CLATSOP COUNTY PLANNING COMMISSION

REGULAR MEETING AGENDA

GoTo Meeting

Tuesday, April 12, 2022 at 10:00 AM

ZOOM MEETING

1. Zoom Meeting Instructions and Link

CALL MEETING TO ORDER

ROLL CALL

ADOPT AGENDA

BUSINESS FROM THE PUBLIC: This is an opportunity for anyone to give a brief presentation about any land use planning issue or county concern that is not on the agenda.

MINUTES:

2. Per ORS 192.650, written minutes will no longer be prepared. The video recording of the meeting will be provided to the public, consistent with public meeting recording requirements.

PUBLIC HEARINGS

3. Review of final draft of the TEFIP and formal recommendation to the Board of Commissioners
4. Consider a request to continue discussion of revisions to Goal 9 to the May 10, 2022 regular Planning Commission meeting.
5. Review of Goal 11 - Draft 03 and recommendation to the Board of Commissioners
6. Goal 12: Transportation
7. Review of Goal 13: Energy Conservation - Draft 02. This item was continued from the March 8, 2022 meeting.
8. Review Goal 14: Urbanization - Draft 03 and provide a recommendation to the Board of Commissioners.

WORK SESSION

9. Review of draft FY 2022-23 Land Use Planning Work Plan

PROJECT STATUS REPORT

10. Updated list of projects reviewed and/or approved by the Planning Commission.

DIRECTOR'S REPORT

ADJOURN

NOTE TO PLANNING COMMISSION MEMBERS: Please contact the Community Development Department (503-325-8611) if you are unable to attend this meeting.

During the COVID-19 pandemic, the Clatsop County Planning Commission remains committed to broad community engagement and transparency of government. To provide an opportunity for public testimony while physical distancing guidelines are in effect, the Commission will host virtual meetings on Zoom Meeting.

To join the meeting from your computer, tablet or smartphone.
https://co-clatsop-or-us.zoom.us/j/96938108959?pwd=QjRKeVp4UVd1SWw3OWxuOFlsVEFRUT09

Dial by your location: +1 669 900 6833 US

Meeting ID: 969 3810 8959
Passcode: 587994

Those wishing to provide testimony on public hearings or provide oral communication at the designated time must register in advance by calling 503-325-8611 or emailing ghenrikson@co.clatsop.or.us. You will be notified when your three-minute presentation is scheduled. Comments may also be submitted via email to ghenrikson@co.clatsop.or.us to be read at the meeting.

As necessary Executive Session will be held in accordance with but not limited to: ORS 192.660 (2)(d) Labor Negotiations; ORS 192.660 (2)(e) Property Transactions: ORS 192.660 (2)(f) Records exempt from public inspection; ORS 192.660 (2)(h) Legal Counsel

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Agenda packets also available online at www.co.clatsop.or.us

This meeting is accessible to persons with disabilities or wish to attend but do not have computer access or cell phone access. Please call 325-1000 if you require special accommodations at least 48 hours prior to the meeting in order to participate.

Clatsop County
Community Development – Planning

800 Exchange St., Suite 100
Astoria, OR 97103
(503) 325-8611 phone
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www.co.clatsop.or.us

Clatsop County Planning Commission Regular Meeting Zoom Meeting Instructions

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Clatsop County

TO: Clatsop County Planning Commission Members

CC: Joanna Lyons-Antley, County Counsel
Julia Decker, Planning Manager
Clancie Adams, Permit Technician

FROM: Gail Henrikson, Community Development Director

DATE: March 23, 2022

RE: **ORS 192.650: RECORDING OR WRITTEN MINUTES REQUIRED**

Per ORS 192.650(1), the "governing body of a public body shall provide for the sound, video or digital recording or the taking of written minutes of all its meetings. Neither a full transcript nor a full recording of the meeting is required" however, the written minutes or the recording must give a true reflection of the matters discussed at the meeting and the views of the participants.

Pursuant to ORS 192.650 and guidance from County Counsel, staff will no longer prepare written meeting summaries or minutes for the Planning Commission meetings. Instead, the video of the meeting will be posted in its entirety on the County's website. Posting of the full video will ensure compliance with ORS 192.650 and guarantee that all discussion is available for review.

Clatsop County – Land Use Planning

TO: Clatsop County Planning Commission Members

FROM: Gail Henrikson, Community Development Director

DATE: April 5, 2022

RE: **TSUNAMI EVACUATION FACILITIES IMPROVEMENT PLAN (TEFIP): FINAL REPORT AND IMPLEMENTATION MEMO**

BACKGROUND

The Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) jointly manage the Transportation Growth Management (TGM) Grant Program. The TGM Program is for local governments to prepare transportation-related planning documents, including Transportation System Plans, Comprehensive Plan Amendments, and Corridor Plans.

In May 2019, the Board of Commissioners approved Resolution and Order #2019050043, authorizing staff to apply for a TGM grant to prepare a Tsunami Evacuation Facilities Improvement Plan (TEFIP). This plan will augment existing efforts by the Emergency Management Department of Clatsop County, including its Tsunami Wayfinding project. An emphasis will be placed on identifying trails and paths that can provide year-round recreational opportunities while also functioning as evacuation routes in the event of a disaster.

On August 22, 2019, the County received an award letter from the Oregon Transportation and Growth Management Program. In August 2020, ODOT contracted with Parametrix to be the consultant charged with leading the plan preparation. A kick-off meeting with Parametrix, ODOT and County staff members was held on January 7, 2021.

To date, Parametrix and County staff have conducted three Project Advisory Committee meetings on May 6 and September 16, 2021, and on January 27, 2022. Three public open houses were also held on May 6 and September 16, 2021, and February 1, 2022. A project website has been created, including an online questionnaire and comment map where community members can provide input and recommendations. Parametrix staff has also involved Consejo Hispano in its public outreach program.

Parametrix staff have also presented updates on the project to the Board of Commissioners during work sessions held on March 10 and November 10, 2021, and March 16, 2022.

At the last work session conducted March 16, 2022, Parametrix staff presented outcomes of the planning process, public input and draft recommendations. Recommended infrastructure improvements include:

- Trail and evacuation route improvements
- Trail amenities

- New assembly area locations
- Considerations for vertical evacuation facilities
- Implementation actions

The draft report has been reviewed by the Recreational Lands Planning Advisory Committee (RLPAC) on March 24 and March 31, 2022. The RLPAC recommended that the Board of Commissioners approve the final TEFIP report with the following amendments:

- The report should include consideration of the location of power lines versus the location of trails and assembly areas
- Assembly areas should consider the needs of persons with accessibility issues
- The report should emphasize the need to have continuing conversations with all stakeholder agencies. Specifically, the RLPAC was concerned about ensuring that the Oregon Department of Forestry was included in all future discussions and decisions regarding trail and assembly point locations.

Following review of the TEFIP final report and a formal recommendation by the Planning Commission, edits will be made to the report before presenting it to the Board for final adoption. The project is anticipated to be completed in May-June 2022.

REQUESTED ACTIONS

- Review the draft TEFIP final report
- Provide comments regarding content and any needed revisions
- Make a formal recommendation to the Board regarding adoption of the final TEFIP
- ***Suggested Motion (if no amendments needed):*** *I recommend the Board of Commissioners adopt the Tsunami Evacuation Facilities Improvement Plan as presented by staff and as recommended by the Recreational Lands Planning Advisory Committee.*
- ***Suggested Motion (if additional amendments needed):*** *I recommend the Board of Commissioners adopt the Tsunami Evacuation Facilities Improvement Plan as presented by staff and as recommended by the Recreational Lands Planning Advisory Committee and as revised by the Planning Commission.*

Exhibit A:	TEFIP Final Report
Exhibit B:	TEFIP Implementation Memo

EXHIBIT A

TEFIP Final Report (Draft)

Clatsop County Tsunami Evacuation Facility Improvement Plan

Prepared for

Clatsop County
800 Exchange St # 410, Astoria, OR 97103

Prepared by

Parametrix
700 NE Multnomah, Suite 1000
Portland, OR 97232-4110
T. 503.233.2400 T. 360.694.5020 F. 1.855.542.6353
www.parametrix.com

CITATION

Parametrix, 2021. Clatsop County Tsunami Evacuation Facility Improvement Plan. Prepared by Parametrix, Portland, Oregon. March 2022.

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EXECUTIVE SUMMARY

The Executive Summary will be completed after review by County Board.

1. INTRODUCTION AND BACKGROUND

1.1 Introduction

The Clatsop County Tsunami Evacuation Facilities Improvement Plan (TEFIP) is rooted in the need to address the danger posed by a major earthquake and resulting tsunami to coastal Oregon communities. A Cascadia Subduction Zone (CSZ) earthquake and tsunami event along the coast of northern California, Oregon and Washington is predicted to be the largest and most destructive natural disaster to strike the United States. With much of its population living and working in the tsunami inundation area, Clatsop County is especially vulnerable to the potential impacts of a CSZ event. Recommendations within this plan aim to maximize life safety in the event of a tsunami, especially for those community members who may be most vulnerable.

While the primary focus of recommended evacuation facility improvements is to promote life safety, this plan also focuses on facilities that provide recreation benefits through the improvement or creation of trails and other recreation amenities. These facilities will provide safe evacuation routes in the event of a tsunami, as well as year-round opportunities for walking, biking, and hiking for residents and visitors of Clatsop County. Integrating recreation opportunities into the evacuation network also increases community familiarity with evacuation routes. In the event of a CSZ earthquake, evacuees will only have minutes to reach safety ahead of a tsunami. A resident or visitor who frequently uses a trail that leads to high ground will be more familiar and comfortable with that evacuation route should they need to use it. This TEFIP also makes recommendations for trail amenities, recommends locations for establishing additional assembly areas and identifies areas of the County where vertical evacuation structures may be considered.

This TEFIP was developed through engagement with county staff, elected and appointed officials, key stakeholders, and Clatsop County community members. This plan assesses the risk and vulnerability of the County's transportation system; analyzes existing evacuation facilities and needs for improvement; identifies, evaluates, and selects highest priority evacuation facility improvements; and prioritizes options that provide dual use and year-round community benefit.

1.2 TEFIP Purpose

The primary objective of a TEFIP is to identify tsunami evacuation routes and provide for development of infrastructure needed to facilitate and improve effective evacuation. The County's coastal cities of Astoria, Warrenton, Gearhart, Seaside, Cannon Beach, and numerous unincorporated communities are vulnerable to the risks of earthquake and tsunami. In addition to damage from the earthquake itself, an accompanying tsunami could inundate low-lying coastal areas. The Oregon Department of Geology and Mineral Industries (DOGAMI) has mapped the tsunami inundation hazard areas and has developed a series of maps and evacuation scenarios to assist coastal community planning and preparedness efforts.

Increasing tsunami resilience through local planning is a major priority of Clatsop County. Extensive tsunami resilience efforts have been completed in the project study area. County staff and stakeholders are working to address tsunami hazards through land use planning policies and regulations. The County has initiated an emergency wayfinding signage program and adopted its Multi-Jurisdictional Natural Hazard Mitigation Plan in March 2021. County planning staff have completed work to identify a Tsunami Hazard Overlay Zone, although this has not been adopted by the Board of Commissioners. The County is also in the process of updating its comprehensive plan, including Goal 7, Natural Hazards Mitigation.

The results of the County's on-going resilience work have been incorporated into or referenced by the TEFIP, particularly in identifying evacuation and co-located recreational improvements. The TEFIP identifies and prioritizes dual-use routes that can both serve as emergency evacuation routes and as year-round facilities, such as off-road bike paths, hiking and equestrian trails. The plan focuses on planned and existing routes, including underutilized or underpublicized trails and rights-of-way, as well as strategic recommendations for new trails or routes, where no suitable trails or evacuation routes exist today.

1.3 Process Summary

This TEFIP was created with input from county staff, elected and appointed officials, key stakeholders, subject matter experts, and Clatsop County community members. The planning process included the following tasks:

1.3.1 Public Outreach and Engagement

Outreach to and engagement with Clatsop County occurred throughout the project, with three online open houses and three webinars occurring at key milestones in the process. The plan was guided by a Project Advisory Committee (PAC) consisting of representatives from local, county, state, and tribal agencies, community groups, and other area stakeholders.

In addition to the major engagement events, project information was provided on the project website (www.clatsopTEFIP.org), a project information video, and a project fact sheet. Information was provided in both English and Spanish. The project team coordinated with Consejo Hispano, an Astoria-based community organization, to engage with the Hispanic community in Clatsop County throughout the planning process.

1.3.2 Define Goals and Project Objectives

Goals and objectives for the TEFIP and planning process were developed based on ongoing hazard mitigation planning and through conversations with County staff, leaders, stakeholders, and the community. These goals and objectives guided the creation of the plan and the ultimate TEFIP recommendations.

1.3.3 Understanding Existing Conditions

The project team examined the existing tsunami evacuation network, including gaps in the network and potential opportunities for improvements. Community demographics were analyzed to identify potentially vulnerable groups that may need additional resources for effective evacuation in the event of a tsunami. This stage of the planning process included documentation of land uses and natural and cultural resources in the study area, as well as a review of previous and ongoing relevant tsunami resilience planning efforts.

