171 | #8 | |
| Flood (Coastal) | 20 | 25 | 50 | 70 | 165 | #9 | |
| Coastal Erosion | 20 | 15 | 50 | 49 | 134 | #10 | Bottom Tier |
| Earthquake (Crustal) | 10 | 20 | 40 | 42 | 112 | #11 | |
| Tornado | 8 | 10 | 30 | 56 | 104 | #12 | |
| Tsunami (Distant) | 10 | 15 | 30 | 35 | 90 | #13 | |
| Volcanic Events | 2 | 5 | 40 | 7 | 54 | #14 | |

Source: City of Yachats NHMP Steering Committee (2020)

Image: Hazard Matrix. City of Yachats Addendum to the Lincoln County Multi-Jurisdictional Natural Hazard Mitigation Plan, adopted on January 25, 2021. [Volume-II---Yachats-Addendum-PDF \(lincoln.or.us\)](#)

Due to climate change, increasing severity and more frequent hazard events periodically disrupt access, communication, and power in various parts of the Western United States. Most frequent hazards involving power outages in and around Yachats are anticipated to include:

- Drought and Fire Induced Power Outages
- Windstorm Induced Power Outages
- Landslide Induced Power Outages

These disruptions have been determined to involve increasingly longer outages to power. It is important to note, that because the City is connected to the larger electrical grid with a single power line, events outside the Yachats region can result in extended power outage to the community. This planning process assumes that there may be up to a three month power outage for a variety of reasons. Further, it has been acknowledged that in the event of a serious extended power outage, it is likely that Yachats would regain electrical service only after the larger cities in the utility service area are operational.

Facilities in the Civic Campus provide a refuge:

1. **from anticipated seismic** event frequency within 425 to 525 years up to a Cascadia magnitude 8.9 earthquake.
2. **from anticipated landslides.**
3. **from fire.**
4. **with emergency power as** provided currently in both the Commons and the Wastewater Treatment Plant. Reliability of these facilities can be improved with photovoltaic panels, battery storage, and increase in fuel storage.

(See Appendix C. Community & Project Parameters, Hazard section for additional information.)

Community Involvement

Public Outreach & Community Involvement Methods

The process to engage the Yachats community included extensive outreach efforts. Most significant among these were three large public meetings (one workshop and two open houses) as further indicated in the poster images below (next page). Outreach also included creation of a project webpage hosted on the city site, press releases distributed on the project webpage and to news outlets, local news articles, fliers and posters distributed at local businesses and bulletin boards as well as social media, and a community visioning and priorities survey. Prior to each public meeting and afterwards, a press release with a summary of the meeting key takeaways was posted on the City's website, shared with the local newspaper, over social media, and via City News Alerts which has a 100-person subscriber list. After each public meeting digital presentations were linked on the City's website and shared with the community and project stakeholder groups.

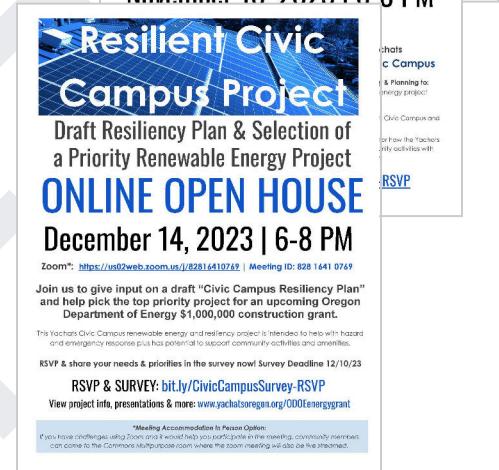
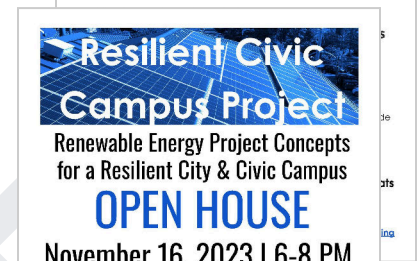
Stakeholder Engagement

Two project-specific stakeholder groups were assembled in addition to the design and planning team. Roles and responsibilities of each are listed below.

- **Project Management Work Group**
City Manager, Grant Manager, City Clerk, and two Planning Commissioners. Role: Collaboration on project planning, advising on project approach, stakeholder engagement, outreach, and related planning processes.
- **Stakeholder Advisory Group**
Role: Provide feedback on public engagement, stakeholder priorities, related projects and opportunities within their sphere of influence.
- **Planning & Engineering Consulting Team**
Roles: Provide technical facility assessments, site and technology analysis, hazard evaluation, design opportunities and constraints and public engagement to develop local goals, priorities, and decision-making criteria

Equity & Transparency

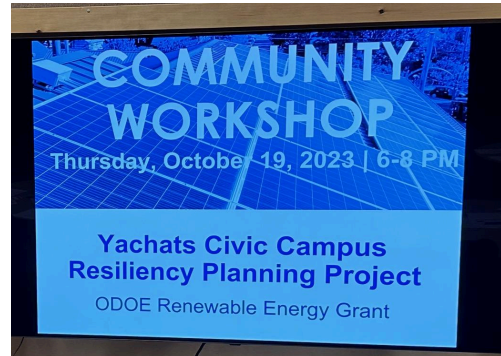
To ensure equity was a focus, the public involvement process included a Relational Accountability Process (RAP) tool that provides a method for assessment, transparency and accountability in project values, goals and actions that advance equity, diversity, and inclusion. A RAP assessment was conducted at the beginning, middle and end of the planning process to refine methods and outreach. This process expanded stakeholder engagement with community liaisons to harder to reach populations, and expanded outreach methods, engagement venues, and media formats to increase accessibility of elders, youth, tribes families, employees and employers, rural residents and visitors.



Community Engagement Events

Public Workshop 1

On October 19, 2023, over 30 people gathered at the Commons to consider how renewable energy and other power improvements at the Civic Campus can help the City respond to hazard events and enhance day-to-day use. Attendees identified where and how the civic campus connects to places across the City to improve resiliency for the larger community and to support durable power, communication and access to services. During the workshop, the project team identified the key hazards and the organizations that were addressing them.



Key goals for renewable power and storage included:

- Reduce power interruptions
- Create a refuge during prolonged hazard events with power outages,
- Strengthen water storage and filtration at the campus and citywide,
- Improve communications for every day and emergency uses, and increased access to durable power
- Reduce diesel and gasoline use during a hazard event, and
- Serve as a demonstration hub for renewable energy and sustainability strategies.



Attendees suggested that the City might address strategies for

- Wind power demonstration
- Alternative fuels such as biodiesel
- Water capture, storage and filtration
- Stormwater management and greenspace preservation
- Enhanced wayfinding and signage that can help in emergency response
- Opportunities to support local businesses and grocery stores with adequate mobile power for emergency refrigeration of food during power outages.



The identification of diverse resiliency approaches for food, water, hygiene, refuge, communication, and accessibility helped inform bigger picture thinking for citywide approaches that the buildings, services and planning in the campus could align with. See table on page 48 provides a snapshot of Resiliency Approaches that address basic needs, possible locations, and their value to enhanced resiliency.

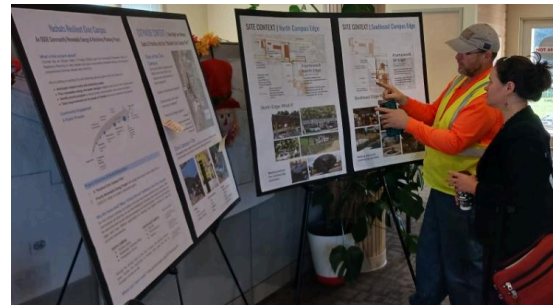
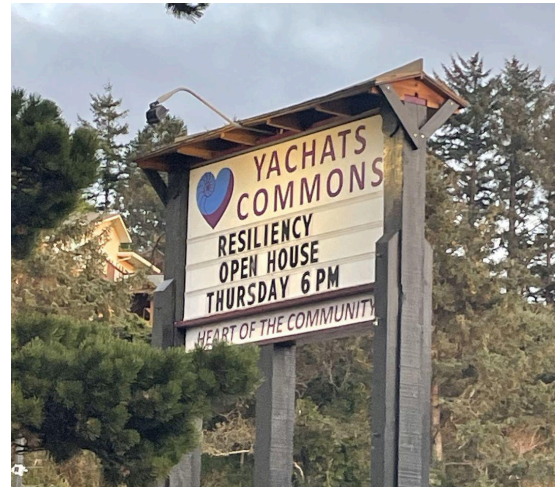
Open House 1

On November 16, 2024, the City hosted an in-person Open House at the Commons providing community members with a digital presentation on the project, including an overview, summary of technical assessments of the buildings, key goals and priorities heard from workshops and other stakeholders, and summary of candidate project designs for including renewable energy and enhanced resiliency. The presentation was followed by a robust group discussion and participants were given the opportunity to visit information stations to give feedback and discuss with project staff.

The Open house included extensive visual display posters highlighting the vision and goals, draft decision-making criteria, and other stations focused on hazards, project resiliency, design concepts and technical facility assessment results. All presentations were put on the City website and presentation boards were placed on display in the City Hall and Commons buildings.

There was strong support for the Campus being an eco-demonstration hub that would be a draw for both visitors and residents that align with the City mission. It was valued that the demonstration of sustainability features would visually also help communicate that the Civic Campus was the place for refuge and response following an emergency or hazard event. Interpretive signage that could also help with education around sustainability and wayfinding for emergencies was also seen as a value, especially if it could also leverage and expand awareness of Yachats history, foster sensitivity and understanding of indigenous communities past and present. It was also noted that expanded resiliency and new solar facilities could support enhanced economic vitality for spaces to host events, draw tourism, and broaden awareness of natural resources such as trails, fishing, wildlife, and local attractions.

Community members expressed support for connecting resiliency efforts both on the civic campus and citywide to include emergency caches, South of Bridge resident needs, the fire station, meeting points, fuel storage for generators, and leveraging grant resources for capital improvements like the new library where possible. Based on this workshop the planning process began to develop criteria to organize decision-making, priorities and goals for design and locating of Civic campus facilities. The process also considered improved overall urban design goals to support better function and a more integrated approach to facilities planning based on the criteria that began to emerge.



Feedback during and after the Open House was very positive and there were frequent statements that the meaning and purpose of the project in the general population's mind has shifted from initial uncertainty and skepticism to excitement and optimism. There seemed to be a growing acknowledgement that the improvements to the Civic Campus give the opportunity to serve everyone in the community prior to, during, and after a hazard event and to think both about and prepare and plan for a diversity of emergency response events as well as day-to-day improvements. City staff noted that residents had begun thinking more about what the Civic Campus role in the community should be, and how communities participate and benefit.

Open House 2

On December 14, 2023, the City of Yachats hosted a two-hour Open House online with attendees on Zoom and in-person at the Civic Campus to accommodate those that had difficulty with remote attendance. The meeting was widely promoted via City alerts, posters, social media, and on the City's project webpage. During the Open House the consulting team gave a brief overview of the ODOE grant project, scope and process, and an update on goals, priorities, and other comments heard to date from the Advisory Group, the Public Workshop and In-Person Open House, and summary of the online Vision & Priorities Survey.

The project team presented takeaways on their technical research, decision-making criteria, and project concepts. Detailed summary of benefits and tradeoffs were shared for each project concept including cost, maintenance, resiliency, and power generation, and social, economic and cultural benefits. Analysis of key criteria of where the Civic Campus has gaps in resiliency that could be addressed, best opportunities for refuge, and least cost for establishing foundational resiliency infrastructure were key factors in identifying the top project candidates:

- City Hall and Commons Rooftop Solar (Proposed Project 1)
- "Barn" Solar Canopy - stand-alone pavillion behind Commons (Proposed Project 2 Option)
- Parking Solar Canopy - between City Hall & Commons (Proposed Project 2 Option)

During the event, attendees were given time to discuss and ask questions about project alternatives, and an online poll was hosted for zoom participants, with paper options for in-person attendees. The poll asked participants to evaluate five questions related to reflections on the survey vision and goals, preliminary data, priority first projects, subsequent renewable energy improvements, amenities and implementation. See the summary of poll responses In Appendix G which reflects the poll results and priorities of the Open House participants. Notably, participants strongly agreed that "Rooftop solar on Commons & City Hall" was the priority project to recommend (based on the engineering, resiliency, and budget constraints) for a next 2024 ODOE Construction Grant project.

(See Appendix G. Public Engagement for details on the OpenHouse and tabulation of poll results)

Community Vision & Needs Survey

An online survey was used to gather additional input on the community's vision and goals, emergency response needs and priorities, and opportunities for improvements that might be leveraged within the Civic Campus and surrounding areas as part of the planning for the project. The online survey was widely promoted with the community through the City of Yachats project webpage, with notices

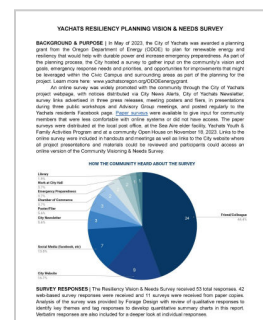
distributed via City News Alerts, City of Yachats Newsletter, survey links advertised in three press releases, meeting posters and fliers, in presentations during three public workshops and Advisory Group meetings, and posted regularly to the Yachats residents Facebook page. To expand the reach of participants, [paper surveys](#) were also distributed at key venues to give input for community members that were less comfortable with online systems or did not have access.