1.3.4 Develop Evacuation and Trail Options

Based on existing conditions research and community feedback, the project team identified and mapped potential tsunami evacuation facility improvements, including trails, assembly areas, and vertical evacuation structures. Potential improvements were evaluated using screening criteria developed in coordination with county staff and stakeholders.

1.3.5 Identify Preferred Evacuation and Trail Options

Final recommended evacuation facilities were determined through screening criteria assessment and input from county staff, the PAC, the County Board of Commissioners, and public feedback. The project team developed cost estimates for each of the preferred facilities.

1.4 Goals, Objectives, and Evaluation Criteria

1.4.1 Project Goals and Objectives

The goals and objectives below capture the intent of the project outlined in the project scope, as well as goals identified in the County's recently adopted Hazard Mitigation Plan (2021). The goals and objectives reflect the critical role of evacuation facilities as part of the County's transportation system most immediately able to assist residents and visitors at risk in the event of a tsunami. Core objectives provide a step-wise approach to developing the TEFIP and are based on core objectives outlined in the project scope.

1.4.1.1 Project Goals

- **Safety**: Reduce risk to the community from a tsunami event by increasing convenient and accessible evacuation routes that connect at-risk communities to safe areas.
- **Connections**: Expand the connected network of hardened evacuation facilities that can also provide year-round recreational benefits.
- **Equity**: Reduce transportation-related disparities and barriers for communities at risk.
- **Collaboration**: Continue cooperation and collaboration among partners to implement and maintain a coordinated evacuation trails network and tsunami wayfinding signage for Clatsop County.

1.4.2 Core Objectives

- Assessment
    - Assess tsunami risk and vulnerability of the County's transportation infrastructure
    - Determine evacuation needs
    - Evaluate existing evacuation facilities
- Improvements
    - Identify and prioritize needed improvements to evacuation facilities, including evacuation route easement dedications and reservation
    - Prioritize trail options that provide dual use and year-round benefits
    - Identify design considerations, constraints, and recommendations for tsunami evacuation facilities
- Implementation
    - Develop an implementation strategy to prioritize and phase trail improvements
- Engagement
    - Develop and implement a robust community engagement process

1.4.3 Evaluation Criteria

Evaluation criteria in Table 1 are based on the project objectives and were used to evaluate and screen trail concepts, design and amenities. Each criterion was evaluated using an evaluation scale as follows:

- Project/alternative meets or fully addresses the criterion

◖ Project/alternative partially meets or addresses the criterion

□ Project/alternative does not meet or has negative impacts with respect to the criterion

N/A Not applicable

These criteria were applied to screen out those alternatives that should not move forward in the process. Additionally, weighting of the criteria is proposed in the table; weighting indicates how some criteria were emphasized in the screening process.

Table 1. Screening Criteria

Subject	Criteria	Measure	Weighting
User experience	Provides the most comfortable and enjoyable user experience	Degree of separation from auto traffic and/or recreational value	
Safety and security	Provides a clear tsunami evacuation benefit	Follows existing evacuation route or facilitates new/enhanced evacuation connection; and/or project increases access to existing assembly areas	3x
Multimodal connectivity	Increases connectivity of the multimodal network	Increases network connectivity	
Planning, land use, and regulatory impacts	Aligns with the existing County land use plans	Project is compatible with the Comprehensive Plan and TSP	
Property ownership impacts	Minimizes impacts to private property owners	Project would rely on existing ROW and/or require minimal or no new easements	
Directness of travel	Supports directness of evacuation routes	Supports directness of evacuation routes or increases connectivity of the evacuation network so as to reduce evacuation clearance times	
Cost and funding availability	Relative cost and likelihood of funding with grants	Project is low-cost relative to benefit provided and/or has a high likelihood of being funded through grants	
Infrastructure hardening	Increases the resiliency of the existing infrastructure system	Project would increase infrastructure resiliency, including hardening of other transportation system features	
Phasing opportunities	Project may be phased so as to facilitate incremental benefit	Project could be phased to implement useable segment/elements incrementally (or not)	
Accessibility	Facilitates connections for people with physical disabilities	Project is ADA accessible (or not)	2x
Populations served	Enhances evacuation routes or connections for unincorporated communities	Project would provide an evacuation/recreation benefit to a relatively large number of	2x

Subject	Criteria	Measure	Weighting
		people, and/or to vulnerable populations*	

Notes:

*"Vulnerable populations" includes Environmental Justice and Title VI communities, including those that are racial or ethnic minorities, have disabilities, are younger (<18) or older (>65) adults, do not have access to a car, are low income, or have limited English proficiency

1.4.4 Prioritization Criteria

Once trail, amenities, and design alternatives were developed and screened, the project team prioritized investments based on the criteria in Table 2. These criteria are based on the project goals and objectives. Projects are prioritized by timeframe for implementation, with near-term corresponding to higher priority and more easily implemented projects, with long-term corresponding to more costly and difficult to implement projects.

Table 2. Prioritization Criteria

Subject	Criteria
Timeframe for implementation	Relative implementation timeframe, based on ability to fund, design, permit, and implement the project: • Near-term (0-5 years) • Medium-term (5-10 years) • Long-term (10+ years)
Feasibility	Relative feasibility, based on assessment of: • Public support • Cost • Need for easements • Environmental/permitting considerations • Engineering complexity • Ability to phase the project
Relative need	Addresses a documented evacuation and/or multimodal connectivity need, based on assessment of gaps in the existing evacuation and multimodal route network and on public/stakeholder feedback
Relative benefit to communities	Provides a high level of benefit, based on assessment of: • Degree of need • Evacuation and multimodal connectivity benefit relative to cost • Degree to which vulnerable populations would benefit • Public and stakeholder feedback
Potential for grant funding	Project has a high likelihood of being funded through one or more grant programs

1.5 Study Area

The study area for this project extends ¼ mile inland from the edge of the "local" tsunami inundation zone. The local inundation zone that informs the project study area is the "Local Cascadia Earthquake and Tsunami." This local Cascadia earthquake and tsunami inundation area is based on the worst-case scenario Cascadia subduction

earthquake (also identified by DOGAMI as the "XXL tsunami"). This local tsunami generated by an earthquake just off the Oregon Coast is of very large magnitude and thus the inundation area is much larger. Also, unlike a distant tsunami that can be predicted several hours prior to its arrival, this local tsunami can strike the coast within 15 – 20 minutes after the ground stops shaking from the earthquake.

The focus of all evacuation planning is life safety. Because life safety risk is present in all areas potentially subject to inundation during a tsunami event, this project will use the "Local Cascadia Earthquake and Tsunami" ("XXL") as the design event for evacuation facility planning. This means that evacuation planning and facility development will be based on the worst-case scenario, which is consistent with the purpose of the TEFIP to help ensure that all areas potentially subject to tsunami inundation can be effectively evacuated.

1.5.1 Key Characteristics

Clatsop County, Oregon extends more than 30 miles north to south along the Pacific Ocean to the mouth of the Columbia River. The study area includes portions of all five of the County's cities (Astoria, Warrenton, Gearhart, Seaside, and Cannon Beach); unincorporated coastal communities (including Arch Cape); multiple state parks; the Astoria Regional Airport; and the Camp Rilea Military Reservation. The focus of the TEFIP is on unincorporated areas of Clatsop County, but connections to and beyond the limits of incorporated cities were considered.

Future land use reflects the mix of urban and rural areas within coastal Clatsop County and includes designations for future residential and commercial growth areas, conservation areas and resource lands.

Community Assets

The study area includes portions of multiple water districts (excluding incorporated cities). The study area includes portions of three school districts, including Astoria School District #1, Warrenton-Hammond School District #30 and Seaside School District #10. The Sunset Empire Park & Recreation District covers much of the central Clatsop County coastal areas, extending from just south of Sunset Beach State Recreation Site to just north of Cannon Beach, excluding the communities of Gearhart, Cannon Beach, Tolvana Park and the southern coast (from Tolvana Park to the Tillamook County Line).

Coastal Clatsop County is served primarily by the US 101 highway corridor, which runs north-south along the coast. The highway is located within DOGAMI's local tsunami inundation area for much of its length. US 26 connects to US 101 just east of Ecola State Park, north of Cannon Beach, connecting coastal communities to the Portland region. The County maintains an extensive road network. The Oregon Coast Bike Route follows US 101 for its entire length in Clatsop County.

Clatsop County has an extensive recreational trail network, managed by a variety of entities (cities, Oregon state parks, Oregon Coast Trail), and many of the trails are located near the coast. Private timber companies allow the use of many of their roads for hiking and hunting via a free permit system.

There are more than a dozen schools within the study area, including preschools, elementary, middle and high schools and the Clatsop Community College Seaside campus.

1.5.2 Earthquake and Tsunami Event

This plan considers the potential impacts from a local earthquake event (Cascadia Subduction Zone XXL earthquake and tsunami). DOGAMI has recently completed detailed evacuation time and distance modeling, called "Beat the Wave." Mapping produced by DOGAMI is the definitive source of information for the

identification of areas subject to tsunami inundation.[1] DOGAMI has produced several map products depicting tsunami inundation for the Oregon coast:

- Tsunami Inundation Maps (TIM's) depict the projected tsunami inundation zone from five different magnitude seismic events and resulting tsunamis: small, medium, large, extra-large, or extra extra-large (S, M, L, XL, XXL) events. These different modeled events are associated with differing levels of risk in terms of the relative likelihood of tsunami inundation.
- Tsunami Evacuation Maps are public products designed to direct visitors and residents away from low-lying areas in the event of a tsunami. They depict three color zones: orange for the largest expected distant tsunami (from Alaska); yellow for the largest expected local tsunami (corresponding to the DOGAMI "XXL" scenario); and green for safety (or high ground).
- Beat the Wave: DOGAMI has completed detailed tsunami evacuation modeling for several coastal communities to determine the best routes to "beat the wave" to safety for a local tsunami event, also based on the XXL "worst case scenario." These maps show areas of expected tsunami inundation, the most efficient routes to reach safety, and how fast one must travel to get there.
    - For Clatsop County, Beat the Wave evacuation modeling has been completed for Seaside, Gearhart and Warrenton/Hammond, but is not currently available for the rest of the County.

1.5.3 Existing and Planned Evacuation Routes

The County has an established network of evacuation routes. The cities of Warrenton and Seaside have additional designated evacuation routes that have been mapped. Both cities have evacuation route scenarios that show available routes. There may be additional evacuation routes that the project team has not received.

2. EXISTING CONDITIONS

The project team assessed existing conditions within the study area to inform analysis of evacuation route options and the development of final plan recommendations. Relevant plans and policies from the federal, state, county, and local levels were reviewed to provide a planning context for the project. This section describes existing evacuation routes and trail networks in the project area, along with a discussion of gaps and potential opportunities. These were considered by looking at existing facilities superimposed with the tsunami inundation zones developed by DOGAMI. Also included are a summary of land uses, natural and cultural resources, and demographics of the project area.

2.1 Inventory of Evacuation Routes and Trails

This section provides an inventory of existing evacuation routes and known trails in the project area. These were analyzed to identify gaps in the networks, potential vulnerabilities, and opportunities for improvements. In addition to the maps included in this section, the inventory and analysis are mapped in detail in the companion web map.

[1] Tsunami Planning, Department of Land Conservation and Development. https://www.oregon.gov/LCD/OCMP/Pages/Tsunami-Planning.aspx

2.1.1 Designated Evacuation Routes

Clatsop County has roads designated as evacuation routes. These may be signed, as seen in Photograph 1, and often, but not always, lead out of the XXL inundation zone. Designated evacuation routes are illustrated in Figure 1, Figure 2, and Figure 3.

Designated evacuation routes in unincorporated Clatsop County use roadways. The road network has relatively few east-west connections, which is often the most direct route to higher ground. Additionally, several long bodies of water are oriented parallel to the coast north of Gearhart, inhibiting east-west connections. Existing bridges over these waterways were built before current seismic standards and may be vulnerable to an earthquake and its effects (including liquefaction).

Photograph 1. Tsunami Evacuation Route Sign Outside Seaside *(Source: Google Streetview)*

2.1.2 Trails

Known existing trails are mapped in Figure 1, Figure 2, and Figure 3. Few trails are positioned to make practical evacuation routes. One such trail is the Fort to Sea Trail that connects Fort Clatsop National Memorial with Sunset Beach State Recreation Area. The Fort to Sea Trail provides a relatively direct route to high ground from Sunset Beach where there are no roads. It could also provide a route for the residents of the community on US 101 near Camp Rilea. The trail uses a bridge over Sunset Lake.

The Oregon Coast Trail that leads into the north portion of Oswald West State Park may provide a way for people in Arch Cape to get out of the inundation zone, though the landslide risk is high at this segment of the Oregon Coast Trail. An alternative route that heads south on the street grid may be more desirable because it is more direct, offers more space to congregate, and has a lower landside risk.

The trail system in Ecola State Park is fully outside the inundation zone and does not connect to where people will be evacuating. Much of the park is also in an area of moderate to high landslide risk. Most of the trails in Fort Stevens State Park are within the boundaries of the City of Warrenton, as are the small areas of high ground where it would be safe to assemble.