The survey received 53 total responses including 42 web-based responses and 11 surveys received from paper copies. Analysis of the survey was provided by Forage Design + Planning with review of qualitative responses to identify key themes and tag responses to develop quantitative summary charts in this report. Verbatim responses are also included for a deeper look at individual responses. A final summary report is intended to be posted on the city of Yachats project webpage.

Survey input informs creation of a community based resiliency vision statement to complement the preliminary energy vision in the project planning. The survey results align well with the project goals heard in the community engagement workshops and open houses and emergency priorities. These included meeting essential emergency energy resilience and recovery needs for hazard response including shelter, hygiene, power for hot water, cooking and refrigeration, drinking water storage and filtration, refrigeration and storage of medical supplies, charging of personal devices and vehicles, safe meeting places and communication about hazard response updates including where to go and what to do to stay safe and how to help. Other shared goals for the Civic Campus included serving as a demonstration hub for sustainability and renewable energy with interpretive information that could help orient locals and visitors to the innovation elements, cultural history and emergency wayfinding, becoming a model for other coastal cities, and increasing awareness of emergency response actions before, during and after an event. Communication needs were a priority especially adding diversity of modes for radios, satellite phones, and digital alerts with the City Hall already as a command center for events. Although power outages were not lengthy generally, respondents noted they would rely on the Civic Campus for power especially in cases where outages were more extensive for charging devices especially for communication and medical purposes, and in extreme weather events for cooling or warmth. The majority of respondents were elderly which aligns with area demographics and this population is more vulnerable to heat and cold events.

Respondents expressed goals for resiliency that could support other Citywide efforts including residents that were not near the downtown, including the Fire Station as a possible location for fuel storage, and mobile batteries for dispersing back-up power such as for grocery stores. It also affirmed community priorities for subsequent planning and energy projects including solar on the library, public bathrooms and water capture and filtration (e.g cisterns), more planning needed to address South of Bridge resident emergency needs as well as emergency response Caches, emergency signage in the campus and night sky protected lighting of trailheads for wayfinding, more education and ongoing hazard response and preparedness training.

[**View the 13-page Survey Summary with analysis by themes and narrative responses**](#)



IV. RESILIENCY ASSESSMENT: SITE FRAMEWORK & ENERGY USE

Site Framework & Energy Assessment

The Civic Campus Site Framework is a tool to understand the elements of sustainability, resilience, social activities, its edges, and its relationship to the commercial core of the City. It helps to guide the location of projects that support economic and social objectives that support resilience in the City and more specifically in the Civic Campus. See *Appendix C Final: 2.2 Community and Project Parameters*.

Building on the Existing Hazard Response Systems

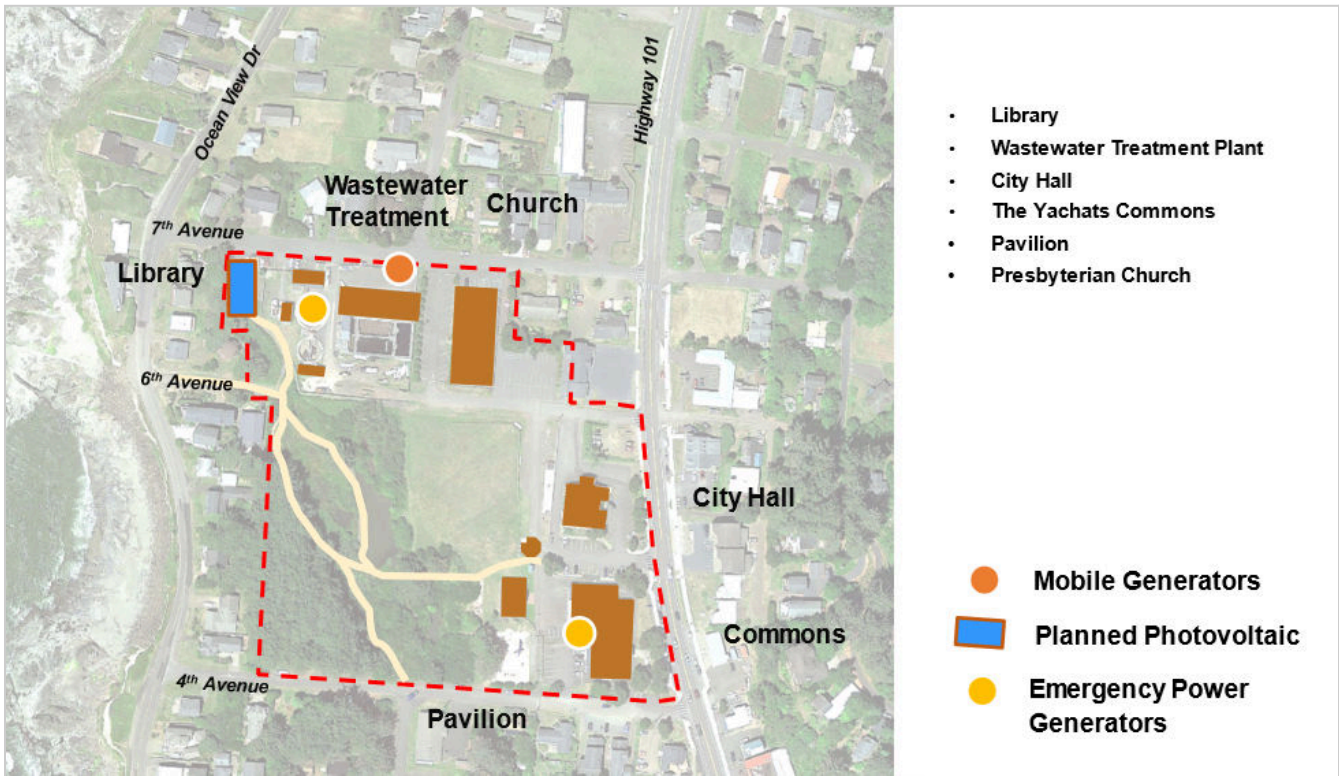
The Civic Campus has many existing and planned elements that can respond to hazard events and mitigate the impact of power disruptions. The Civic Campus Site Framework is the underpinning of a tool to understand the elements of sustainability, resilience, social activities, its functional organization, and its relationship to the commercial core of the City. It helps to guide the location of projects that support economic and social objectives that support resilience in the City and more specifically in the Civic Campus.

The Library, Wastewater Treatment Plant (WWTP) and Presbyterian Church are located on the north side of the campus between 6th and 7th Streets. A 255 kW stationary diesel generator is installed at the WWTP and that provides emergency power to the plant. It is significantly oversized given the documented peak demand for the plant of about 80 kW. Also stored at the plant are mobile generators that are used to provide emergency power to water pumps and wastewater lift stations during a power outage. With the hazard response equipment housed at the plant, this area has the greatest current flexibility to respond and support power generation during a hazard event.

The City Hall, Commons, and Pavilion are located on the south and east of the campus between La De Da Lane and Highway 101. A 30 kW stationary diesel generator is installed to provide emergency power to selected loads/needs in the Commons building.

Strengthening Sustainability

Improvements to the campus should respond to the location and configuration of site features to enhance the sustainability of energy and water resources, and stormwater flows through the site. Sustainable energy and water sources are fully consistent with a resilient Civic Campus. Thoughtful organization of landscape and building improvements can not only create these resources but can also make better outdoor spaces that serve an economic or social function and can be used as a refuge or emergency response staging area.

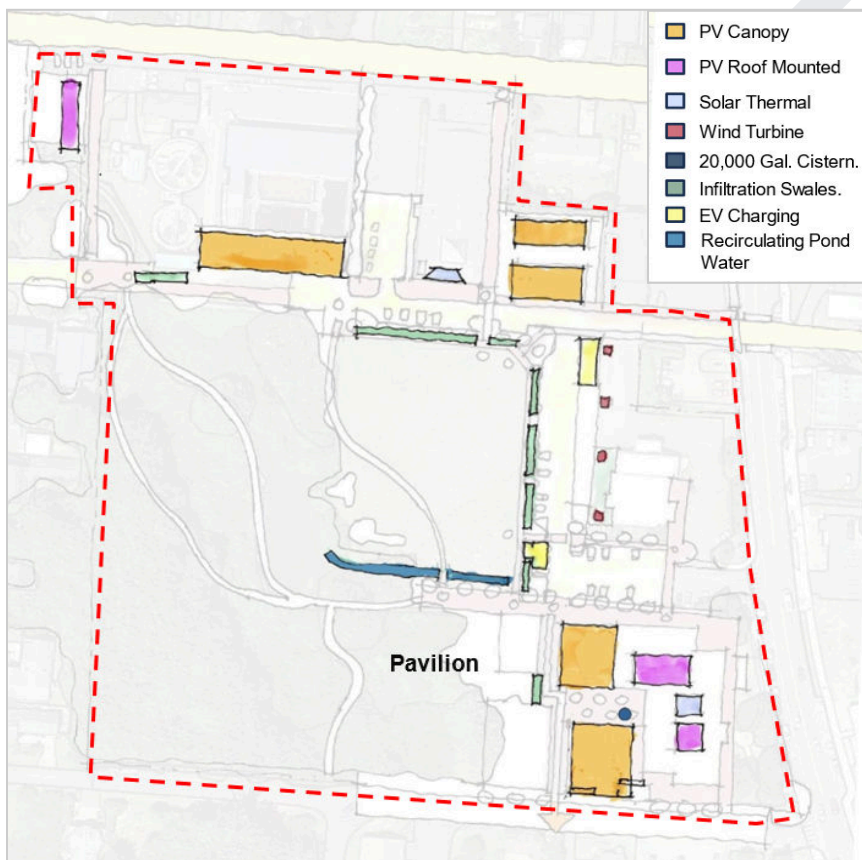


The Civic Campus contains critical social and governmental functions in the City. It uses diesel fueled emergency power generators to operate water infrastructure and serves as a command center in a hazard event.

Solar Photovoltaic Systems. Many areas of the site have excellent unshaded solar resource. Solar photovoltaic panels can be strategically placed in these areas, including building roofs, over parking lots and the paved area to the west of the Commons where covered outdoor activity areas might benefit, and in the south yard of the WWTP. When appropriately coupled with site and building electrical system improvements, electricity generated from solar installations will provide a sustainable, durable, and increasingly cost-competitive source of energy for the Civic Campus. The potential energy generation capacity of available solar photovoltaic locations within the Civic Campus is theoretically sufficient to balance all of the electricity used by the campus over the course of a year. The available solar resource in Yachats means that Civic Campus solar systems would not generate enough electricity in the winter to meet the campus demands but would generate extra electricity in the summer that would be exported onto the regional grid. This is referred to as “net zero energy” performance and does require net metering coordination with the local utility. Central Lincoln Public Utility District currently supports net metering arrangements for solar systems up to 200 kW in capacity on each individual meter. This is significant enough to undertake several solar projects within the framework outlined in this plan.

Solar Thermal Systems. Several building rooftops can accommodate south-facing solar thermal panel installations. Both the Commons and the Presbyterian Church have kitchen domestic hot water loads that could be augmented by production of solar hot water. Due to the relative complexity and limited resource contribution within the Civic Campus, solar thermal systems have not been included in near-term project planning but could be considered as future Civic Campus projects are identified within its sustainable development framework.

Small Scale Wind Turbines. The campus also has demonstrated wind resource that while not reaching utility-scale is sufficient to generate renewable electricity throughout the year. Small scale wind turbines are available in capacities from 1 kW to 50 kW, and in both horizontal axis (propellers) and vertical axis configurations. Vertical axis turbines tend to exhibit both reduced ambient noise and reduced wildlife casualties. Indeed, Yachats has a local connection to a company that is currently involved in research and development of vertical axis turbine technology. Due to both cost and wind resource limitations, today’s small scale turbines are not cost competitive with solar photovoltaics as a primary source of sustainable energy. However, wind turbines are a dynamic and visible symbol of sustainability, and actually generate more electricity in winter months than a similarly sized solar system. On an annual basis, wind turbines are anticipated to generate about 60% of the electricity that would be generated by a similar sized solar system, and at current costs would be over four times more expensive per kWh generated. Integration of small scale wind turbines within the Civic Campus should be considered within its sustainable development framework, though initially as demonstration technology.



Stormwater Management can use swales to treat water from impervious areas and divert it away from pervious areas that can be damaged such as the large green space turf area.

Image: Sustainability System Concepts for Integrating Renewable Energy & Water Management Strategies. Illustration by Green Urban Design. Improvements that support energy and water management can be combined with other projects and can reduce operational cost and transform the visitor experience on the site.

Rainwater Reuse. Stormwater Rainwater runoff can be collected from roofs, stored, filtered, disinfected, and reused as a potable water source both for “normal” operation and for emergencies. Yachats typically receives over 60 inches of annual rainfall although it does experience a dry season from the end of June until mid-September. If rainwater were collected from 6,000 sq.ft. of the roof area, and stored in a 20,000 gallon cistern, this could function as a sustainable source of water that would meet the current month by month needs of the Commons building including through the dry season. In addition, the cistern could be an attractive, visible landscape element that provides water from roof areas around the commons could be a potable water source during a sustained hazard event.

Solar Thermal arrays and Wind Turbines lack efficiency in generating power and energy are limited by the site's location on the beach. While they could be demonstration projects, they have a low cost to benefit.

The Pond is a potential resource that could provide a source of water for enhanced fire protection on the Civic Campus to fight fires during a drought. It is currently an amenity on the site. It needs to have regular maintenance to root out invasive species, improve storage capacity and recirculate the water during drought, it can exhibit overall improved water quality and as an amenity on the site and play a larger role within Civic Campus sustainable development framework..

Landscape Enhancements for Wind Protection. While wind does represent a potential sustainable energy resource, excessive wind also creates undesirable comfort conditions in the current and potential future outdoor activity areas. Planting of trees and shrubs in key areas to protect outdoor these areas from wind would improve use of the outdoor spaces around the Civic Campus. Additionally, as new buildings and structures are designed, predominant north-south wind directions should be considered so that the structures themselves offer a degree of protection from winds.

Strengthening Resilience

Both functionally and geographically, the Civic Campus facility organization suggests “edges” – a north edge that includes the library, wastewater treatment plant, and the Presbyterian church and a southeast edge that includes the City Hall, Commons and Pavilion. The location and organization of the Civic Campus logically serves as a center of the emergency planning and hazard event recovery for the City. The Civic Campus is the center of government, and a foundation for vibrant social life within the community.

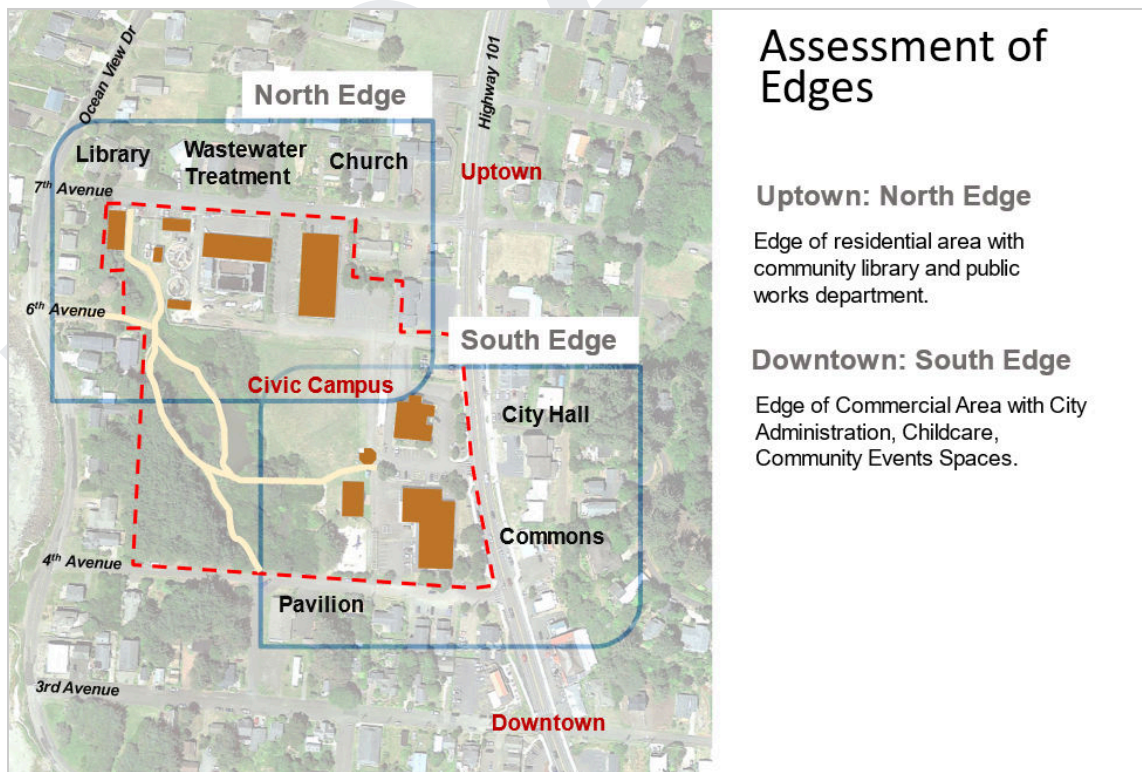


Image: Assessment of Civic Campus Edges & Site Context. Illustration by Green Urban Design.
The edges of the Civic Campus can complement and supplement the residential and commercial areas they border.

Events and activities in the Commons are complementary to the adjacent commercial district which is the economic engine of the City. The “urban planning” opportunity is to plan projects for the campus that activate and invigorate adjacent neighborhoods as well as enhance current and future uses of these neighborhoods and the Civic campus itself. Resilience, in this sense, couples the idea of enhancing social cohesion and economic sustainability while creating a command center and refuge for community members following a hazard event.

North Edge. The North Edge is an area with residential, cultural, and business activities but has the experience of a more residential character, albeit with an industrial process facility in its center. The facilities that make up the North Edge are all-electric facilities that are reasonably efficient when compared to similar types of facilities in similar climates. There are energy use reduction opportunities but primarily in the privately owned church. The table below summarizes the energy use characteristics of the North Edge.

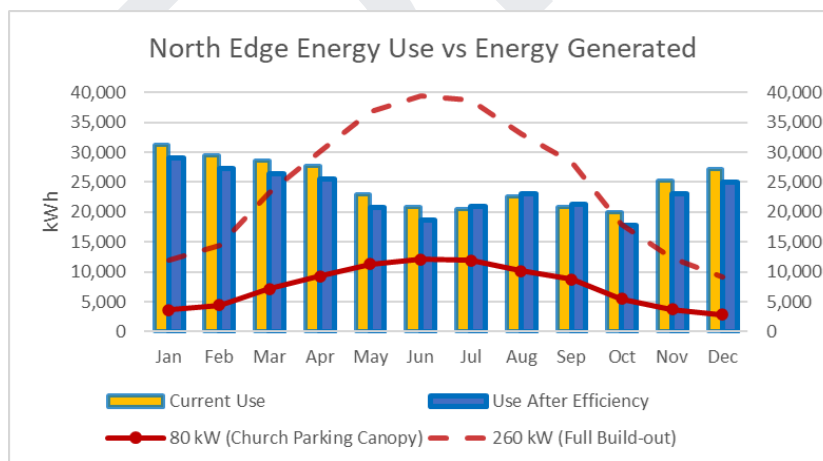
For more detailed facility assessment information including energy use, please see Appendix A: Audit Facilities in Civic Campus.

| Facility | Area, SF | Current Annual Energy Use | | | % Better than Median | % Savings Potential | Future Annual Energy Use | | |
|--------------------------|---------------|---------------------------|--------------|-----------------|----------------------|---------------------|--------------------------|--------------|-----------------|
| | | Electricity, kWh | Other, MMBtu | EUI, kBtu/SF-yr | | | Electricity, kWh | Other, MMBtu | EUI, kBtu/SF-yr |
| Library | 3,600 | 17,941 | - | 14.2 | 69% | 7% | 16,637 | - | 15.8 |
| WWTP/Public Works | 8,500 | 223,800 | - | 89.9 | n/a | 0% | 223,800 | - | 89.8 |
| Church | 12,000 | 55,420 | - | 15.8 | 37% | 31% | 38,401 | - | 10.9 |
| Total, North Edge | 24,100 | 297,161 | - | 42.07 | | 6% | 278,837 | - | 39.5 |

EUI=Energy Use Intensity; MMBtu=Millions of British Thermal Units; SF=Square Feet; kWh-kilowatt hours

Key existing resilience-related features of the North Edge can be characterized as follows.

1. It has the most emergency power generation potential which includes a 250 kW diesel emergency generator that is significantly oversized for the WWTP needs and could conceivably provide power to all of the buildings in the Civic Campus.
2. It houses numerous mobile generators used by Public Works during a power outage to keep sewer and water system pump stations operational.
3. It has easy access up 6th and 7th Street up to tsunami refuge areas.
4. It is mostly flanked by residential uses along its edge.



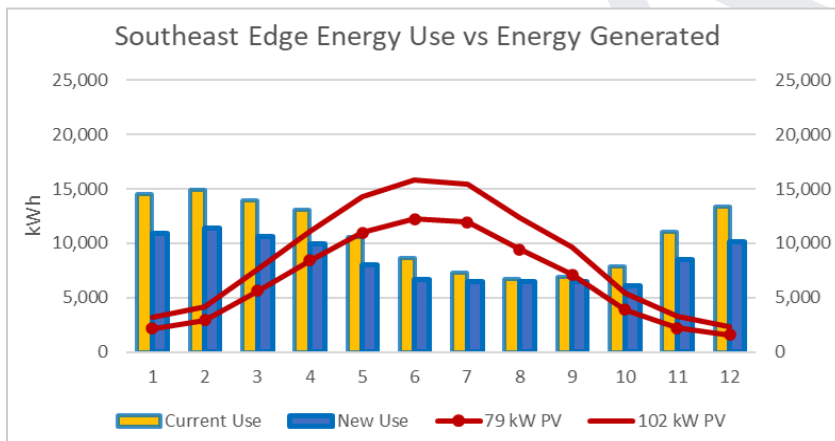
The monthly energy profile of aggregate building energy use for the North Edge is generally consistent throughout the year due to the high energy intensity of the WWTP, which is the dominant load and is consistent on a monthly basis. A full build-out scenario for a potential solar system would be represented by a 260 kW system that could generate all the power that is needed throughout the year.

Southeast Edge. The Southeast Edge is an area with government, commercial, and shared community functions. It is supplemental to tourism due to the many community events that are held in this area that are attractive to visitors. The facilities that make up the Southeast Edge are essentially all-electric facilities. A small amount of propane is used for cooking in the Commons. The facilities are reasonably efficient when compared to similar types of facilities in similar climates, but there are significant energy use reduction opportunities in both the Commons and City Hall. The table below summarizes the energy use characteristics of the Southeast Edge.

For more detailed facility assessment information including energy use, please see Appendix A Final: 2.4 Audit Facilities in Civic Campus.

Key existing resilience-related features of the Southeast Edge can be characterized as follows.

1. It has the limited emergency power generation potential which includes a 30kW emergency generator that provides emergency power to the Commons building but is unable to meet the needs of the Southeast Edge in an extended power outage.
2. Access to the tsunami refuge area is north along La De Da Lane and Highway 101 to 6th and 7th streets which lead to assembly areas up the hill.
3. It is flanked by commercial uses on 4th Street and Highway 101.
4. Seasonal outdoor markets are located on 4th Street within this edge.
5. This edge of the site has high demand for toilets and visitor information during community and business activities on the site.



The monthly energy profile of aggregate building energy use for the City Hall, Commons, and Pavilion has a peak energy use in the winter. A 79 kW solar system (considered as a priority project) could generate about ¾ of the power that is needed throughout the year. A 102 kW solar system could generate all of the power required throughout the year.

In either option, there is limited capacity to collect solar energy during the winter. If there was an extended power outage at this time, the 30 kW generator would be required to generate additional power.

Resilience Projects

Resilience, as considered within this plan, emphasizes both hazard event response and socio-economic enhancements. Potential projects at the Civic Campus that make better connections and improve outdoor settings contribute to improved resilience in both aspects. The context and potential of those “better connections” defines the site framework structure that is essential to this plan. Project opportunities that work within this framework are discussed below for both the North and

Southeast edges.

North Edge Project Opportunities

The North edge has the potential to improve connections to tsunami assembly areas, improve 6th Street as a desirable pedestrian connection, and improve access to the existing library. The public spaces around the North edge are not optimally supportive of the activities that spill outside from the library and the church. Poorly identified parking locations on 6th Street, a discontinuous 6th Street, and the use of parking areas for assembly contribute to limiting the activities that can safely occur in the area. Improvements that separate vehicle movements and pedestrian movements would contribute to a safer and potentially more active environment. While the emphasis on potential projects that rely on this plan is primarily about electrical energy and related resources, the site framework defined herein suggests that opportunities such as those listed below be integrated into resilience projects.

Improvements that would tend to activate 6th Street include:

1. Creating a multi-modal connection between La De Da Lane and Ocean View Road that is pedestrian and bike oriented but does not preclude vehicle access such as does a [Woonerf](#).
2. Improving access to yard waste recycling that is complementary to the housing pods in the Church Parking Lot.
3. Separating vehicle movements and pedestrian movements would contribute to a safer environment such as organizing parking and pedestrian access along 6th Street.