Based on input from Advisory Committee members, two additional trail opportunities have been identified for exploration:

- Arch Cape Community Forest – the community of Arch Cape is acquiring many hundreds of acres of forest land for a community forest in 2022. The effort will include formal planning for recreational and ecological resources within the forest. Existing logging roads could be designated and upgraded to trails that serve as evacuation routes, where appropriate.
- Delaura Beach Road provides access to the beach near Camp Rilea and could be improved as an evacuation route. Road improvements have not been planned or made because the route crosses a wetland, but the route exists and provides an existing connection from the beach.

2.1.3 Assembly Areas

Tsunami assembly areas are designated along the coastal areas of the County and are shown in Figure 1, Figure 2, and Figure 3. Many of these are in areas with moderate to high landslide risk or in areas highly susceptible to liquefaction. Assembly areas are concentrated near populated areas and most are within incorporated cities. Those in unincorporated Clatsop County are near Arch Cape (seven locations), near Sunset Lake and Camp Rilea (four locations), and south of Astoria near the Lewis and Clark River and the Youngs River (seven locations). The portion of the coast from Gearhart north to Fort Stevens is relatively flat and close to sea level. Assembly areas here are located on narrow ridges or small hills that are projected to be just above the inundation level. Those ridges in the north portion of Gearhart are below the inundation level.

2.1.4 Additional Evacuation Route Resources

DOGAMI has also developed evacuation maps to show locations of high ground and directions for getting there for the entire coastal area of Clatsop County. These show the inundation area, assembly areas, and arrows pointing to the nearest high ground. The maps use existing roads and may or may not use designated evacuation routes. DOGAMI's "Beat the Wave" maps take this a step further by looking at areas in more detail and estimating the speed one must travel to escape the inundation zone. Beat the Wave maps are developed for Seaside, Gearhart, and Warrenton and the Clatsop Spit. Beat the Wave analysis is included in the web map for these four communities.

The City of Cannon Beach created a series of pedestrian evacuation route maps for each of the City's neighborhoods[2]. Routes lead to designated assembly areas. This evacuation network is contained within the incorporated City.

[2] The City of Cannon Beach, "Tsunami Evacuation: Pedestrian Route Maps" (2012) https://www.ci.cannon-beach.or.us/emergencymanagement/page/tsunami-evacuation-pedestrian-route-maps

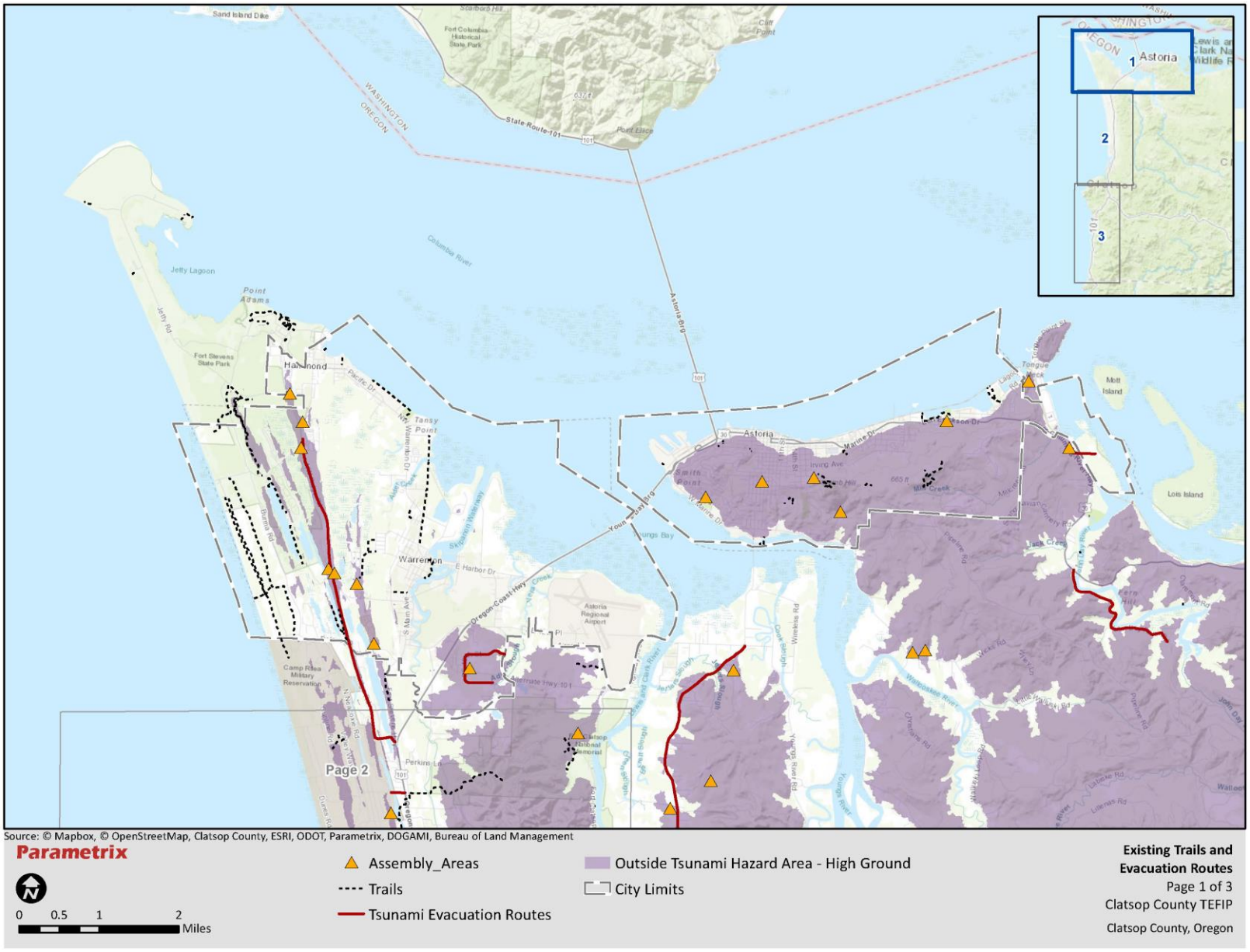

Figure 1. Existing Trails and Evacuation Routes: North Area

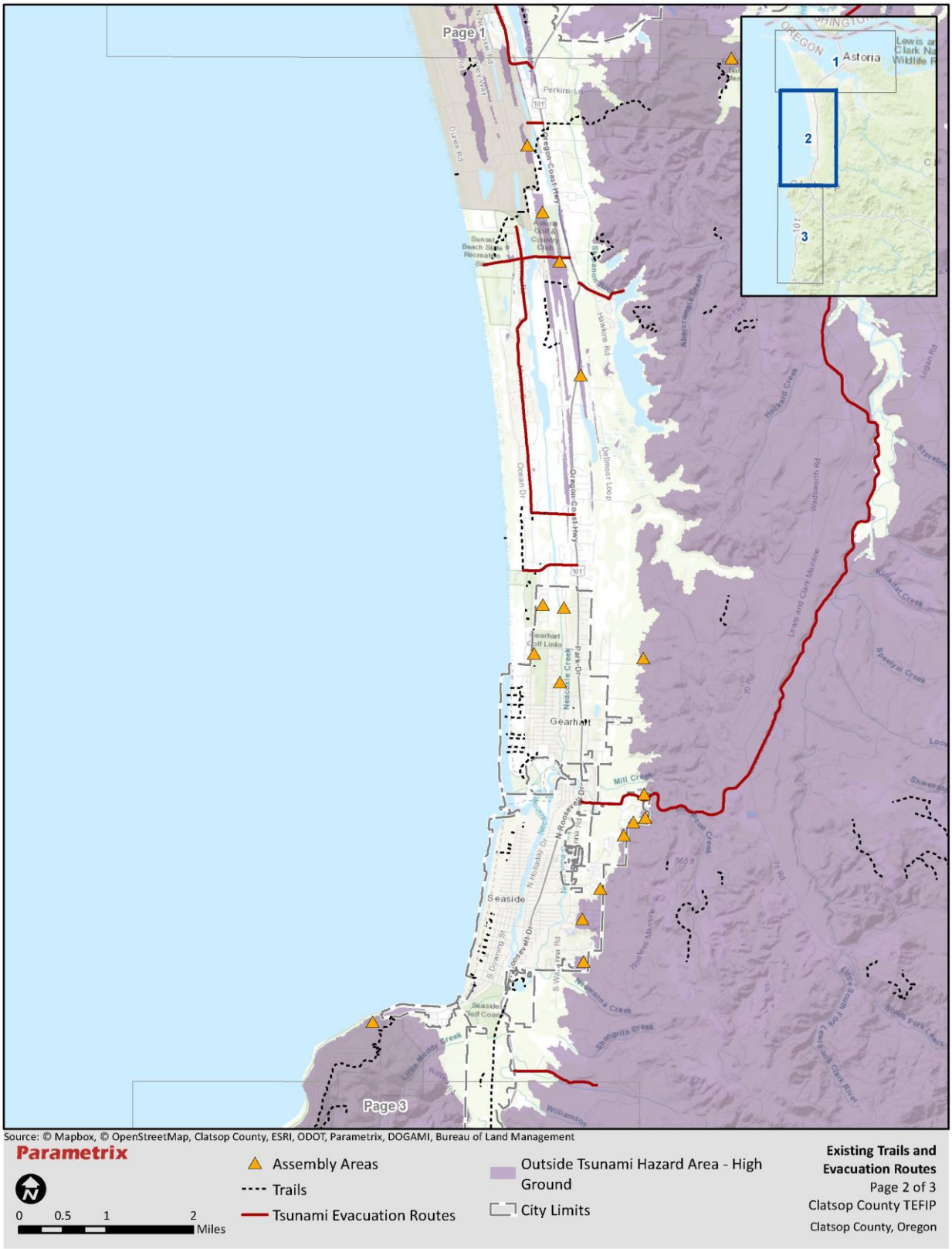

Figure 2. Existing Trails and Evacuation Routes: Central Area

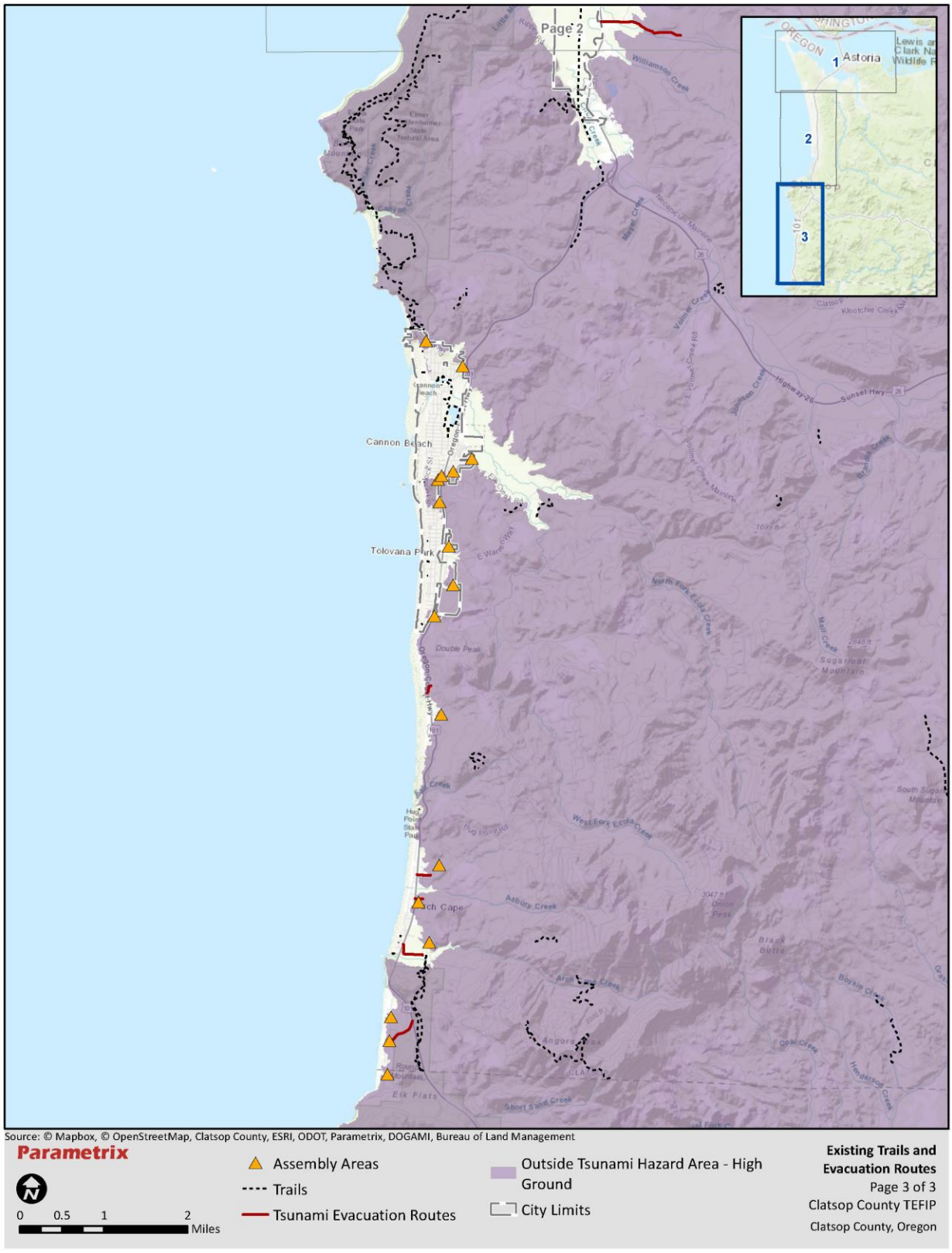

Figure 3. Existing Trails and Evacuation Routes: South Area

2.1.5 Gaps in the Evacuation Route Network

This section catalogs the gaps found in the existing roadway and trail networks for providing effective evacuation. Gaps are organized by three types:

- Areas of Concern
- Network Gaps
- Potentially Vulnerable Bridges and Culverts

These are illustrated in Figure 4, Figure 5, and Figure 6, and mapped in detail in the companion web map.