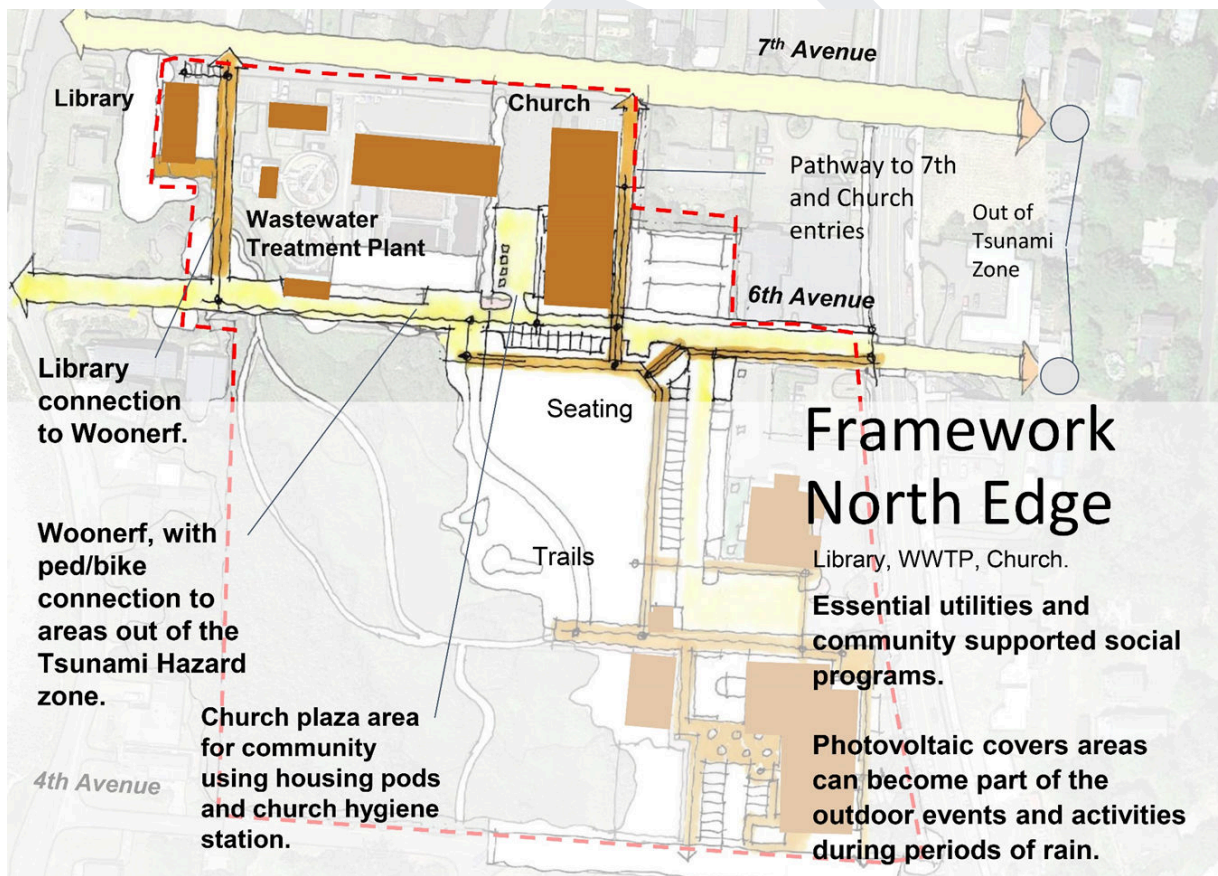


Image: North Edge Framework. Illustration by Green Urban Design.

As renewable projects are installed, they can improve access and the settings that help to connect the Library and the Church to the Civic Campus and use the open spaces more effectively.

Southeast Edge Project Opportunities

The Southeast edge has the potential to improve the public spaces around the buildings to provide better spaces and amenities for outdoor events and activities. The public spaces within the Southeast edge connect the City Hall, Commons, and Pavilion. The focus of these spaces is La De Da Lane as it traverses the front of the Pavilion on the west side of the Commons. It is level and in good condition. La De Da Lane also has an EV charging station at the foot of 5th Street, a skate park, and children's play areas. Again while the emphasis on potential projects that rely on this plan is primarily about electrical energy and related resources, the site framework defined herein suggests that opportunities such as those listed below be integrated into resilience projects.

Improvements that would tend to activate La De Da Lane include:

1. Improving the east-west connector along the north edge of the Commons Building to better connect the Commons and Pavilion to the park space trail leading to the wetland area and Ocean View Lane.
2. Making a multi-modal connection along La De Da Lane between 5th and 6th Streets separating vehicles from pedestrian movements would make a safer environment by organizing parking and pedestrian access along La De Da Lane. It could be more pedestrian and bike oriented but not preclude vehicle access such as does a [Woonerf](#).
3. Repairing pavement on 5th Street and La De Da lane.
4. Improving La De Da Lane to better connect the North Edge to the Southeast Edge.
5. Incorporating community input collected in recent park survey responses.

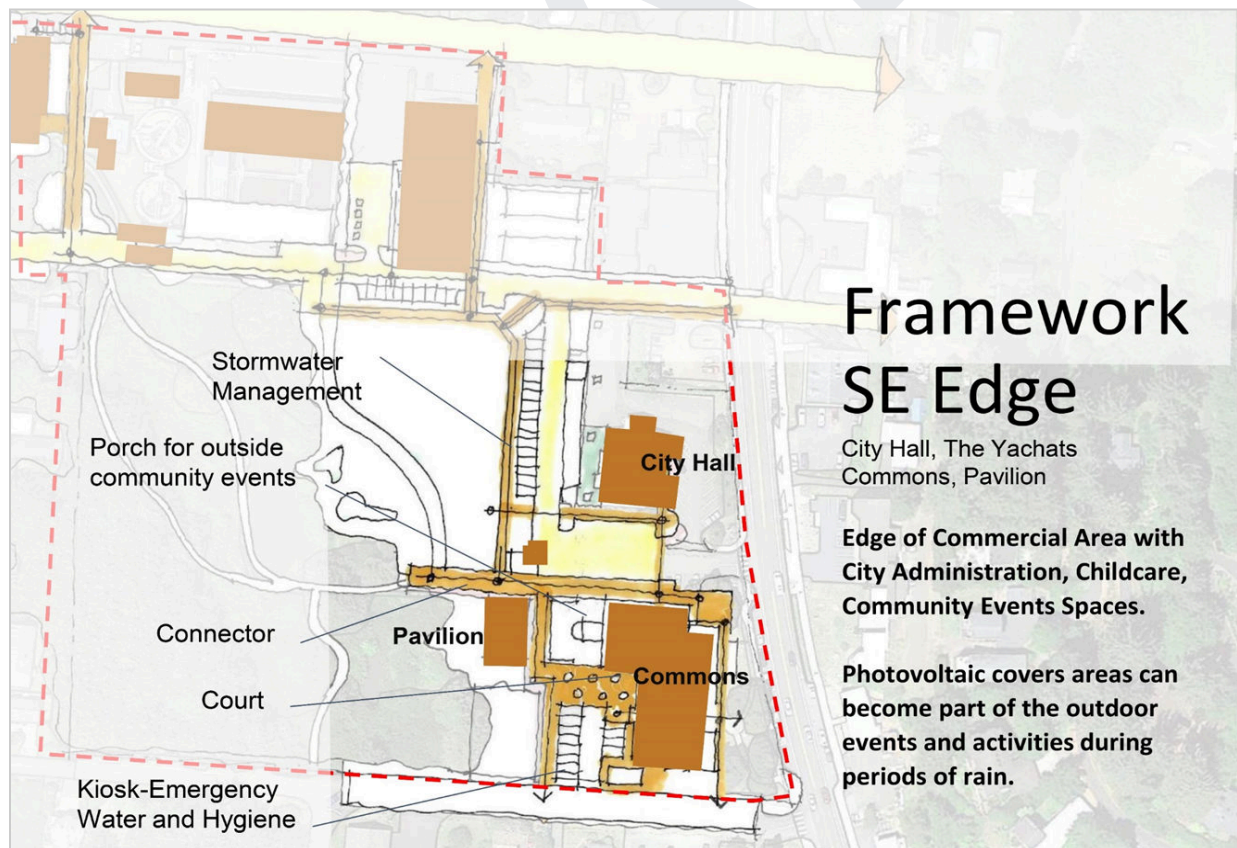


Image: SE Edge Framework. Illustration by Green Urban Design
As renewable projects are installed, they can improve access and the settings that help to connect the Library and Church to the Civic Campus, and use open spaces more effectively.

Connecting the North and Southeast Edges

As previously discussed, geography and function logically organize the Civic Campus into two edges. These edges have different roles within the Civic Campus but will ideally be better connected as future resilience projects are implemented. La De Da Lane is key to connecting the two edges. La De Da Lane provides the opportunity to organize campus uses along its length. There are three primary areas that are crucial to helping the Civic Campus to be better connected and serve social activities and economic development in the City as a whole.

1. **Street Edge** | The role of the Street Edge is as a multiple use event and parking space that can be used for either parking, market activities, Commons building activities, or other events associated with local businesses. It is currently an outdoor space that scores highly in supporting both economic and social components of resilience desired for the Civic Campus.
2. **Pavilion Plaza** | The role of the Pavilion Plaza is to provide a meeting space at the center of the Southeast edge.
3. **Park Edge** | The role of the Park Edge is to better organize the park and green space within the Civic campus and to create an attractive setting for activities within the park and on the edge.

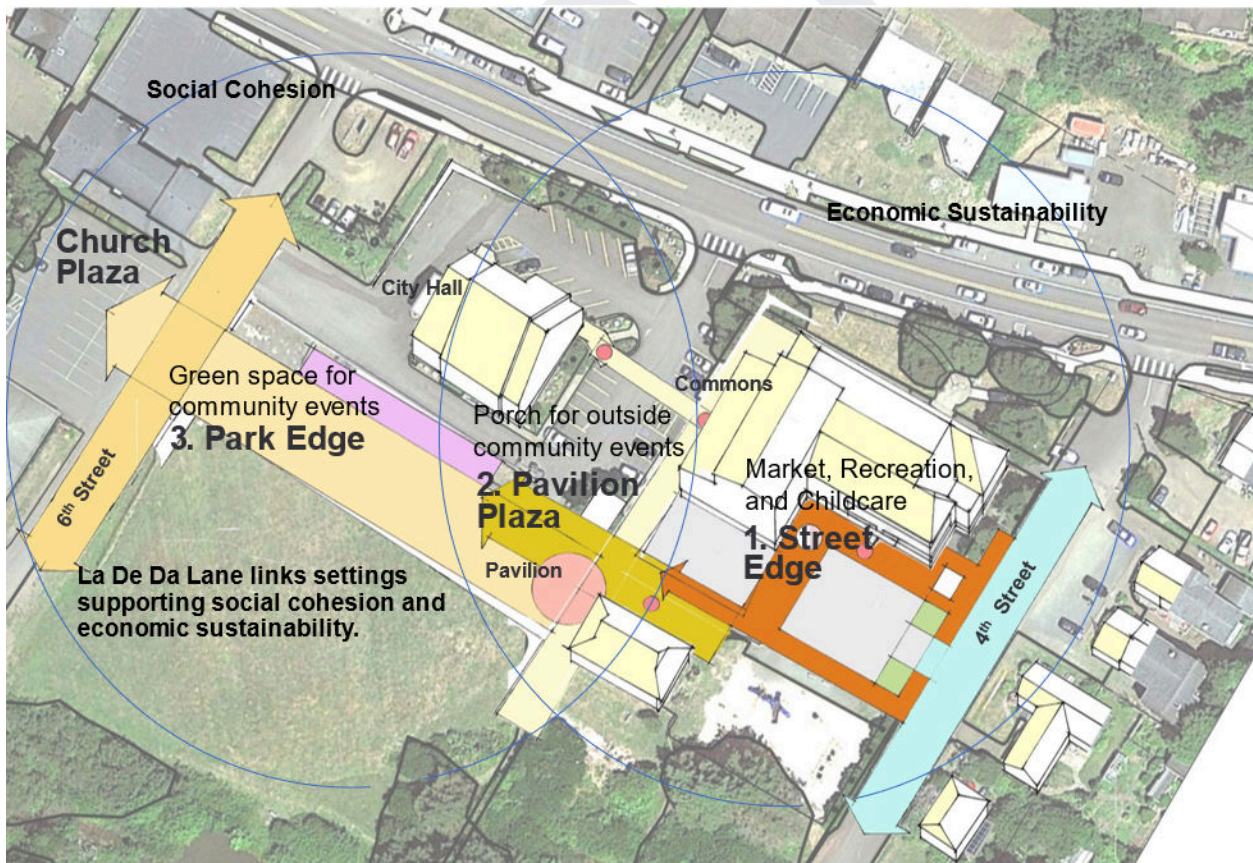


Image: Opportunities for Site Design Improvements that Connect Important Civic Campus Edges. Illustration by Green Urban Design. La De Da Lane has the potential to improve its service to the community as planned projects along its length are implemented.

Site Improvements

Currently, a number of needed site improvements have been identified. These include asphalt repairs, stormwater management improvement, site grading improvements, and enhanced wind protection to improve comfort and useability of outdoor spaces. These site improvements should be integrated into specific energy resilience projects where logical scope of work synergies exist. For example, many of these improvements can be undertaken when (and if) solar photovoltaic canopies are installed, as the installation of separate canopy structures will precipitate associated site work for foundations and other surface and underground modifications.

A number of priority non-energy site amenities have been identified within the outreach efforts undertaken to inform this plan. While not specifically energy related, these potential Civic Campus projects clearly resonate within the Yachats community and have a place within one or more of the primary areas identified above.



1. Street Edge

2. Pavilion Edge

3. Park Edge

La De Da Lane has the potential to connect spaces that have a different value and purpose in creating a civic space that improves resilience in the Civic Campus for the City.

- 1. Street Edge | Visitor Information Kiosks and Cisterns.** It is here where community ideas for a Kiosk serving visitor information from the chamber or nonprofit might be strategically located. Also, it is a strategic location for a cistern to collect rainwater. Due to the size of this area, there is ample space to site one or more standalone structures.
- 2. Pavilion Plaza | Restrooms, Monuments, Signage, Electric Charging.** The Pavilion Plaza is a preferred location to implement community ideas for bathrooms, historical and cultural monuments, and wayfinding signage. There is already an electric vehicle charging station here which suggests

the potential for expanding the charging infrastructure to include the capability for multiple device and equipment charging in the future.

- Park Edge | Circulation, Parking, Stormwater.** The current roadway along the park edge could be further developed to clarify circulation zones for people and vehicles with parking and stormwater management. By making these improvements, the usability of park green space will be improved because the sheet flow of stormwater would no longer over saturate the soil.

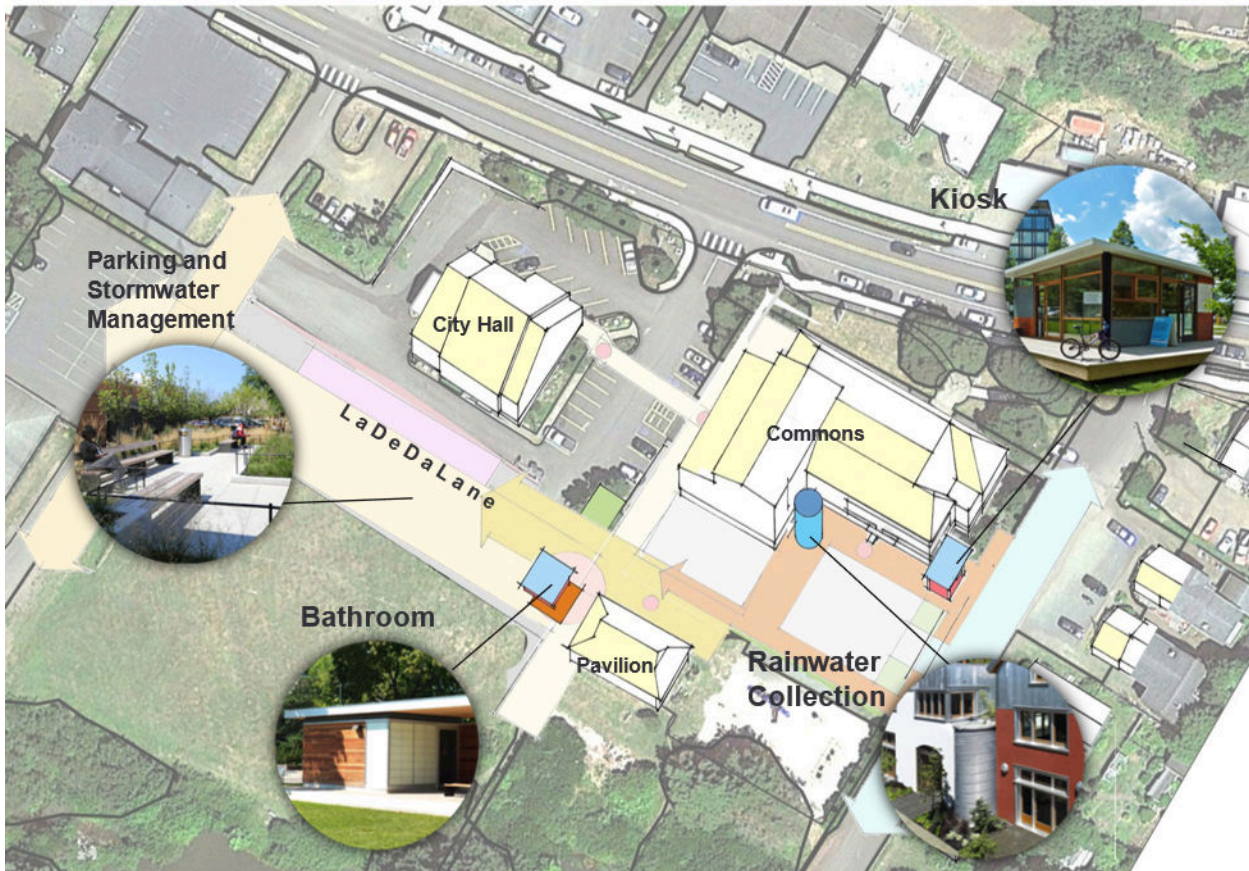


Image: Connecting Improvements Along a Central Spine. Illustration by Green Urban Design. La De Da Lane has 3 primary areas that can be improved overtime with subsequent investments that support the Civic Campus Resiliency Plan.

Selecting the Priority Southeast Edge

Of the two edges, the Southeast edge has the greatest near-term potential to increase resilience on the Civic Campus by adding renewable electricity generation and enhancing socio-economic character within the community. The Southeast edge contains the two critical civic buildings – both city-owned and controlled - that are the logical loci for refuge, shelter, and command required during and after a hazard event. Only one of the buildings – the Commons is equipped with back-up power capability. It is currently backed up by a 30 kW generator. In an extended outage keeping this generator fueled would be a problem, particularly if the power outage was accompanied by road closures and fuel shortages. The Southeast edge is also home to the greatest mix of activities that supports economic and social outcomes that contribute to resilience, and as discussed above offers numerous locations

for other resilience-related site and facility improvements to be implemented. Supplemental solar panels and batteries, along with strategic upgrades to the overall electrical system infrastructure would greatly enhance supply of durable power, reduce its cost, and minimize reliance on the diesel emergency generator.

While the North edge also possesses reliance needs and potential, the only critical; City-owned facility - the Wastewater Treatment Plant – is already equipped with a stationary back-up power system that can power the plant during most common power outage events. At the time of publishing of this plan, the future of the library in its North edge location is uncertain, and the ownership structure of the church may be in flux. The North edge will offer reliance project opportunities in the future particularly the potential associated with electrical interconnection between facilities within the edge. But for the reasons stated above, it is not the priority edge for near-term projects that will enhance Civic campus resilience.

As illustrated below, the Southeast edge is the focus for the definition and evaluation of potential priority projects that can satisfy the definition of successful grant-funding resilience and renewable energy projects that would be suitable for the next cycle of construction grant funding by ODOE.

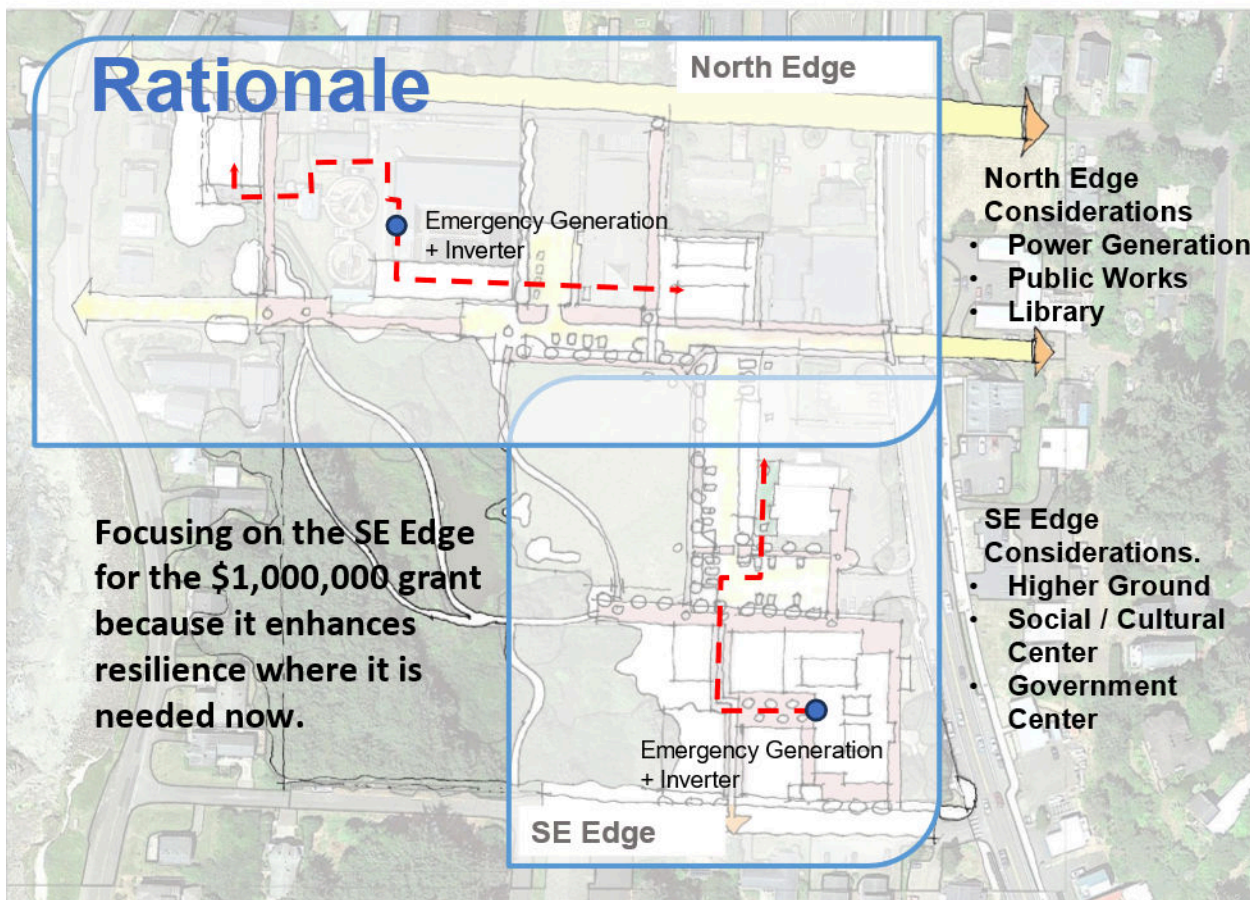


Image: Interconnection of Buildings. When the buildings on the Southeast Edge are connected with electrical infrastructure, it will improve the resilience to the services that lack such resilience.

An initial resilience project for the Southeast edge would start by interconnecting the electrical systems of the Commons, City Hall, and the Pavilion. This will create a core electrical “foundation” that

supports installation and integration of near-term solar system elements and additional solar system and potential wind turbine installation in the medium term future. In addition to added solar, a Southeast edge project should include necessary repair and rehabilitation to the existing back-up power system and investment in building energy efficiency opportunities that will reduce the need for electricity in the Southeast edge facilities.

The North edge currently has sufficient critical facility emergency power. Like the Southeast edge, there is also the potential to connect electrically to the nearby buildings to expand resilience on this edge of the Civic Campus. The addition of solar panels and battery storage is envisioned to further augment North edge resilience and ultimately create the logical location for charging of future City-owned electrical fleet vehicles.

The envisioned resilience enhancement within both edges of the Civic Campus has both implications and concept connections to Citywide resiliency issues and ideas such as those listed below.

- Augment portable generators/batteries for remote power serving pump stations, caches, and potentially individual citizens and other critical facilities.
- Expand fuel storage capacity at Fire Station and Wastewater Plant
- Establish an emergency power Cache south of the bridge with generator and food and fuel cache that provides power resources to that area and becomes a point of refuge in a Cascadia earthquake event or similar.

Site Renewable Resources

1. Solar resources in Yachats are comparable to other locations in Western Oregon - both on the coast and in the inland valleys. The Civic Campus site itself has numerous unshaded locations that will accommodate optimal solar installations, as well as a few modestly sub-optimal locations that will still generate meaningful electrical energy.
2. The site is also fairly windy, as would be expected on the Oregon Coast. However, the frequency of wind conditions that can generate meaningful energy via wind turbines is not ideal. Wind turbine installations of identical capacity to solar will generate about 25% of the energy generated by the solar panels.
3. Based on current technology, solar is a preferred and more cost effective renewable energy resource than wind at this site. However installation of an inverter system with the capability of interfacing with either wind or solar resources is recommended. This would allow the City to compare performance of different systems as new technologies are developed.

Future Civic Campus Microgrid

Developing a micro grid at the Civic Campus Scale is not currently feasible until such time as Central Lincoln Public Utility District is able to administer Microgrids within their operations. At that time, there are a number of potential benefits at multiple scales.

Below are the benefits of such a system at the scales of this plan where they can have the most benefit.

City Wide Scale: At some point in the future, it may be possible to interconnect all buildings and power sources on the Civic Campus with nearby buildings such that critical services such as the C&W

Market refrigeration equipment are able to prolong food storage during an outage using backup power resources that are located at other buildings.

Campus Scale: Currently there are backup generator facilities at the Commons Building and the Wastewater Treatment plant. Through a microgrid, these emergency power resources could be extended across the campus (connecting North and Southeast Edges) to nearby buildings adjacent to the Civic Campus during an extended power outage .

Building by Building: The interconnection of buildings in the North and Southeast edges accomplishes needed resilience goals without a microgrid, building on the current emergency backup configuration. However, implementation of a micro-grid in the near-term, if possible, would represent another technological way to accomplish this interconnection.

V. RESILIENT CIVIC CAMPUS PLAN

Plan

This plan incorporates a vision to make links between what can be accomplished in the Civic Campus to other areas of the City. These include hazard response services and improvements that support the economy and the everyday activities in the City. The vision is expressed in a series of goal statements that are reinforced with objectives, guidelines and supported by measurable criteria.

Vision

The plan vision is to supplement and complement the emergency management plan implementation by strengthening areas of the City such as the Civic Campus so it builds greater economic and community capacity to respond to hazard events. This includes establishing a network of resources such as caches, fuel storage and refuge areas that can be accessed in the immediate area. An important aspect of this vision is improving communication prior to, during, and after an emergency event.

The Vision established a role for the Civic Campus in the City. This role includes a central command center for training and responding to hazard events. It has activities at the heart of the resilience of the City because it serves to strengthen social and economic outcomes in the City that are crucial to supporting community resilience. This vision anticipates how the Civic Campus can play a key role anticipating preparing for, training for, and recovering from hazard events.