2.1.5.1 Areas of Concern

Clatsop County's evacuation routes are based on the existing road network, which does not provide adequate egress from the inundation zone from all coastal areas. Table 3 identifies these "areas of concern," where timely evacuation is unlikely, particularly for vulnerable populations. Areas of concern take into account:

- The distance needed to travel to escape the inundation zone.
- Whether the evacuation route relies on potentially vulnerable bridges.
- The adequacy of assembly areas (those in C-01 are located on small areas that are just above the inundation level).
- Whether these insufficiencies are compounded by liquefaction and/or landslide susceptibility.

Much of the project area, especially elevations above the inundation zone, have moderate to high landslide risk (see web map). Each assembly area will need to consider landslide risk and mitigation strategies.

Table 3. Areas of Concern

#	Map	Note
C-01	Figure 5 (Central)	The area north of Gearhart is relatively flat and low-lying. This requires travelling long distances to reach high ground. The land has a high risk of liquefaction. High ground and designated assembly areas are on narrow strips of land that are just above the projected inundation zone. Most streets and trails run north-south, with few east-west routes through this area. Sunset Lake, West Lake, Cullaby Lake, Neacoxie Creek, and other water bodies create barriers for east-west travel. Neighborhoods east of Hwy 101 may need to travel west to reach the nearest high ground.
C-02	Figure 4 (North)	The Clatsop Spit is low lying and requires travelling a long distance to reach high ground. The land has a moderate to high risk of liquefaction. This area has few residents but is a popular place to visit.
C-03	Figure 4 (North)	This community on the peninsula defined by the Lewis and Clark River and Jeffers Slough is surrounded by water and has a long way to travel to reach high ground. The land has a high risk of liquefaction.
C-04	Figure 4 (North)	This community on the peninsula defined by Youngs River and Knowland Slough is surrounded by water and has a long way to travel to reach high ground. The land has a high risk of liquefaction.

2.1.5.2 Network Gaps

Trails in the unincorporated County that could also work as evacuation routes do not always lead directly to high ground or may not easily connect to nearby communities. Table 4 lists gaps in the trail network that, if

addressed, could serve as evacuation routes, as well as gaps in the evacuation route network that could be served by trails.

Table 4. Gaps in the Trail System or Evacuation Route Network

#	Map	Note
G-01	Figure 5 (Central)	Fort to the Sea Trail could connect to higher ground at ridge.
G-02	Figure 5 (Central)	Consider new connection to the east from this neighborhood east of US 101 and near the south end of Camp Rilea. Consider using existing forest road. Existing assembly area is on narrow strip of high ground to the west across 101 and wetlands.
G-03	Figure 5 (Central)	Evacuation route ends in inundation zone. Needs to extend to high ground. Serves Glenwood Community. Consider new facility connecting north to nearby high ground and avoids crossing US 101.
G-04	Figure 5 (Central)	Evacuation route in this area west of Sunset Lake is much too long before it connects to higher ground. Consider a route east or vertical evacuation structures.
G-05	Figure 5 (Central)	Existing evacuation route on Highlands Lane ends within inundation zone.
G-06	Figure 6 (South)	Carnahan Road ends within inundation zone. A short extension to the north would get people to high ground. Existing route requires walking much further to the south.
G-07	Figure 6 (South)	Evacuation route at the south end of Arch Cape ends within inundation zone. Connection needed. Evacuation route ends within inundation area - need connection to higher ground
G-08	Figure 5 (Central)	A trail would provide a fast connection to higher ground. This area has a high risk of landslide.

2.1.5.3 Potentially Vulnerable Bridges

The bridges and culverts along evacuation routes are vital for providing movement. However, most of these structures were built before current seismic standards and are likely vulnerable to a tsunami-causing earthquake. Table 5 lists the bridges and culverts on existing or potential routes. These structures were not inspected for this planning effort. Bridge sufficiency is a federally defined term rated on a scale from 0 (poor) to 100 (very good), considers structural adequacy, whether the bridge is functionally obsolete, and level of service provided to the public.

Table 5. Potentially Vulnerable Bridges

#	Map	Bridge Name	Road/ Trail	Crosses	Year Built	Condition	Sufficiency Rating (2019)	Owner	Notes
B-01	Figure 5 (Central)	Fort-to-Sea-Trail-Pedestrian Culvert	Fort to Sea Trail	US 101	2005	Good	N/A	ODOT	Fort to Sea Trail could make a good evacuation route. Culvert provides a crossing under US 101. Culvert is potentially seismically vulnerable. A detour is possible if culvert fails.
B-02	Figure 5 (Central)	Arch Bridge at Sunset Lake	Fort to Sea Trail	Sunset Lake	2006	Good	N/A	Corps of Engineers (Military)	Fort to Sea Trail could make a good evacuation route. Bridge is potentially seismically vulnerable. Bridge not in database.
B-03	Figure 5 (Central)	Sunset Lake Bridge	Sunset Beach Ln	Sunset Lake	1963	Fair	39.3	Clatsop County	Vital link for evacuating community west of Sunset Lake
B-04	Figure 5 (Central)	Cullaby Creek Bridge	Carnahan Park Rd	Cullaby Creek	1964	Fair	71.0	Clatsop County	On east edge of inundation zone, east of Highway 101. Could be an evacuation connection for the Cullaby Lake neighborhood.
B-05	Figure 5 (Central)	Maki Bridge	Lounsberry Ln	Cullaby Creek	1976	Fair	70	Clatsop County	East of Surf Pines Could be a link to high ground to the east.
B-06	Figure 5 (Central)	Neacoxie Cr Bridge	Highlands Ln	Neacoxie Creek	1975	Fair	86.7	Clatsop County	Just north of Gearhart. Important for evacuating community west of Neacoxie Creek.
B-07	Figure 5 (Central)	Neawanna Creek, Hwy 9	US 101	Neawanna Creek	1930	Fair	49	ODOT	Important route for evacuating the north end of Seaside (high ground is outside city limits)
B-08	Figure 5 (Central)	Stanley Creek, Lewis and Clark Rd	Lewis and Clark Rd	Stanley Creek	2005	Good	96.7	Clatsop County	East edge of Seaside, leads to higher ground.

#	Map	Bridge Name	Road/ Trail	Crosses	Year Built	Condition	Sufficiency Rating (2019)	Owner	Notes
B-09	Figure 6 (South)	Rippet Rd Bridge	Rippet Ln	Circle Creek	[Unknown, not in available data]		76.1	Clatsop County	South edge of Seaside. Allows quick evacuation of one or two homes
B-10	Figure 4 (North)	Unknown Culvert (likely County-owned)	Lewis and Clark Rd (just south of Astoria)		[Unknown, not in available data]				Potential culvert location. This culvert is not in ODOT's database but was inferred from LIDAR data. This is a critical location for evacuating a large area.

2.1.6 Opportunities to Improve Evacuation Routes

Opportunities exist to improve the evacuation network by enhancing existing trails to better serve evacuees, by creating short trail connections, or by locating new assembly areas. Opportunities are listed Table 6 and mapped in Figure 4, Figure 5, and Figure 6.

Table 6. Opportunities to Improve Evacuation Routes

#	Map	Note
O-01	Figure 4 (North)	Trail provides opportunity for evacuation route in Fort Stevens State Park. Connects road (in inundation area) to higher ground. Consider improving trail as evacuation route.
O-02	Figure 4 (North)	Existing trail is an opportunity for an evacuation route in Fort Stevens State Park. Unpaved trail intersects with road leading to higher ground.
O-03	Figure 5 (Central)	Opportunity for new assembly area east of US 101 at the south end of Camp Rilea. Already connected by road/path visible in aerial. Privately owned.
O-04	Figure 5 (Central)	Structure over the creek just south of Sunset Lake appears to be a foot bridge. Could provide an east-west trail connection. Privately owned.
O-05	Figure 5 (Central)	Potential for an assembly area at Polo Ridge Road.
O-07	Figure 6 (South)	Potential for assembly area at the south end of Seaside.
O-08	Figure 6 (South)	Parcels owned by ODOT are platted but undeveloped and unlikely to develop. Opportunity to plan evacuation routes should development become likely.
O-09	Figure 6 (South)	Potential connection to high ground for the Arch Cape community with platted but undeveloped Oceanview Ln.

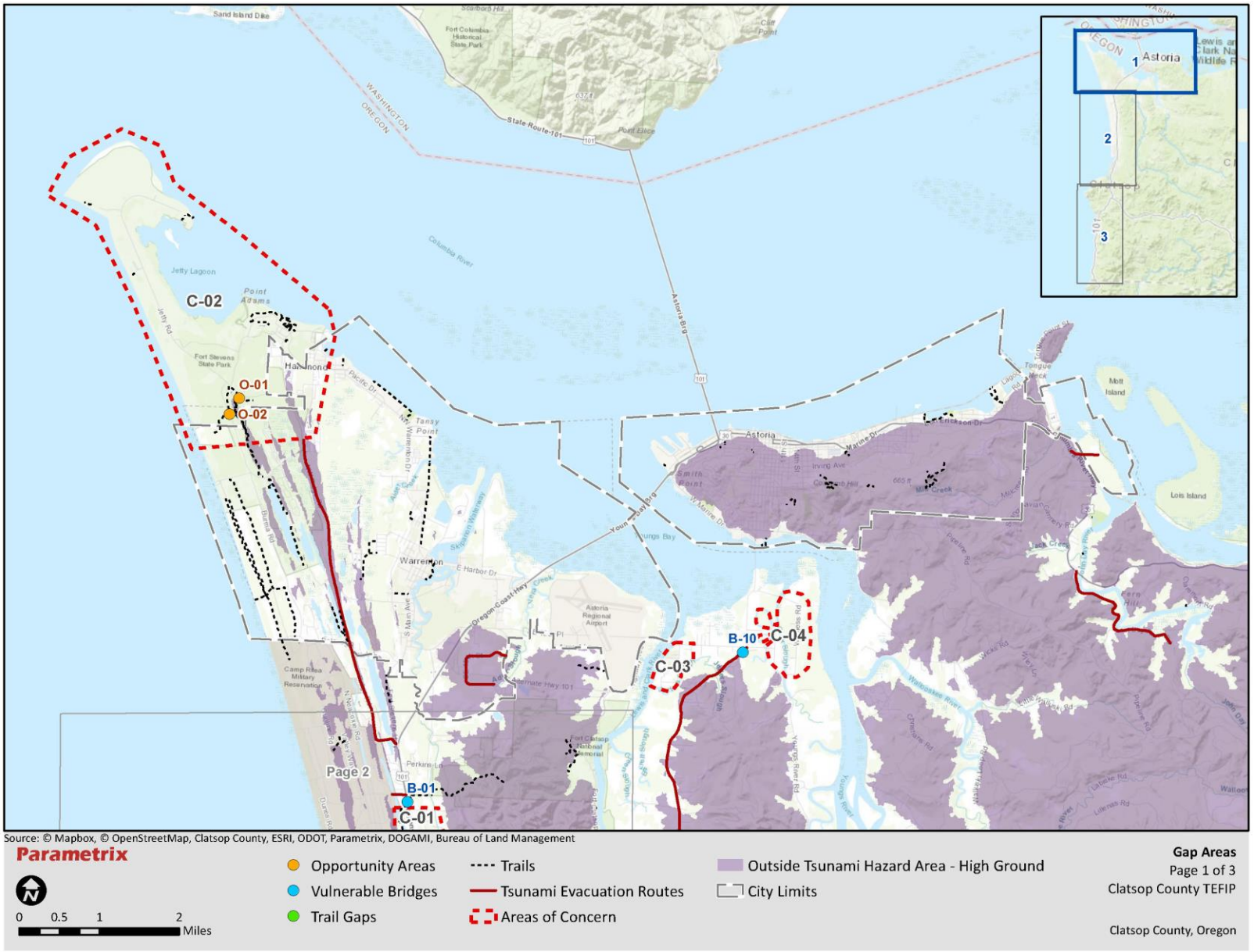

Figure 4. Gaps and Opportunities: North Area

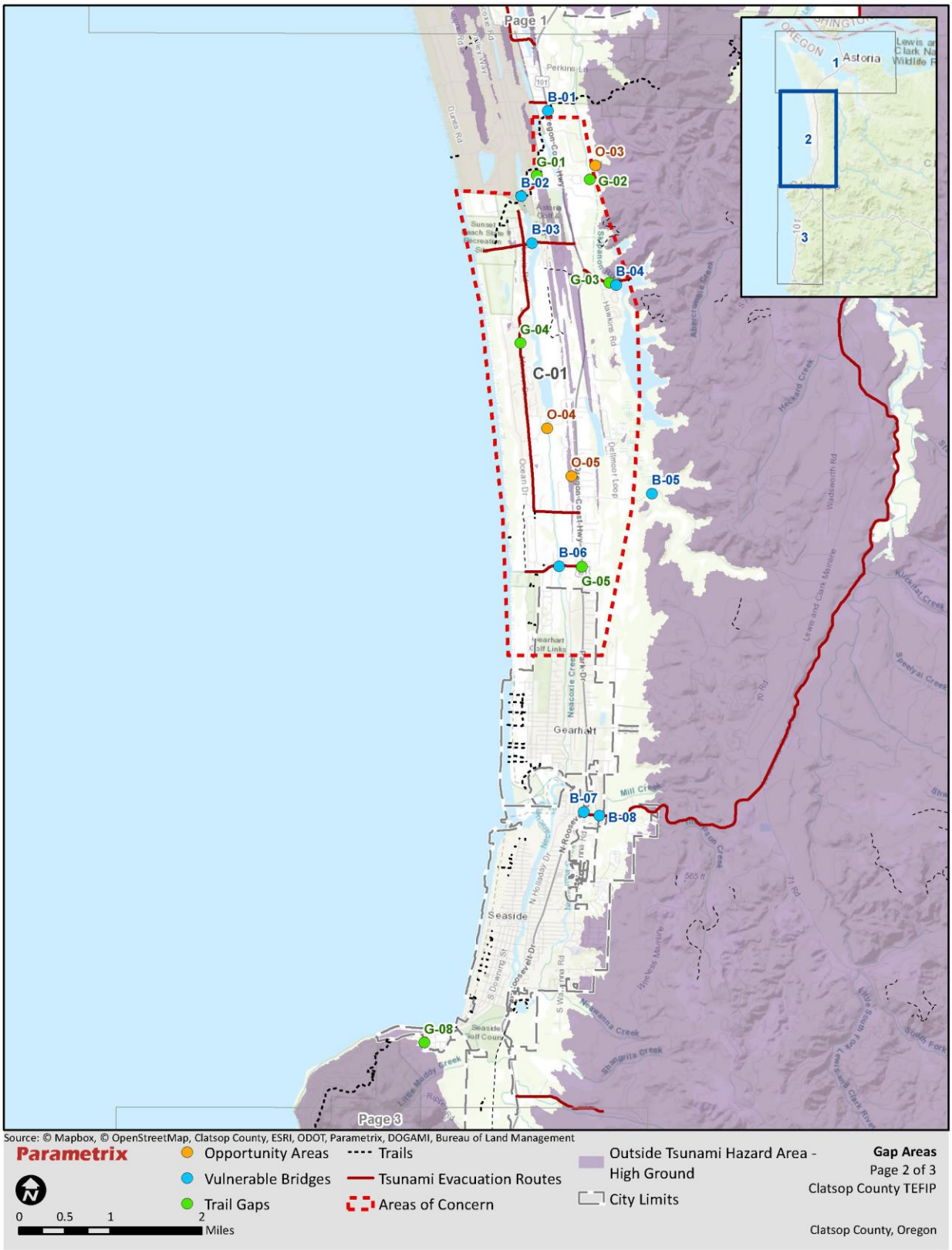

Figure 5. Gaps and Opportunities: Central Area

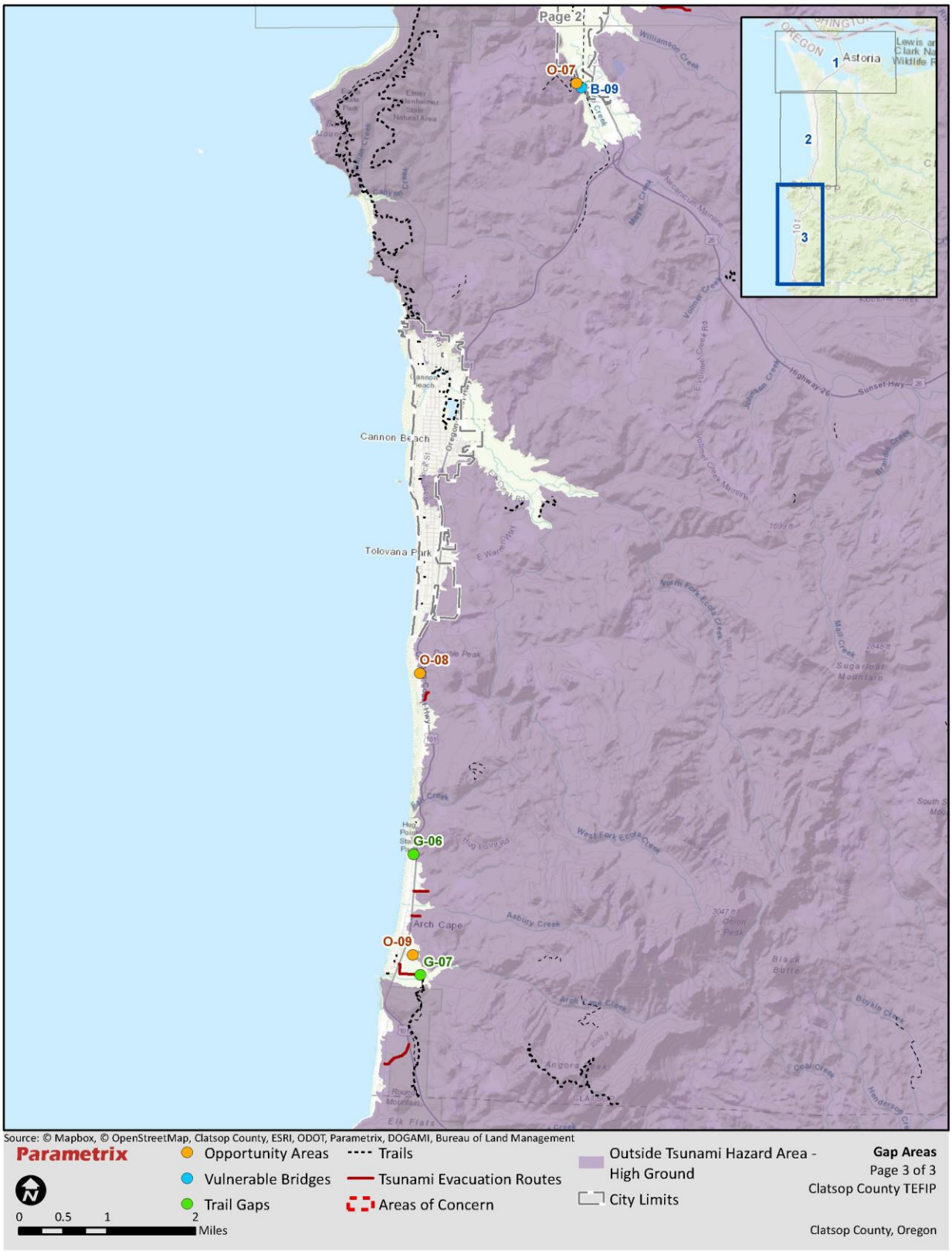

Figure 6. Gaps and Opportunities: South Area

2.2 Natural and Cultural Resources

The project study area overlaps with many natural and cultural resources. These are reviewed at a high level here. Future project development will require further study.

Available data for natural and cultural resources are shown on the companion web map, available here. Relevant GIS layers can be found in the second data tab (Natural and Cultural Resources).

Table 7. Natural and Cultural Resources

Resource	Notes
Land Use Goal 5 Resources	Many resources protected by Goal 5 are inconsistent with evacuation route siting, particularly if the trail requires a structure. However, some resources, such as Recreation Trails, Natural Areas, and Open Space, could support a trail.
Regulatory floodplains	Floodplains tend to follow waterways inland, such as the Necanicum River, the Skipanon River, the Lewis and Clark River, the Youngs River and several sloughs in the Miles Crossing/Jeffers Garden area. The lower elevation areas of Seaside, Gearhart, and Warrenton are also within floodplains. The tsunami inundation zone largely overlaps with floodplain areas.
Levees, including locations and geometries	Levees have been constructed adjacent to waterways throughout the project area. These are potentially vulnerable to both earthquake and tsunami.
Wetlands and non-wetland waters	A large portion of the project area is covered by wetlands and non-wetland waters. These areas are environmentally sensitive and are almost fully within the tsunami inundation zone.
Endangered Species Act and Oregon-listed sensitive species	Preliminary research reveals 11 endangered species, 3 critical habitats, and 40 migratory bird species that intersect the project area.[3]
Hazardous materials sites	Preliminary research reveals 87 environmental cleanup sites[4] in Clatsop County, including several that are closed or require no further action. There are 392 leaking underground storage tanks[4] with active investigations. Further investigation is needed in a future phase of project development to understand specific impacts related to each project.

[3] "Information for Planning and Consultation," U.S. Fish & Wildlife Service, accessed March 29, 2021. https://ecos.fws.gov/ipac/location/G2GHOLCLBBC23JJXBGNPTMF7HE/resources

[4] "Environmental Cleanup Site Information Database," Oregon Department of Environmental Quality, accessed March 29, 2021. https://www.deq.state.or.us/lq/ECSI/ecsiquery.asp

[4] "Leaking Underground Storage Tanks (LUST) Database," Oregon Department of Environmental Quality, accessed March 29, 2021. https://www.deq.state.or.us/lq/tanks/lust/LustPublicLookup.asp

Resource	Notes
Historic, cultural, and archaeological resources and sites	The areas of Clatsop County along the coast and Columbia River have been inhabitated for centuries and are home to historic landmarks and parks. These areas are historical territories of the Clatsop, Nehalem, and Chinook tribes,[6] and, are expected to have archaeologically, historically, or culturally significant resources located throughout. Future projects must consider these resources as the projects are developed.
Topographical information, including steep and unstable slopes	Steep or unstable slopes are common near coastal areas. These pose substantial challenges for evacuation routes. Steep slopes may be insurmountable to people walking or biking. Unstable slopes are prone to develop landslides in a seismic event.
Public lands	Publicly owned lands present an opportunity for evacuation routes or assembly areas that will not require new easements. Routes through public lands may require the jurisdictions to develop memoranda of understanding.
Tsunami inundation data	Tsunami inundation data was developed by DOGAMI. This planning effort considers the tsunami zone from the most severe event: a “local” earthquake, also called the Cascadia “XXL” scenario.

2.3 Demographics

2.3.1 Population Estimates

Population estimates were developed for the project area, Clatsop County, and the State of Oregon (

[6] “Our home on native land,” Native Lands Digital. Accessed March 29, 2021. https://native-land.ca/

Table 8). **Mapped demographic data can be accessed on the web map, available here.**

The project area population includes Census block groups that are within or intersect the project area boundary and exclude the populations within the incorporated cities of Cannon Beach, Seaside, Gearhart, Warrenton, and Astoria. Some block groups on the east edge of the project area are large and extend outside the project area. These block groups are included because it is assumed that most people within them live closer to the coast, and therefore inside or near the project area.

Table 8. Population Estimates

	Project Area	Clatsop County	State of Oregon
Total Population	6,481 *	39,102	4,129,803
Age 17 and Under	17.7% *	19.1%	21.0%
Age 65 and Over	23.2% *	21.4%	17.2%
At or Below 200% of the Federal Poverty Level	19.8%	32.7%	30.8%
Limited English Proficiency	0.7%	1.2%	2.5%
People with Disabilities	18.4%	18.5%	14.0%
Race and Ethnicity			
Hispanic (All Races)	5.8% *	8.5%	13.0%
American Indian/Alaska Native	0.9% *	0.4%	0.9%
Black/African American	1.0% *	0.8%	1.8%
Asian	1.6% *	1.0%	4.3%
Pacific Islander	0.2% *	0.3%	0.4%
White	87.7% *	85.5%	75.7%
Other Race	0.2% *	0.0%	0.1%
Multiple Races	2.7% *	3.5%	3.7%

Sources:
* 2020 ESRI Estimates
All others: American Community Survey 5-Year Estimate 2015-2019

2.3.2 Environmental Justice Populations

For the purposes of the Clatsop County TEFIP, members of Title VI and Environmental Justice communities include:

- Black, Indigenous, and people of color (includes non-white Hispanic and Latino)
- Youth (age 17 and younger) and seniors (age 65 and older)
- Low-income (defined as percentage of households earning less than 200% of the poverty line income)
- Limited English proficiency households

Population estimates indicate the portion of residents who identify as Black, Indigenous, or as persons of color is generally lower than the state as a whole. One exception is the population of American Indian/Alaska Native, which is 0.9 percent for both the project area and for Oregon. The youth population is relatively low for the project area, less than 18 percent. However, nearly one quarter of the population is over age 65, with higher concentrations along the coast north of Gearhart through the Clatsop Spit. The portion of low income residents is below 19 percent, which is less than Clatsop County or Oregon. Less than one percent of project area residents have limited English proficiency.