The plan is applied at Citywide, Civic Campus, and Building Scales to achieve the vision. Goals, objectives, guidelines, and criteria are plan requirements for any plan or physical improvement at each plan scale. A goal describes the outcome desired within the scale it is applied to promote resilience. The objective describes the actions that can be measured to achieve the goals. The guidelines are objective and qualitative standards which should be incorporated into the design of a project. The criteria highlights measurable outcomes that are key performance indicators in meeting the objectives.

The plan requirements are derived from community feedback as documented and interpreted by the planning team. They are intended to provide a method for identifying and evaluating potential resiliency investments which reinforces resilience in the City.

Citywide Scale Energy and Resiliency Criteria

The City plays an important role in providing services to the community inside the City and in surrounding unincorporated areas. As such, potential Citywide investments are considered to serve residents in unincorporated areas as well. It also is an important tourist destination which benefits the local economy and in turn helps support a sustainable community. Within this Resiliency Plan there are links between what can be accomplished in the Civic Campus to other areas of the City which includes hazard response services and improvements that support the economy and the everyday activities in the City.

Goals

1. Establish strategies that link projects in the Civic Campus that support synergies in projects in other areas of the City.
2. Create a model of sustainability and resilience on the Oregon Coast.
3. Connect critical water infrastructure power needs to emergency generation with fuel to support extended power outages.
4. Allocate resiliency related services and resources in an equitable manner on either side of the Yachats River.
5. Designate a central emergency response office in the Civic Campus to coordinate response to long-term hazards.

Objectives

- Create a central emergency response office in the Civic Campus that can coordinate distributed response to long-term hazards.
- Incorporate and expand use of alternative energy resources and technologies in appropriate locations throughout the City (e.g. solar, biodiesel, wind power, etc.)
- Develop the Civic Campus as an anchor for emergency actions by public works supporting community and business activities across the City.
- Expand and improve hazard response infrastructure at current distributed locations with particular emphasis in supporting the area “south of the bridge”.
- Maintain the potential to build a future microgrid that may pool generation resources within the Civic Campus and distribute power to nearby users during a hazard event.

Guidelines

1. Identify and aggregate community-wide skills and capabilities to help plan, respond, and recover to different hazard events.
2. Address existing resources and infrastructure including caches, meeting points, and generators.
3. Strengthen communication network over easily accessible and redundant systems (e.g. CB radios satellite phones, cellular phone network).

4. Strengthen working relationship with Central Lincoln PUD with a focus on improving electrical grid and power reliability.
5. Identify critical infrastructure with the City and support back-up power supplies to these locations.
6. Promote community activity at locations where economic and social goals can be achieved to promote sustainability and hazard preparedness.
7. Maintain relevant communication and outreach with businesses and residents.
8. Allow use of multiple fuels to provide emergency power and energy at critical locations in the City.
9. Provide a network of accessible locations to support medical devices and drugs that require power or refrigeration.
10. Promote a network of safe spaces where community members can gather with power and communication sources and reconnect people who are separated during a hazard event.
11. Reduce reliance on carbon based fuels in emergency power generation.

Criteria

1. Supply diesel fuel storage that supports 3 month outage for the Cities Critical Facilities.
Measure: 5,000 gallon diesel storage system with annual maintenance to ensure fuel quality is available to meet emergency power needs on both sides of the Yachats River.
2. Establish caches on north and south sides of the Yachats river in preparation for Cascadia Seismic event according to the Emergency Preparedness Plan.
Measure: Continuously monitor contents of caches according to the Emergency Preparedness Plan.
3. Establish locations on the beach to cross the Yachats River if the Highway 101 bridge is out of service.
Measure: Make emergency beach access points on either side of the Yachats River and store bridge materials to cross the river.
4. Communications command center located in Civic Commons.
Measure: Measure: Locate radio antenna and command center in the City Hall building and ensure capability to communicate to distributed locations within the City.
5. Electrify city vehicle fleet and emergency generation systems to reduce demand for Diesel Fuel for emergency generation.
Measure: City to make initial electrical vehicle (EV) purchase and install EV charging station at the Wastewater Treatment Plant.

Civic Campus Scale Energy & Resiliency Criteria

The following list of goals, objectives, guidelines, and criteria apply to resilience investments within the Civic Campus. They are derived from community feedback as documented and interpreted by the planning team, and are intended to provide a method for identifying and evaluating potential resiliency investments. The Civic Campus is the heart of Yachat's social and economic system and significantly supports resilience for the community in Yachats and in the surrounding unincorporated areas. It has buildings and site improvements that makes a central place where the community convenes events and conducts government activities.

Goals

1. Connect Civic Campus buildings such that backup up power resources at one building can be shared to support neighboring buildings in an extended outage.
2. Make cost-effective investments in an integrated approach (e.g. invest in efficiency prior to renewable energy).
3. Installed systems should be compatible with a future network of power sources, potentially configured in a small microgrid which will allow power resources at the Civic Campus to be shared with nearby users.
4. The designed buildings and site improvements should provide the City with the greatest flexibility to respond to a power outage.

Objectives

1. Provide durable and reliable power generation to match minimum assignable loads during the 5 months when PV power generation is at its lowest.
2. Define and establish minimum assignable loads.
3. Use buildings and site improvements to make settings for day to day activities that can also provide a refuge following a hazard event.
4. Re-establish regular community functions on the Civic Campus to provide education and training about services, materials, and methods related to hazard events.
5. Establish areas of refuge and shelter within specific facilities.
6. Reduce energy and maintenance costs associated with facility operation.
7. Create a command center for emergency response and communications.
8. Provide a central community source for potable water if the water system is disrupted.
9. Enhance public hygiene capacity for visitors and residents with public bathrooms, handwashing station, water-bottle filling
10. Improve stormwater management to control surface runoff and use roof water capture and reuse for emergency uses to minimize runoff impacts and serve potable and non potable water uses.

Guidelines

1. Use and apply renewable energy systems.
2. Optimally locate and orient solar panels.
3. Establish multiple uses for any newly constructed solar canopies or support structures.
4. Promote diversity of energy systems sited on the Civic Campus (batteries, generators, EV chargers, etc.)
5. Evaluate projects within the Civic Campus development framework.
6. Upgrade facilities with seismic improvements as and where appropriate.
7. Reinforce activities that connect community members to programs that build capacity to work together during a hazard event.
8. Maintain community engagement to advance resiliency development.
9. Engage and involve businesses that promote a sustainable economic base for the City with the capacity to recover following a hazard event.
10. Strengthen the electrical infrastructure to connect multiple buildings to emergency power generation.
11. Plan renewable energy projects to ultimately achieve Net Zero Energy / Net Positive Energy performance and/or connect to a future microgrid.

12. Include appropriate amounts of refrigeration, lighting, cooking, heating, and cooling in the definition of minimum assigned loads that supports community needs during a hazard event.
13. Oversize conduit where it can be used to connect electrical infrastructure in the north and southeast edges of the campus.

Criteria

1. Meet wintertime electrical loads during an extended power outage.
Measure: For the Southeast edge, design a solar electric system that incorporates the backup generator, minimizes generator run-time, and meets a well-vetted set of minimum required loads during a power outage.
2. Provide power to critical loads independent of the availability of Utility power.
Measure: Implement net metering arrangement and obtain utility approval of installed solar electric systems.
3. Provide flexibility to power more loads when the projected time of the power outage is short or when temperature and daylight conditions are favorable.
Measure: Provide load management system to match use with power generation during the 5 months when PV power generation is at its lowest.
4. Implement a project that fits into the Civic Campus development framework.
Measure: Apply for and win ODOE construction grant for a resilience and renewable energy project on the Civic Campus.
5. Advance community awareness and hazard event training.
Measure: Organize and re-establish hazard event gathering and “festival” at the Commons.

Building Scale Energy & Resiliency Criteria

The following list of goals, objectives, guidelines, and criteria apply to resilience investments associated with individual buildings. They are derived from community feedback as documented and interpreted by the planning team, and are intended to provide a method for identifying and evaluating potential resiliency investments.

Goals

1. Reduce building operating costs.
2. Improve occupant productivity and comfort.
3. Improve safety of occupants, maintenance personnel, and visitors.
4. Sustain critical building functions for a 3 month power outage.
5. Improve how building uses and activities support social and/or economic outcomes in the City and sustain services during a hazard or emergency event.

Objectives

1. Reduce energy and maintenance costs associated with building operation.
2. Implement all cost-effective and appropriate energy efficiency improvements.
3. Install maximum amount of rooftop solar.
4. Relocate and/or replace deficient electrical system components.
5. Ensure all buildings have access to back-up electrical power.
6. Provide comprehensive and responsive system controls within all buildings.

Guidelines

1. Locate solar system components to allow for easy and safe cleaning and maintenance.
2. Meet all code and utility requirements.
3. Create an electrical system that allows smooth transition from normal operation settings to power outage.
4. Implement Energy Conservation Measures as a priority to reduce power demand met by renewable energy systems.
5. Connect to nearby buildings to share a common emergency power generation and storage system.
6. Select materials and systems that minimize long term operational and maintenance costs.
7. Minimize use of materials that contribute to ecological degradation and emit carbon during their production.

Criteria

1. Improve building energy efficiency on campus.
Measure: Ultimately achieve electric bill reduction targets of 6% on the north edge by 20 % and on the southeast edge. Coordinate and track utility bills to verify savings.
2. Establish and meet critical building loads at all times without complicated occupant or operator intervention.
Measure: Install electrical infrastructure with load management system to allow seamless transition from normal building operations to emergency operations.
3. Maintenance Cost; Use materials and building systems that are adapted to City of Yachats Public Works Department capacity and the site's location on the Oregon Coast.
Measure: Improve durability of the systems using building materials that are adapted to moisture and salt air.

VI. IMPLEMENTATION

Applying what has been learned through the engagement process, the plan document should be a touchstone and guide to improve the Civic Campus, as well as the areas around the Civic Campus. These improvements are intended to strengthen resilience by advancing community cohesion and economic development, and positioning the community to prepare for, survive, and recover from serious and disruptive hazard events. Through continuous engagement with the community, advice from partners, and direction of council this plan can be adapted to implement improvements that are logical and cost effective.

Administration and Support

It is recommended that the plan be adopted along with organizational measures to support the use of the plan. Plan administration and support is acknowledged as a critical element to ensure that any good idea that may be achieved in a funded project receives the necessary community stewardship to insure maximum success. This is envisioned to involve an entity inside the City or in collaboration with the City to administer the plan, i.e., an advisory group. Such an entity could recruit project and community partners and form trusting agreements as improvements are made on the campus. See *Appendix C | Draft 2.2 Community Vision and Project Parameters*

Inclusivity

It is also acknowledged that successful resilience projects should promote inclusivity across disparate communities within and around Yachats. To promote inclusivity with marginalized communities in Yachats, future projects need to identify partners early in the project who are engaged with providing support with BIPOC communities. This includes working with partners supporting LGBTQ, homelessness, food insecurity, tourism and other organizations on the Oregon Coast who include BIPOC equity outcomes in their mission and provide direct assistance, grant funding, and can sustain long term partnership agreements. Values that are reflected in future projects should be aligned with and communicated to potential partners who can leverage the investments in renewable energy and resilience. A fundamental value is seeking to collaborate with such partners to share costs and promote benefits that serve the most vulnerable in the most sustainable way that prepares everyone for anticipated hazard events. See *Appendix H | Relational Accountability Plan*

Acknowledging that the goal of resilience has a social cohesion and economic development component is important. Opportunities to respond within the local community and economy should promote inclusivity with underserved and marginalized people. Partnering with organizations that have similar goals and desired outcomes is valuable. In addition, having a working relationship and commitment that instills trust between partners makes it easier to form lasting agreements that can translate to implementation of more significant and comprehensive resilience projects.

Partnerships

This resilience plan for the Civic Campus recognizes that the programs and services that exist and must be operational during a hazard event. Most of these programs and services should be represented by members of an Advisory Group who can also maintain connections to the leaders in the community. It is expected that many of the emergent and potential partnerships may result from these relationships and connections. Partners should be recruited who have a shared interest in potential projects, and can contribute to the financial and community underpinnings of a given project. As priority projects are identified within the framework of this resilience plan, the City and its aforementioned partners can refine the definition of such projects and secure grant funding for those projects through financing agreements and other administrative mechanisms. Some initial ideas for potential partners are presented below.

Program Partners

The Presbyterian Church ministerial programs and Yachats Youth and Family Activities Program (YYFAP) as well as other community and business organizations use the Civic Commons; they often conduct programs that serve disinvested and underserved in BIPOC and white communities.

Capital Improvement Partners

Collaborating organizations that have resources to support construction and maintenance of projects that fit into the framework of this plan could be supported through an ODOE Community Renewable Energy and Resilient Planning Grant. Collaborators who have self-identified as advocates and allies for over the course of this planning effort include:

- ODOE
- Oregon Coast Visitors Association
- Library Commission
- Chamber of Commerce
- Presbyterian Church

Project Implementation

Use the assessment framework and the plan criteria to define and prioritize projects. The goal is to create a project that meets resilience goals as well and attracts partners to support funding and operations of the project.

Decision Making

For a given potential project to get started a clear decision-making process needs to be defined and understood. In Yachats, final decision making power is founded by City Council's resolution. Part of the decision making process is likely to occur well before Council resolutions are considered and includes determining what elements of a project are good ideas and whether it is worth supporting. Another part is establishing criteria for implementation that can help the community and city council weigh the value of projects that are competing for limited resources.

A decision making process is needed that includes the formation of a recommendation from an advisory group to City Council that is well supported by the vision and goals determined through the community engagement process and value to the City as a whole. Such an advisory group could have the agency to form agreements, form projects, and help guide the project through the entire implementation process from resolution adoption to post-construction operation.

Agreements

Agreements would typically start with memoranda of understanding between collaborative partners who have an interest in pursuing a grant, forming a project definition, securing funding, and/or operating facilities. These initial agreements would establish the lead entity for delivering the project and who would maintain the facilities.

Follow-up agreements would potentially include financing and other more comprehensive operating agreements between partners to achieve shared outcomes and establish each partner's role through project design, finance, construction, and operation of facilities.

Long Term Stewardship

Longer-term operating agreements are possible to assign responsibility to an entity to coordinate successful project development and long term operations. Such an entity would report to the City Council but might administer the day to day activities to support grant application preparation, design of facilities, construction, and long-term facility operations.

Implementation Criteria

The following list of goals, objectives, guidelines, and criteria apply to the implementation of potential resiliency projects both in the near-term and longer-term future. They are derived primarily from the experience of the planning team members, and are intended to prepare City leaders and decision-makers to successfully navigate the complexities that can be involved in infrastructure construction and especially existing facilities retrofits and remodels.

Goal:

1. Make efficient use of the City's Capital Improvement Budget to leverage budgets that may already be approved for building component improvements by including those improvements in supplemental grant funding applications.
2. Pursue grants and stimulate private investment to fund resilience projects on the Civic Campus.

Objective:

1. Define a grant competitive renewable energy and resilience project
2. Apply for and win grant funding.
3. Identify partners who can co-invest and equitably share the costs and benefits.
4. Create or hire a project administrative entity.

Guideline:

1. Follow the resilience planning framework as defined in this plan.
2. Understand and follow grant submission requirements and guidelines.
3. Meets the project cost requirements of grant and private funding sources.
4. Achieves a proposed project funding ratio of \$1 of City investment to \$5 of non-City investment (from other sources such as grant funding or private investment).
5. Responds to both aspects of resiliency – hazard event response and social/economic sustainability).
6. Includes scope of work elements that respond to needs of marginalized communities and supports recruitment of partnerships within those communities.
7. Has the capacity to track and prepare grants with partners on an annual basis to support investment in the Civic Campus and City overall.

Criteria:

1. Minimizing cost to the City.
Measure: City investment should not exceed 20% of the grant cost.
2. Have a project partner (s) who share common interest and who want to share the costs and benefits of investing in the City.
Measure: Develop memorandum of understanding to establish and guide roles during project definition.
3. Sharing capital and operational cost equitably.
Measure: Approve finance agreements to initiate projects and secure funding between partners.
4. Give an entity the capacity to pursue grant funding, define a project, find partners, and form agreements to build and operate a project.
Measure: City Council action to define the role and responsibilities of an entity to advance grant funded projects.
5. Have an approved project.
Measure: City Council action approves project to move forward.

VI. CONCEPTS & PROJECTS

Candidate Scenarios

The four candidate energy concept scenarios were defined and evaluated in the development of this plan are listed below. As noted in Chapter IV, Selecting the Southeast Priority Edge, because the Northern edge of campus has significant resilience already through backup generation at the WWTP, these scenarios focus on the Southeastern campus edge to enhance resilience where there is an existing gap and create greatest opportunity for improved community refuge. All provide renewable and resilience energy to the Southeast edge of the Civic campus and are generally configured as variations of the system schematic shown below. See Appendix E: Summary of Relevant Concepts for Civic Campus for more detailed information on each of these scenarios.

Scenario 1 - Solar Rooftop only

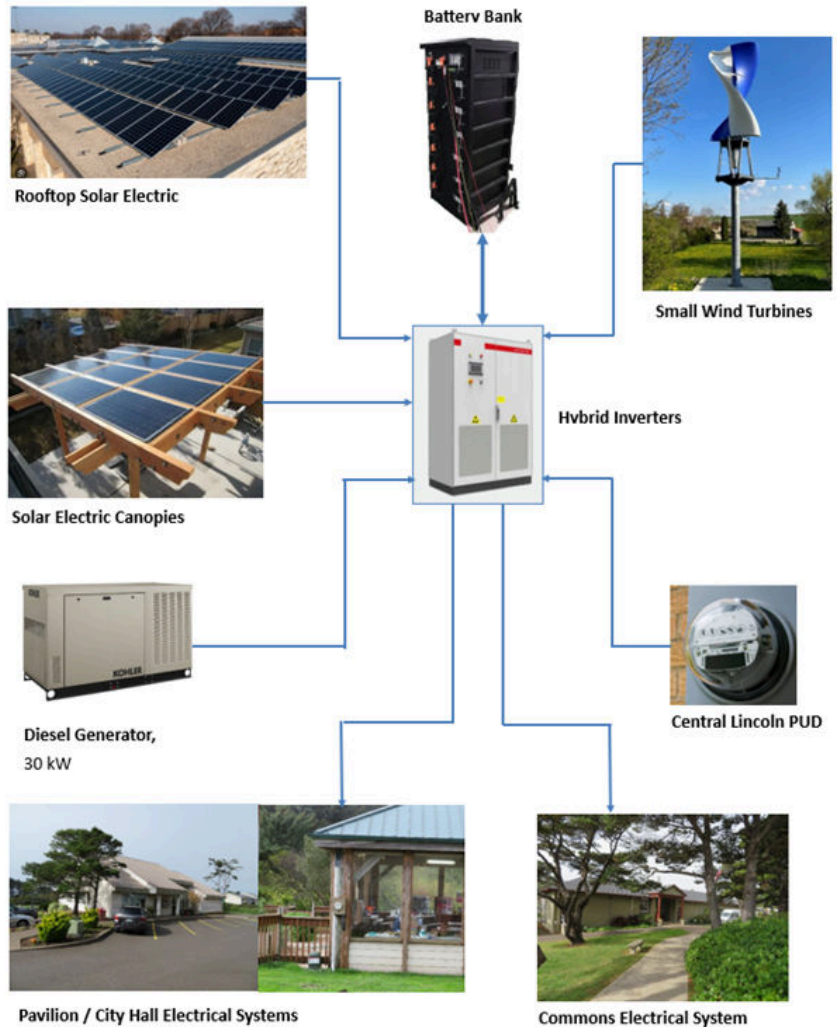
Scenario 2 - Solar Roof Top with Wind (no Solar Canopies)

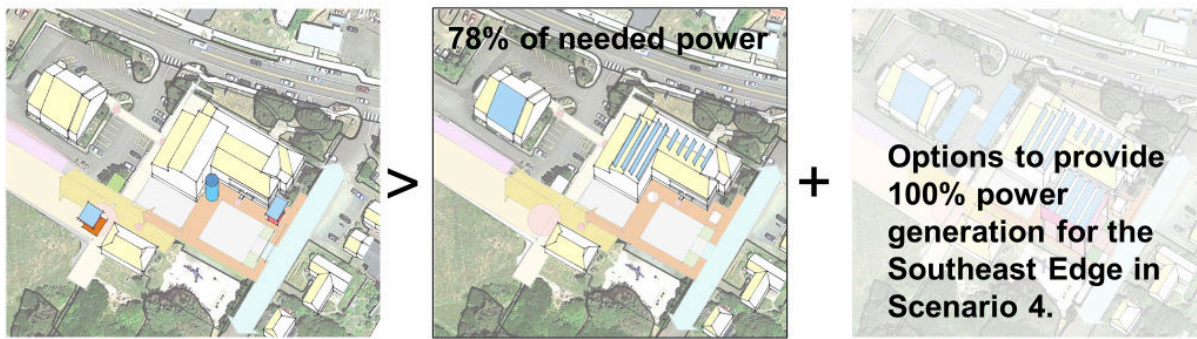
Scenario 3 - Full Solar and Wind (with Solar Canopies)

Scenario 4 - Optimized Solar only (Canopies and Roofs)

All scenarios build upon a basic electrical infrastructure foundation that includes upgraded electrical equipment rooms and site distribution that facilitates connection to energy generation equipment and electrical loads in the Southeast edge. Conceptually, these scenarios are all variations of the system illustrated above.

Based on the comparatively poor performance associated with small scale wind turbines, only Scenarios 1 and 4 were carried forward for more detailed performance and budget analysis as *Candidate Project Options*. As candidate projects, these options were further structured to allow sequential additions to a base project option (Scenario 1) that could provide at least 78% of the total Southeast edge annual electricity needs (following implementation of building energy efficiency measures). Sequential project additions were excerpted from scenario 1 and defined as scenario 4 that would provide all of the annual electricity requirements and achieve Net Zero Energy performance in the Southeast edge. Both scenarios were further evaluated for their potential to become a priority project that has the highest success potential to be included in a subsequent \$1 million ODOE construction grant.





Anticipated Projects

Scenario 1

Scenario 4

Image: Candidate concept scenarios also anticipate community goals for bathrooms, kiosks, and rainwater collection as well as the basic infrastructure locations that connect the Pavilion, City Hall, and Commons as a refuge for services that have 100% of the power needed to operate facilities following a hazard event.

Candidate Scenario Concepts

The candidate scenario concepts are aligned with the site development framework and project goals (as defined in Sections IV and V of this plan) that are applicable to the Southeast edge. In the southeast corner, there are several scenarios and opportunity sites within which to add solar panels on the roof or on standalone canopies.

Scenario 1

Project candidate options were somewhat limited within project scenario 1. In addition to the base scope that covers supporting electrical equipment and electrical site distribution, the scope variations involve the location, configuration, and capacity of rooftop solar panels. Three additive scope of work definitions were ultimately defined as an outcome of the project performance evaluations.

Option 1A: Commons Rooftop Solar: 49.56 kW racked installation that generates 54,070 kWh annually (53.2% of annual SE edge use after efficiency and 15% of winter months electricity use).

Option 1B: Commons Rooftop Solar & City Hall Center Roof Area: 49.56 kW racked installation & 29.4 kW flush-mounted panel installation that generates 78,463 kWh annually (77.2% of annual SE edge use after efficiency and 22% of winter months electricity use).

Option 1C: Commons Rooftop Solar & City Hall Entire (west-facing) Roof Area: 49.56 kW racked installation and 51.24 kW flush-mounted panel installation that generates 98,542 kWh annually (96.9% of annual SE edge use after efficiency and 27% of winter months electricity use).

Scenario 4

For concept Scenario 4, six project options were defined, all of which considered different locations, construction types, and materials. The variations were significantly more complex than scenario 1 with varying site structures and canopies that all would include additional solar photovoltaic panels but would also create site amenities that could enhance community use of the site in different ways. Each

had potential tradeoffs in potential to reinforce site design objectives, support covered activities outside, or provide outdoor for community activities.

See Appendix E Summary of Relevant Concepts for Civic Campus for more details.



Caption: Six candidate options were considered to boost collection capacity to generate as much power as would be required to sustain the Southedge activities for up to 3 months when power generation is at its lowest.

Evaluation of these candidate project options was more complex than the energy performance evaluation executed for scenarios 1 and 4. Feedback from the community was solicited during the in-person open house, and the candidate options were scored within a four-star scoring system across multiple benefit categories, as shown below (next page). The mass timber barn site structure option scored the highest but as discussed further in this section, comes with a significant first cost that will preclude it from being submitted for grant funding in the next grant cycle. Energy performance associated with project option 4 is summarized below (additive to Option 1C).



| Benefit | Simple Porch | Big Porch | Barn Metal | Barn Mass Timber | Pergola | Commons Parking |
|-------------------------|--------------|-----------|------------|------------------|---------|-----------------|
| Cultural | *** | **** | **** | **** | * | * |
| Economic | **** | **** | **** | **** | ** | ** |
| Social | *** | **** | **** | **** | ** | ** |
| Resilience | ** | *** | **** | **** | ** | ** |
| Recreation | ** | *** | **** | **** | *** | ** |
| Maintenance | **** | **** | ** | *** | *** | *** |
| Power Generation | ** | *** | **** | **** | **** | **** |
| Cost | *** | *** | *** | **** | **** | *** |

The Mass Timber Barn Scored highly as a candidate project with the greatest value proposition but exceeded the ODOE limit of grant funding of \$1,000,000. * = low to **** = high

Option 4A: Mass Timber Barn: 22 kW raked installation on a 60-ft. by 60-ft structure that generates an added 25,036 kWh annually. When added to Option 1C, total renewable power generated is 123,578 kWh annually (121.6% of annual SE edge use after efficiency and 37% of winter months electricity use).

Option 4B: Parking Canopy: 24 kW flush mounted installation on a single 86-ft by 16-ft canopy that generates 25,734 kWh annually. When added to Option 1C, total renewable power generated is 124,285 kWh annually (122.3% of annual SE edge use after efficiency and 35% of winter months electricity use).

Priority Project Options Criteria

Goal

1. First cost, meet the \$1 million funding threshold for the ODOE Community Renewable Energy Construction Grant.
2. Maximum Renewable Energy: Maximize renewable energy generation, annually and during the winter months.
3. Minimum fossil fuel such as diesel fuel consumption within the supplemental back-up electrical generator.

Objective

1. Define a grant competitive renewable energy and resilience project
2. Apply for and win grant funding in the next construction funding cycle.