2.3.3 Vulnerable Populations

Vulnerable and special needs populations are members of the community who experience access, functional or medical care needs and who may require assistance before, during, and after an emergency incident. In the case

of evacuations, examples of individuals who have access and functional needs that may make evacuation challenging include:

- Individuals who experience mobility challenges (e.g., those with physical disabilities, the elderly, children).
- Individuals who are blind or have low vision.
- Individuals who are deaf or hard of hearing.
- Individuals with limited English proficiency.

As indicated in

Table 8, over 40 percent of the population is either under age 18 or over age 64. Additionally, 18.4 percent of individuals live with at least one disability. To better understand how many community members may have access or functional needs, **Error! Reference source not found.** lists the portion of the project area population that experience disabilities related to mobility, vision, or hearing. This is not a comprehensive list of disabilities (it does not include cognitive disabilities, for example), and some individuals may experience more than one.

Table 9. Individuals in the Project Area with Ambulatory, Hearing, or Vision Disability

Disability Status	
People with Ambulatory Difficulty	4.3%
People with Vision Difficulty (Age 5 and Over)	5.2%
People with Hearing Difficulty	4.6%

Source: American Community Survey 5-Year Estimate 2015-2019

2.3.4 Visitors

The Oregon Coast is a popular tourist destination and can host many visitors in addition to the residents. According to a recent study for Travel Oregon, over 1.7 million visitors spent at least one night in Clatsop County in 2019.[7] This number is not specific to coastal areas and does not include day use visitors. Also, the number of visitors in the project area fluctuates with the seasons.

Visitors are likely less familiar with the risk of tsunamis, evacuation procedures, and the geography of the area. Visitors may also not speak English. These are important considerations for the provision of evacuation facility capacity, as well as evacuation information and wayfinding.

[7] Dean Runyan Associates, *Oregon Travel Impacts, 1992-2019* (2020). https://industry.traveloregon.com/wp-content/uploads/2020/04/ORImp19.pdf

3. TSUNAMI EVACUATION FACILITIES IMPROVEMENT PLAN

This TEFIP identifies and evaluates potential tsunami evacuation facility improvements in Clatsop County, with a specific focus on improving existing trails to serve evacuation needs. The plan proposes three types of improvements – trails, assembly areas, and vertical evacuation structures – and describes potential amenities for each. In addition to focusing on evacuation needs and prioritizing life safety in the event of a tsunami, recommendations prioritize improvements which also benefit the community by providing year-round recreation benefits.

3.1 Evacuation and Trail Facility Types

3.1.1 Trail Typology

Trails are classified into three types for the purposes of this plan: on street trails, multi-use paths, and recreational trails.

On Street Trail

A sidewalk or roadway can provide pedestrian travel in case of an evacuation. On street trails that are recommended are all on the roadway surface, not on sidewalks. Because they are at grade on the roadway, they generally can comply with Americans with Disabilities Act (ADA) accessibility guidelines.

- **Shared roadway**. On quieter roads, an on-street trail can share the travel lane, as shown in Figure 7. This facility is appropriate for volumes of less than 2,000 average trips per day and speeds under 30 miles per hour. Shared roadways may encourage drivers to travel slower, though these roads are already low speed, low volume, and likely being used by pedestrians already.
- **Paved shoulder**. On roads with moderate to high volumes and speeds, the trail can follow a paved shoulder, as seen in Figure 8. A paved shoulder is appropriate for volumes of less than 12,000 average trips per day and speeds under 55 miles per hour. Paved shoulders will have minimal effect on the roadway through traffic.

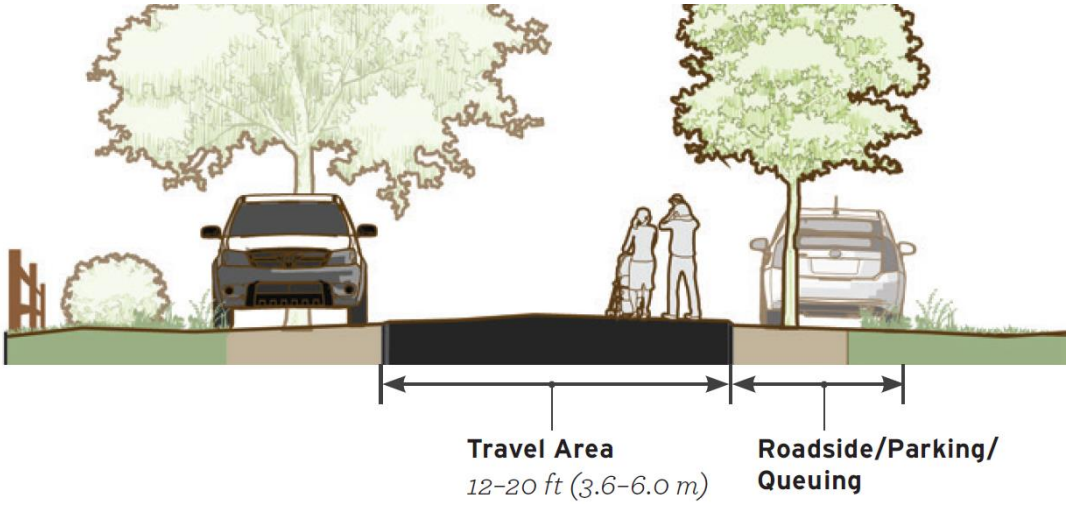

Figure 7. On Street Trail: Shared Roadway
Source: FHWA Small Town and Rural Multimodal Networks

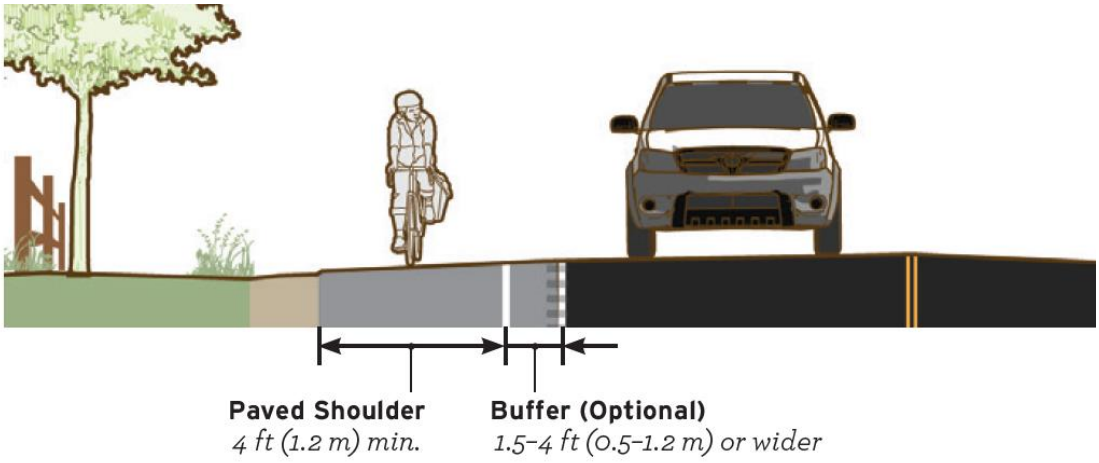

Figure 8. On Street Trail: Paved Shoulder
Source: FHWA Small Town and Rural Multimodal Networks

Multi-Use Path

Multi-use paths (MUPs) are off-street trails that are highly developed and paved, as shown in Figure 9. MUPs would be built to comply with ADA guidelines. MUPs are paved with concrete or asphalt, making them practical for biking, walking, and mobility devices, such as wheelchairs and canes. MUPs tend to be popular because they feel safe and comfortable for a wide range of people. MUPs are practical for evacuation – as long as the facility remains passable after the earthquake – because they are ADA accessible and their narrow cross section allows them to be built in areas where a road will not fit.

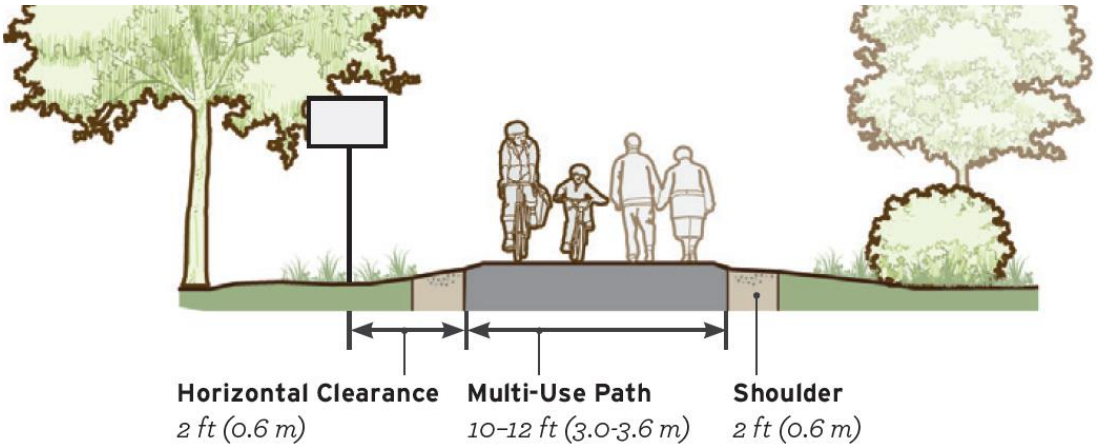

Figure 9. Multi-Use Path (MUP)
Source: FHWA Small Town and Rural Multimodal Networks

Recreational Trail

Recreational trails are less developed and unpaved, as shown in Figure 10. Recreational trails are not built to comply with ADA guidelines. Recreational trails tend to be steeper and more challenging to traverse.

Recreational trails have an unpaved surface of soil, grass, wood chips, or other material. They cost less to construct than a paved MUP and can more easily fit in a natural or undeveloped context. Recreational trails are enjoyable for hiking but may be more difficult to travel along than an MUP. These are appropriate for remote areas that are expected to serve small numbers of people during an evacuation.

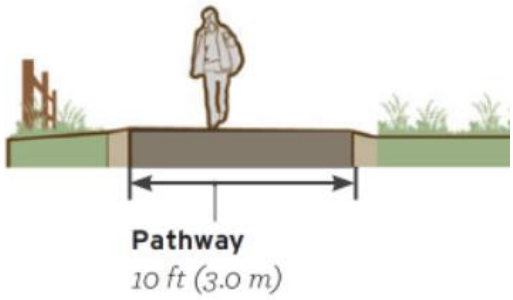

Figure 10. Recreational Trail

Source: Adapted from FHWA Small Town and Rural Multimodal Networks

This plan prioritizes more developed trails for evacuation routes because they are easier to travel and are accessible to more people. However, less developed trails will still be considered in areas that lack other evacuation options.

3.1.2 Trail Amenities

Additional amenities can make trails more attractive for everyday use. Benches and seating, for example, provide opportunities for people to rest or stop and enjoy the scenery. Lighting can help make a trail feel safer in low light conditions. Some amenities can also be helpful after a seismic event. Shelters outside the inundation zone can be used for assembly areas. Wayfinding signs can point toward high ground and can include information about earthquake and tsunami resilience.

Potential trail amenities are listed in Table 10. Trail Amenities and ConsiderationsTable 10 along with considerations relevant to implementation and tsunami evacuation.

Table 10. Trail Amenities and Considerations

Amenity	Benefits or Constraints	Example
Benches and seating	Generally appropriate for heavily used trails. Provides opportunities for resting, especially helpful for people with mobility impairments.	 *Seating options on the Seaside Promenade (source: Google Streetview)*

Amenity	Benefits or Constraints	Example
Fencing	Useful for separating public right of way from private property. Can impact accessibility of the evacuation route from adjacent areas.	 *Fence along the Fort to Sea Trail (source: Google Streetview)*
Wayfinding and information signs	Helpful for indicating evacuation route and direction and assembly areas or high ground. Can increase tsunami awareness. Can also include recreational wayfinding and information about the trail system. Signs need to be inventoried on a regular basis to ensure they are still in place and legible.	 *Tsunami info sign on the Astoria Riverwalk (source: project team)*
Shelters or pavilions	Shelters can be practical amenities to protect trail users from rain or sun. Shelters outside of the inundation zone may also be used for assembly areas. Shelters within the assembly areas should include clear signage indicating the evacuation route.	 *Astoria Riverwalk Trolley Stop (source: Astoria Recreational Trail Master Plan 2013)*

Amenity	Benefits or Constraints	Example
Lighting	Useful for trailheads and trails used at night. Solar-powered lighting can be more seismically resilient than hard-wired, and it avoids the risk of fallen power lines in a seismic event. Balance lighting provision with wildlife and light pollution impacts and employ “dark sky” strategies.	 *Pedestrian-scale lighting along the Seaside Promenade (source: Google Streetview)*
Bicycle racks and fix-it stations	Appropriate for trails with expected frequent use by people biking. Consider overlap with or proximity to the Oregon Coast Bike Route.	 *Bike parking, fix it station, and solar charging at Hagg Lake (source: Washington County Parks)*
Motor vehicle parking	Requires space. May be used as an assembly area if out of the inundation zone.	 *Trailhead parking lot for Tillamook Head, Seaside (source: Google Streetview)*

Amenity	Benefits or Constraints	Example
Restrooms and water fountains	Toilets and water are practical for popular trails, trailheads, and assembly areas. Providing toilets can help protect sensitive ecosystems. Plumbing is vulnerable to a seismic event. More substantial ongoing maintenance needs and costs.	 *Vault toilets at the Fort to Sea Trail trailhead (source: Google Streetview)*
Viewpoints	Unique viewpoints can draw people to a trail, which can increase awareness of it as a potential evacuation option. Viewpoints can also be used to survey the area below after a seismic event.	 *View from the Neah-Kah-Nie Mountain Trail, Oswald West State Park (source: Google Streetview)*

3.1.3 Assembly Areas

Assembly areas provide space on high ground outside the inundation area for people to gather temporarily during a tsunami. At minimum, they provide a clear and safe place for people to come together. This requires a plot of land outside the evacuation zone, effective wayfinding signs to get people there, and regular maintenance to keep it in good condition.