Guideline

1. Follow the resilience planning framework as defined in this plan.
2. Understand and follow grant submission requirements and guidelines.

Criteria

1. Reduced energy use in buildings. **Measure: Southeast edge electricity use is reduced by at least 20% relative to recent billing history.**
2. Maximum renewable energy generated. **Measure: Solar system provides at least 78% of Southeast edge electricity after efficiency measures.**

Priority Project Options Budget and Phasing Analysis

Budget analysis was undertaken to evaluate the best priority project candidate to carry forward into a \$1 million ODOE construction grant application. Project option 1B, as summarized below, exhibited a potential project budget that indicated potential success in a subsequent grant application. While the benefits are predominantly about electrical power resiliency and energy cost savings, a number of infrastructure benefits are anticipated to accrue to the City based on the scope definition for Option 1B. Note that a detailed scope of work including a drawing package has been developed and will be submitted as part of a grant application upon approval for the Yachats City Council.



| Option | Leveraged Projects | A. Roof Option (1b) | B. Barn Option | C. Parking Solar Canopy |
|---------------------|--|--|---|--|
| Program | Water Collection, Filtration, and Distribution with toilet and kiosk facilities. | Electric Infrastructure (\$390,000) with roof mounted solar panels on City Hall and Commons building | Electric Infrastructure (\$390,000) with a freestanding barn to hold up the solar panels. | Electric Infrastructure (\$390,000) with 1 or 2 freestanding canopies with solar panels installed. |
| Economic Social | Yes | Mainly Power | Yes | Mainly Power |
| Grant Funded | Future | \$850,000 | \$1,000,000 | \$1,000,000 |
| City/Partner Budget | Future | \$148,000 | \$903,000 | \$345,000 |
| Project Budget | TBD | \$998,000 | \$1,903,000 | \$1,345,000 |

Caption: The first phase would include the electrical infrastructure, be competitive during a grant application process and be affordable to the City.

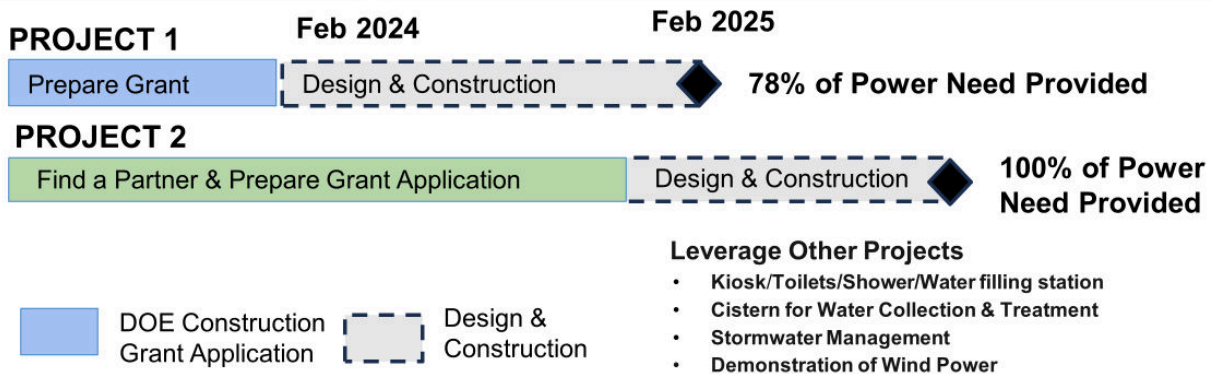
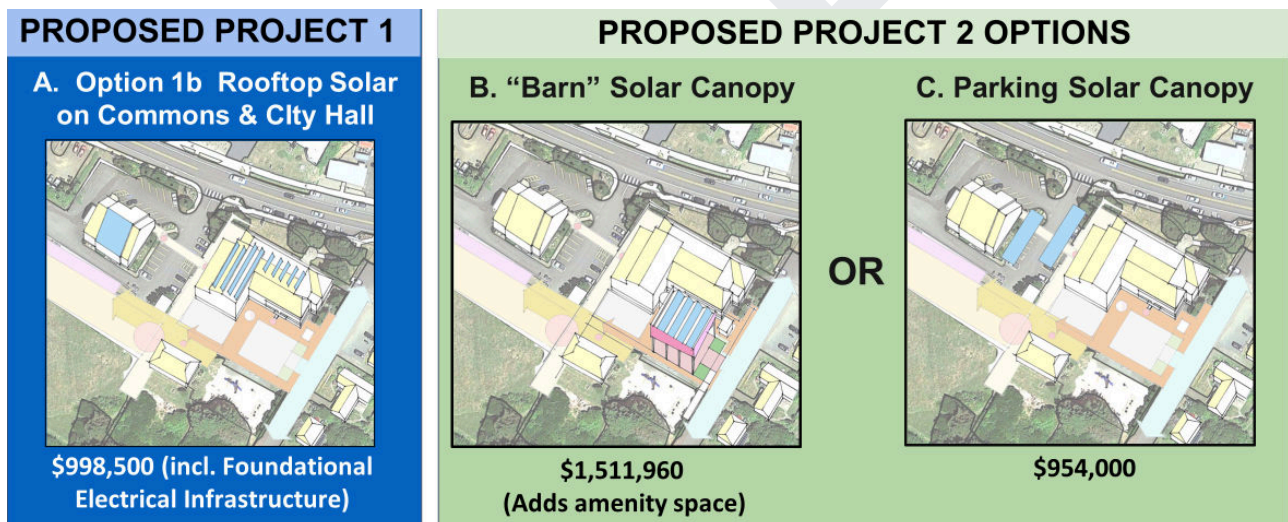
Significant scope of work elements in Option 1B include:

- Basic electrical system infrastructure: New relocated main panel, new sub-panels and load circuiting, rehabilitated generator, conduit and conductor to interconnect buildings.
- Solar system: Premium photovoltaic panels (roof mounted), hybrid inverters, batteries, and controls.
- Efficiency measures: Lighting upgrades, heat pump upgrades, floor insulation, heat pump water heaters, HVAC controls re-commissioning.

The back-up power capacity and functionality will be much improved due to this project. In addition, electrical energy costs will be significantly reduced, visual and thermal comfort will be improved, and general safety for operations and maintenance will be improved. The basic electrical infrastructure work is defined to facilitate future expansion of the renewable energy system.

Phasing

In general, the Southeast edge project concept fully supports project phasing and ongoing site improvements to the Southeast edge (as illustrated below) while not precluding the City from undertaking additional work in the North edge.



Proposed Project Phasing: The least expensive cost to the city which derives the needed electrical system is contained in the proposed grant application priority project. This initial project anticipates a second step to generate 100% of the power needed for the Southedge of the Civic Campus after a hazard event during the winter when the solar collection potential is at its lowest. See Appendix F Final: 5.1 Assessment of Leading Candidate Project.

VII. NEXT STEPS

The Yachats Civic Campus Resilience Plan should be adopted with the following Plan Strategies, Preferred Priority Project, and Implementation Priorities.

Plan Strategies

The resilience plan for the City through the CREPG has three primary scales to support community cohesion around critical facilities that the community needs to strengthen to anticipate and recover from more frequent hazard events. This includes the ideas uncovered during community engagement that can be expressed as strategies that are to be deployed across the City Scale, those at the Civic Campus Scale, and at the building scale within the Civic Campus. These strategies are supported by the efforts of public policy, capital improvement plans, and co-investment with partners in the business community as well as federal, state, and county governments.

| City-Scale Resiliency | | | |
|---|---|---|--------------|
| Strategy | Action | Status | Lead |
| Emergency Preparedness Plan Amendment since adoption of NHMP | City Adoption | Pending | City Manager |
| Expand Fuel Storage for Diesel Backup generators. | Locate 5,000 gallon tank at County Fire Station or in separate smaller tanks that can be located on both sides of Yachats River. | Pending | City Manager |
| South of Yachats River Refuge and Resilience Center | Consider applying for an ODOE Planning grant to site a facility meeting the needs and goals of South of Bridge residents | Pending | City Council |
| Civic Campus Scale Resiliency & Project Phasing | | | |
| Strategy | Action | Status | Lead |
| N Edge Resilience | Connect buildings on the North Edge to the 250 Kw Emergency Generator and add solar panels to reduce reliance on diesel fuel for emergency power. | Future g ODOE construction Grant for \$1,000,000. | City Manager |
| SE Edge Resilience & Refuge | Upgrade electrical infrastructure and add rooftop solar panels to reduce reliance on diesel fuel for emergency power and provide power for up to 3 months during the worst solar power generating days. | Submitting for ODOE CREPG construction Grant for \$1,000,000. | City Manager |
| Buildings Scale Improvements | | | |
| Strategy | Action | Status | Lead |
| Energy efficiency measures to improve energy efficiency for the buildings on the North and Southeast Edges of the Civic Campus. | Capital Improvement Plan to update buildings through ongoing maintenance. Seek grant funding for sensors and controls that allow shutdown of circuits during a prolonged outage. | Pending | City Manager |

Many needs were identified during the course of this planning effort, many in addition to those that have been organized and evaluated in some depth within and around the Civic Campus. The table below provides an overview of additional needs that warrant serious consideration and action as follow-up “projects” related to community and City resiliency.

| CITYWIDE INTEGRATED SYSTEMS | Where & How Much | Resiliency Value |
|-----------------------------|--|---|
| Basic Needs | Possible Location | Role |
| Refuge | Civic Campus Commons, City Hall, Church, Library etc | Shelter, warmth, |
| Energy Generation | Civic Campus Buildings | Power |
| Fuel Storage | Fire Station | Power, Diversity of Back up power |
| Fire Protection | Fire Station | Life Safety |
| Caches | Citywide, South of Bridge | Emergency Supplies |
| Water Filtration & Storage | South Edge Civic Campus, South of Bridge | Clean Water |
| Central Distribution Center | South Edge Civic Campus City Hall & Commons | Access to Food & Water |
| Mobile Generators | North Edge Civic Campus WWTP (& City Hall/Commons?) | Access to power |
| Information Center | Civic Campus, Kiosk near 4th | Tourism, Communication |
| Satellite phones, radios | City Hall, WWTP | Communication |
| Mobile Batteries Devices | North Edge Civic Campus WWTP (& City Hall/Commons?) | Access to Power |
| Refrigeration | Commons | Access to Food |
| Access - Bikes & Peds | Trails | Access |
| Vehicle Charging | Bike & EV Charging, City Fleet at WWTP | Batteries, tourism amenity, City fleet |
| Hygiene | Restroom Kiosk at Civic Campus South Edge | Hygiene |
| Training | City Hall/Commons Annual Event | Emergency Preparedness, Education |
| Signage | Trails, Meeting Points, Civic Campus Signage, Reader Board | Communication, Tourism, Education, Wayfinding |
| Medical Supplies | Caches, City Hall, Commons | Life Safety |
| Lighting | Trailheads, wayfinding to refuge & meeting points | Access, Communication, Wayfinding |

Citywide systems integration supporting elements of resilience for the City can be achieved by adopting the Civic Campus Resilience Campus Plan.

Preferred Priority Project for February 2024

As discussed in previous sections, the preferred priority project is Project Option 1. Final project cost determination is anticipated to narrow the selected project to one of the following that is priced under the budget in the subsequent grant application in February of \$1,000,000.

- Scenario 1A - Rooftop Solar on Commons Building (flat roof areas only)
- Scenario 1B - Rooftop Solar on Commons & City Hall (center west-facing roof section only)
- Scenario 1C - Rooftop Solar on Commons & City Hall (all west facing roof sections)

Subsequent Project Planning, Following February 2024

Two additional options were identified that respond to the community vision and goals from public meetings, surveys and advisors. These would require co-investment with City funds, those of another partner, or through a subsequent grant application.

- Solar Canopy Adjacent to Commons and 4th Street - Scenario 4a (as originally Option 4 Barn) as a covered public space for economic and social activities.
- Solar Canopy over Parking - Scenario 4B is revised to not build the Barn but instead place solar panels on structures over the parking stalls between the Commons and City Hall. It would be a less expensive to put panels over the parking stalls as a second phase than to build a Barn with the program and finish features that have been discussed in community meetings.

The second subsequent project would involve initiating a planning process to develop a refuge and resilience center south of the Yachats River.

- Identify a site that is suitable to withstand anticipated hazard events.
- Confirm its program elements such as caches, renewable power, communication, and means of access across the Yachats River.

Implementation Priorities

1. Select a priority project to include for grant funding in partnership with ODOE.
2. Form a grant implementation team who can assist the City in the formation of partnerships to pursue grant applications that lead to programs or capital improvements supporting underrepresented and marginalized as well as those more specifically experiencing racial injustice.
3. Partner with organizations working on projects that include BIPOC communities such as Tribal entities seeking to promote restorative justice, social cohesion, and enduring economies which are foundational to resilience.

VIII. APPENDICES

- A. Audit Facilities in Civic Campus
- B. Assessment of County Electric Improvements
- C. Community and Project Parameters
- D. Criteria: Renewable & Resilient Facilities & Strategies
- E. Summary of Relevant Concepts for Civic Campus.
- F. Assessment of Leading Candidate Concept.
- G. Community Engagement
 - Public Engagement Process and Procedures
 - Workshop 1
 - Open House 1
 - Open House 2
 - Community Survey Responses
- H. Relational Accountability Plan
- I. Project Reporting.