The Oregon Department of Geology and Mineral Industries (DOGAMI) has identified locations for assembly areas in coastal communities as part of their evacuation route mapping. This includes the populated communities of Clatsop County. But these assembly area locations primarily exist on maps and may not be clearly marked or signed for people trying to get to them. Assembly areas also may not be sized to accommodate their evacuation shed. Additional assembly areas will be needed as this TEFIP develops more evacuation route options. DOGAMI's identification of assembly area locations is a good starting point for further development. A thorough review of existing assembly areas is outside the scope of this project.

3.1.3.1 Location

Assembly areas should be located such that everyone in the inundation zone can reach an area within the time between an earthquake and subsequent tsunami. This amount of time varies greatly, depending on the

epicenter of the earthquake and inland location. Generally, locations that are further inland have more time to evacuate. DOGAMI has modeled this to create their *Beat the Wave* evacuation maps. To simplify the planning effort, this TEFIP follows *Guidelines for Design of Structures for Vertical Evacuation from Tsunamis* developed by the Federal Emergency Management Agency (FEMA) and use evacuation time estimate of 15 minutes.[5] This estimate is for people that are close to the water and for a tsunami caused by a local earthquake, the more conservative case with the shorter evacuation time. The distance that can be traveled depends on when a person leaves after the earthquake begins—a long-lasting earthquake will take several minutes, and then people will typically take time to gather themselves before evacuating—and the person's walking speed.

This TEFIP uses the following assumptions for tsunami evacuation:

- Time to evacuate: 15 minutes (the time between when the shaking stops and when a local tsunami hits)
- Moderate walking speed: 4 miles per hour
- Mobility-impaired walking speed: 2 miles per hour
- Maximum travel distance: one-half mile

With a maximum travel distance of one-half mile, the maximum distance between assembly areas is 1 mile. This distance may be less in areas with terrain that is steep or difficult to traverse.

Siting an assembly area should consider other seismic risks. Is the land susceptible to liquefaction or landslide? Are there structures, trees, or utilities nearby that could pose a hazard after an earthquake? In the study area, there are a limited number of easily accessible areas outside of the inundation zone, so it is likely that assembly areas will need to be located in places with at least one potential hazard. These sites may require mitigation to minimize the risk.

In some locations, the nearest assembly areas are to the west — toward the incoming tsunami. This may be unintuitive for people and risks confusing evacuees. When possible, assembly areas and vertical structures should be located to the east of a community to take advantage of the instinct to run away from the threat. Where this is not possible, the evacuation route must be made very clear.

Some existing and proposed assembly areas are on relatively small strips of ground that are expected to be surrounded by water in the XXL event. Additional amenities may be needed at these locations in case it takes emergency response longer to reach them.

Consider whether each assembly area should have motor vehicle access, and for those that will have access, consider how to manage it. Motor vehicle access can help with facility construction, amenity inventory, and upkeep. It can also help by allowing emergency responders easy access to evacuees, if roads are still navigable.

Once located, the assembly area location must have clear indication for evacuees to recognize that they have reached a safe place. Signs and wayfinding ideally would include standard graphical icons that are used consistently in the county, state, and beyond. Additional information should be provided in common languages read by residents and visitors.

3.1.3.2 Size

Assembly areas need to be sized appropriately for the number of people they are likely to serve. Each assembly area should be analyzed to understand the number of residents and potential workers, students, and visitors who may use it. The assembly area—and amenities—need to be scaled to accommodate this total number of potential evacuees.

[5] August 2019. FEMA P-646: Guidelines for Design of Structures for Vertical Evacuation from Tsunamis, Third Edition.

3.1.3.3 Amenities

Additional amenities can make assembly areas more comfortable. A covered area will help people stay dry in wet weather and provide shade in hot weather. Assembly areas can also hold stashes of food, water, blankets, first aid supplies, communication devices, and other emergency items as listed in Table 11. Which amenities and how much to provide depends on the evacuation shed that the assembly area serves, how many people are likely to assemble there, and whether those people are likely to need support. What to provide also depends on the context of the assembly area. An area that is geographically isolated will benefit more from amenities than an area with nearby resources.

Some amenities, like supplies and gear, will need storage space at the assembly area that is safe from the weather, pests, earthquake damage, and vandalism or theft, while also being easy to access during a seismic event. Perishable items (food, first aid supplies, water bottles, and batteries, for example) should be regularly maintained or refreshed. This could be provided and managed by the County, or in coordination with a volunteer group. The City of Portland, for example, uses a network of trained volunteers to maintain and — in the case of an emergency — operate their Basic Earthquake Emergency Communications Nodes (BEECNs)

Another method to manage supplies could be similar to the emergency cache programs used by Cannon Beach and Gearhart. For an annual fee, the City will store a personal storage container in a secure building at an assembly area. Individual residents are responsible for acquiring and maintaining the container and the contents of supplies. The City requires the container to meet certain specifications and gives recommendations of the supplies to pack. Cache owners are allowed to access their containers twice a year to maintain their inventory. For more information, see:
https://www.ci.cannon-beach.or.us/sites/default/files/fileattachments/emergency_management/meeting/36218/cache_container_poster_2020_11x17.pdf

And:
https://www.cityofgearhart.com/sites/default/files/fileattachments/general/page/1771/gearhart_cache_program_brochure.pdf

DOGAMI has developed the *Earthquake and Tsunami Disaster Cache Planning Guide* to inform communities wishing to establish supply caches to be used in the event of a tsunami. The guide details a four-step planning process, including design, implementation, maintenance, and deployment. It includes recommended supply lists and case studies of successful supply cache programs. The guide can be viewed at:
https://www.oregongeology.org/tsuclearinghouse/resources/pdfs/TsunamiDisasterCachePlanningGuide.pdf

Table 11. Assembly Area Amenities

Amenity	Considerations
Shelter	• Evacuation shed (number of people expected to evacuate to this location) • Seismic stability
Food	• Storage space for longevity and to keep free of animals or pests • Evacuation shed
Drinking water	• System to maintain potability • Evacuation shed
First aid supplies	• Evacuation shed • Potential nearby hazards that may cause injuries to evacuees
Radio	• Power options
Communication devices	• Could include radio transmitters, walkie-talkies, and cell phones (though cell towers may not be operable after a seismic event)

Amenity	Considerations
Lighting	• Power options, solar chargeable batteries are a resilient option
Emergency power	• Could be used to charge communication devices • Options include solar power, batteries, and generators
Blankets	• Evacuation shed
Ponchos	• Evacuation shed

3.1.4 Vertical Evacuation Structures

In locations where natural high ground is not available or is not practical to reach in the time before the first tsunami wave arrives, vertical evacuation structures can be appropriately designed and constructed to serve as places of refuge where many people can evacuate and remain for up to 24 hours to escape the initial and subsequent tsunami waves.

Types of vertical evacuation structures include soil berms, towers, and buildings. Vertical evacuation structures of all three types can be designed and built to serve recreational or other community functions, in addition to providing refuge in areas too far from natural high ground. Berms can be incorporated into parks and recreational areas; towers can be made for use as an accessible viewpoint to take in the coastal beauty of Clatsop County, and a rooftop evacuation platform could be located atop of a variety of multistory civic, commercial or residential buildings.

Evacuees with limited physical ability may require assistance from more able-bodied people to climb stairs or ramps. Providing an elevator may seem like an attractive option to provide access for everybody, however elevators are not practical for evacuation uses. First, they require electricity, which will likely be severed by a seismic event. Second, the cost of a seismically resilient elevator would make a project prohibitively expensive. Third, and most important, elevators are slow and only move a few people at a time. They would create a bottleneck that is dangerous during an evacuation. Instead, ramps can be provided where feasible, like on a soil berm. Where only stairs are feasible, signs can be included to encourage evacuees to help one another reach the assembly area.

Table 12. Vertical Evacuation Structure Types

Structure Type Cost Range	Considerations	Example
Soil berms $1,000,000 – $5,500,000 (As berm height and the number of refugees to accommodate are among main cost factors, the construction cost range is based on a refugee capacity of 250 to 850, with berm height less than 35 feet.)	Engineered earth mound created with soil or recycled construction materials. Can be integrated into parks and serve a recreational use. More cost effective than other types of vertical evacuation structures.	 *A soil berm constructed in Tahara, Japan, in 2018 (Source: Disaster Prevention Bureau of Tahara, Japan)*
Evacuation towers $1,500,000 – $11,000,000 (As the number of refugees to accommodate is a main cost factor, the construction cost range is based on a refugee capacity of 200 to 900.)	Elevated platform, stairs, or ramps. Smaller physical footprint than berms. Space below platforms can serve multiple community uses, including parking. Consider equipping with amenities for communications and evacuees' immediate needs. Could be designed to serve recreational purposes, including a viewing platform; space below could be programmed for community events. Should be constructed at a height substantially above expected tsunami wave height; height determined by structural engineers.	 *Rendering of Tsunami Evacuation Tower in Tokeland, Washington (Source: Degenkolb Engineers)*
Buildings with rooftop refuge areas 10% to 20% increase in total construction costs (This estimate is based on limited data, including the Ocosta Elementary School, Westport, WA)	Multi-story building, typically with rooftop evacuation area. Can be integrated into buildings serving commercial or community uses. Lower levels typically designed with special features such as break-away walls.	 *Ocosta Elementary School in Westport, Washington (Source: Degenkolb Engineers)*

FEMA has developed FEMA P-646 which contains guidelines to assist communities on the west coast to plan and develop tsunami vertical evacuation structures (FEMA 2019).

3.1.4.1 Soil Berms

Soil berms create high ground using soil and/or recycled construction materials such as concrete or masonry. They have a large footprint on the landscape and can be integrated with school playgrounds, parks, and other recreational facilities. In addition to stairs, access ramps can be installed on the berm to provide easy access for mobility impaired individuals to move from the ground to the elevated surface. Evacuating to berms allows people to follow their instinct to go to high ground and eliminates fear of entering a structure that they perceive may not be safe. Berms are immune to damage from large debris such as shipping containers, barges, and ships, making them suitable for locations near port facilities.

3.1.4.2 Evacuation Towers

A tsunami evacuation tower consists of elevated platforms and stairs and/or ramps to lead people to an elevation that is sufficiently above the projected inundation elevation. When not in use as a refuge, space below the platform can potentially serve other community functions to enhance the quality of life. Towers have a small footprint compared to soil berms and buildings, and therefore, can be more easily distributed throughout potentially affected areas to increase accessibility and availability. The Shoalwater Bay Indian Tribe tsunami evacuation tower in Tokeland, Washington, is an example of a recently designed tsunami evacuation tower that has two refuge levels with an occupancy capacity of approximately 400 evacuees. Two sets of stairs are provided for redundancy and are specially detailed to ensure their functionality immediately after an earthquake. The tower will be fed by commercial power for routine maintenance and by emergency power for radio communication and USB charging. Supplies (such as food, water, first aid kits, emergency radios, light sticks, tarps, and blankets) can be stored in benches installed at the refuge levels.

3.1.4.3 Buildings with Rooftop Refuge Area

In a building that is specifically designed as a tsunami evacuation structure, the roof level is often designated as the tsunami refuge area while the lower levels are designed with special features (such as break-away walls) that will allow the tsunami waves to flow through lower levels. Instead of being developed as a single-purpose tsunami evacuation structure, the tsunami refuge area is often integrated into buildings that already serve everyday commercial or community-based functions, including public office buildings, school facilities, multi-story parking garages, and multi-story residential facilities. As an example, the Ocosta Elementary School in Westport, Washington, was constructed in 2016 and included the first tsunami vertical evacuation structure in the continental United States. The rooftop of the gymnasium was designed to be 30 feet above grade to serve as a tsunami refuge for up to 1,000 students, staff, and nearby community members. This approach of leveraging ongoing community development (e.g., construction of schools) is a very cost-effective way to enhance tsunami evacuation capacity to protect local residents and tourists.

Spacing, Location, and Size Considerations

Vertical evacuation structures need to be strategically located to ensure that all persons designated to take refuge at a particular structure can reach it within the time available between the tsunami warning and tsunami inundation. In Oregon and Washington, coastal communities may rely on ground-shaking from an offshore Cascadia Subduction Zone earthquake as tsunami warning. After re-orienting from the physical and emotional turmoil experienced during an earthquake, residents and tourists in Clatsop County may only have as little as 15 minutes for evacuation on foot. Although an average healthy person can walk at approximately 4 mph, people with mobility challenges due to age, health, and disability may only be able to evacuate at 2 mph. This means that the maximum spacing for vertical evacuation structures or natural high ground is about one mile.

In addition to spacing, it is important to consider natural and learned behaviors of human beings when locating tsunami evacuation structures in a community. The natural tendency for evacuees will be moving away from the shore and seeking high ground. Figure 11 illustrates an example for possible arrangement of vertical evacuation structures based on travel distance and evacuation behavior (arrows show anticipated vertical evacuation routes). Once the location of a tsunami evacuation structure is selected, refuge capacity can be estimated based

on the population density within its evacuation radius, and its size can be determined based on the recommendation of 10 square feet per occupant for a short-term vertical evacuation structure.

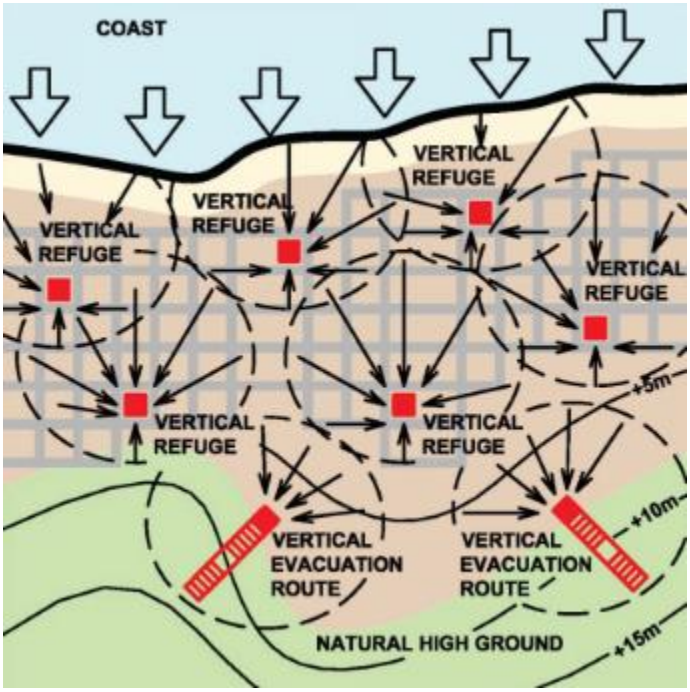

Figure 11. Spacing Diagram for Vertical Evacuation Structures

Example of Vertical Evacuation Refuge Locations and Anticipated Evacuation Routes (FEMA 2019)

Design Considerations

Vertical evacuation structures must be tall enough to ensure safety of those seeking refuge even if the tsunami exceeds the design tsunami event. Determination of elevation for tsunami refuge must consider the uncertainty inherent in the estimation of the tsunami runup elevation, possible splash-up during impact of tsunami waves, and the anxiety level of evacuees seeking refuge in the structure. The minimum refuge elevation recommended by the American Society of Civil Engineers in *Minimum Design Loads and Associated Criteria for Buildings and Other Structures*, ASCE 7-16 (ASCE 2017) is equal to the maximum anticipated tsunami inundation elevation, plus 30 percent, plus 10 feet or one story, whichever is greater.

In the Pacific Northwest, in addition to tsunami load effects, vertical evacuation structures must be designed to resist seismic loads from a Cascadia Subduction Zone earthquake, consider access issues including post-earthquake functionality of vertical circulation systems, and the availability of emergency power. Deep foundation systems are typically required to resist liquefaction and permanent ground deformation during a seismic event and significant scouring during a tsunami.

3.1.4.4 Cost Considerations

The type, height, and size (i.e., refugee capacity) of a vertical tsunami evacuation structure are the main factors that impact the design and construction cost of a vertical evacuation structure. In many cases, tsunami evacuation structures may need to be constructed on a site with poor soil condition, where site-specific hazards such as liquefaction and lateral spreading can create special design challenges, and often require significant cost to improve ground conditions and/or construct robust deep foundation systems. Unlike Japan, designing and constructing a tsunami evacuation structure is relatively new in the Pacific Northwest. In order to develop a planning-level construction cost range (in 2021 dollars) for a tsunami refuge as indicated in Table 12, we have taken a three-pronged approach, including (a) surveying recent tsunami evacuation feasibility studies, (2) compiling overall construction cost of a limited number of tsunami evacuation structures constructed in Oregon and Washington, and (3) leveraging our engineering experience and judgement.

If the county wants to develop a construction cost for budgetary planning or grant application for an individual tsunami evacuation structure, we recommend the county retain a qualified consultant to perform a project-specific engineering study to develop such information. It requires resources and expertise to plan, design, and construct tsunami evacuation structures. Local governments can obtain funding through grants from different departments and agencies of the federal and state governments as well as from local funding sources discussed in section 4.1, Funding and Financing Options.

3.1.4.5 Planning and Implementation in Washington

After the 2011 Tohoku Japan Earthquake and Tsunami, the Emergency Management Division of the State of Washington created Project Safe Haven to increase tsunami preparedness for coastal communities in three counties: Pacific, Grays Harbor, and Clallam. As the outcome of this project, over 43 structures located within a 15-minute walk of population centers have been proposed to provide safe haven for more than 18,450 people with high priority given to children, elderly, and people with disabilities. Project Safe Haven has resulted in planning, design, and construction of a number of tsunami evacuation structures including the completed Ocosta Elementary School, the Shoalwater Bay Indian Tribe tsunami evacuaton tower that is under construction, and design of a tsunami evacuation tower in the City of Westport, Washington.

3.1.5 Emergency Operations Center

In the process of researching facility improvements for this plan, it was discovered that the County's Emergency Operations Center (EOC) is located within the inundation zone at Camp Rilea. Though outside of the scope of this planning process, the project team recommends moving the EOC to a more resilient location safely above the inundation zone.

3.2 Preferred Evacuation Facilities

The preferred improvements reflect input from the Project Advisory Committee (PAC), County staff, public feedback, and from the County Board of Commissioners. Alternatives considered, but rejected, are also noted.

Cost estimates are "order of magnitude" estimates based on engineer's judgement, improvement assumptions, and unit prices from recent bid tabs in Oregon. Cost estimating details are contained in Appendix A.

3.2.1 Trails

A primary focus of the TEFIP is to establish tsunami evacuation routes along trails in Clatsop County. This section discusses trail alternatives and their characteristics: the trail type, recommended amenities, crossing improvements (if any), structure improvements (if any), and cost estimates. Trail alternatives and recommendations are listed at the end of this section in Table 13. **These alternatives are mapped in Figure 12, Figure 13, and Figure 14, as well as in the Online Map.**

3.2.1.1 Trail Types

Trails are classified into three types for the purposes of this TEFIP: on street trails, multi-use paths, or recreational trails. This planning effort prioritizes more developed trails for evacuation routes because they are easier to travel and are accessible to more people. However, less developed trails are recommended in areas where a recreational hiking trail is appropriate or in areas that lack other evacuation options.

3.2.1.2 Trail Amenities

Preferred trail amenities are listed in Table 10 along with considerations relevant to implementation and tsunami evacuation. Amenities should be provided as appropriate for each trail; not all amenities are

recommended for every trail. See Table 13 for amenity recommendations for each of the preferred trail projects. Some existing trails may already have amenities.

3.2.1.3 Structures

Some of the proposed trail projects include improvements to structures, such as bridges, boardwalks, and retaining walls. Projects with a possibility of needing structure improvements are described here by structure type. Structure improvements are also listed in Table 13. This assessment is preliminary. More investigation and engineering are required as projects are developed after the completion of this TEFIP.

Bridges

- T-06: Would need a new bridge over the creek (Figure 14. Evacuation Routes and Trail Options - South AreaFigure 14).
- T-08: Adds a new pedestrian bridge over the Skipanon River parallel to the existing roadway bridge. A new pedestrian bridge would be more cost effective than seismically retrofitting the existing bridge (Figure 13).
- T-10: Would need a new bridge over the Skipanon River (Figure 13).
- T-15 meets T-16 at an undercrossing of Burma Road in Fort Stevens State Park. The undercrossing is an easier route to high ground than climbing up the steep road embankment and back down to trail level again (Figure 12).

Retaining Walls

- T-01: Steep terrain could require switchbacks and retaining walls (Figure 14).

Boardwalks

- T-06: Proposed trail appears to traverse wetlands. An elevated boardwalk is included to reduce potential wetland impacts from a new trail (Figure 13).

3.2.1.4 Trail Cost Estimates

Costs reported in this memo are conceptual, planning-level estimates and rounded up to the nearest 50,000 dollars. See Appendix A for cost estimating details. Cost estimates are to construct the trail, crossing treatments, anticipated structures, required fencing, and signage. Amenities are not included.

Estimates use unit costs from 2021. They include construction costs based on quantities derived from aerial imagery and unit costs from recent, similar projects. Surveying, mobilization, erosion control, and traffic control services are estimated as an additional percentage of unit costs. A 40 percent contingency was applied to account for unknowns at this high level of conceptual analysis. Engineering and design fees are included as an additional 20 percent of the project subtotal. Projects with a high likelihood of needing environmental permitting have additional costs to cover the permitting.

Costs do not include:

- Recommended amenities or features.
- Escalation or inflation for a future project year. Alternatives do not yet have a build date.

Cost Estimates for Each Trail Type

Each type of trail would be constructed differently and would therefore include different line items.

Cost Estimates for On Street Trails

Cost estimates for on street trails assume one of three options:

- Marking an existing paved roadway with signs and pavement markings to indicate that it is a shared roadway and an evacuation route.
- Paving an unpaved roadway with a 20-foot-wide asphalt surface. This cost includes clearing and grubbing, excavation, subgrade stabilization, aggregate base, and asphalt pavement that is 4 inches thick.
- Extending the roadway on one side by paving an additional 8-foot-wide shoulder. This cost includes clearing and grubbing, excavation, subgrade stabilization, aggregate base, and asphalt pavement that is 4 inches thick.

Cost Estimates for MUPs

Cost estimates for MUPs assume paving a 12-foot-wide trail. The cost includes clearing and grubbing, excavation, subgrade stabilization, aggregate base, and asphalt pavement that is 4 inches thick.

Cost Estimates for Recreational Trails

Cost estimates for recreational trails assume a 10-foot-wide gravel path. The cost includes clearing and grubbing, excavation, subgrade stabilization, and aggregate base (gravel).

Table 13. Proposed Trail Alternatives

ID & Trail Type (See Map)	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation & Justification	Cost Estimate
T-01 On street (shared roadway)	Arch Cape	Continue evacuation route outside of inundation zone from E Shingle Mill Lane, north on Fire Rock Road, and east to high ground. Pave 20-foot wide roadway to improve seismic resilience.	Wayfinding	This is an existing evacuation route to serve the southern area of Arch Cape, but the route does not go far enough to escape the Cascadia "XXL" inundation zone. Trail could connect with a future trail system in nearby forest land that is in the process of being acquired by the Arch Cape Water District. Local residents have recently opposed road construction unless it is associated with new permitted development.	**Recommended.** Criteria: Addresses evacuation need; directness of travel Justification: T-01 extends an existing evacuation route out of the XXL inundation zone. It is located at the south end of Arch Cape, which is vulnerable to a tsunami and has a community of residents and has lodging for visitors. The route is relatively short and is along existing roads.	$250,000
T-02 MUP	Arch Cape	Create a trail along Oceanview Lane right of way that leads to high ground.	Wayfinding Potential assembly area	The County already has the right of way here, but it has not been built out and it is not maintained. The County owns four parcels at the end of Oceanview Lane that are outside the inundation zone. Trail could connect with a future trail system in nearby forest land that is in the process of being acquired by the Arch Cape Water District. Local residents have recently opposed road construction unless it is associated with new permitted development.	**Recommended.** Criteria: Addresses evacuation need; directness of travel Justification: T-02 creates an evacuation route along existing County right of way. It is located toward the south end of Arch Cape, which is vulnerable to a tsunami and has a community of residents and has lodging for visitors.	$400,000
T-03	Arch Cape	Create a trail at the south end of Carnahan Road that continues east past US 101 along Buena Vista Drive to high ground. Improves the existing pedestrian underpass. Roadway is already paved, no additional paving included.			**Not recommended.** Justification: T-03 creates an evacuation route along existing roads, but these roads are privately owned. The evacuation route would cross US 101 at grade and not through the pedestrian underpass, which may not be passable following an earthquake.	

ID & Trail Type (See Map)	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation & Justification	Cost Estimate
T-04 MUP	Arch Cape	Create a trail at the north end of Carnahan Road that continues north to high ground.	Wayfinding Fencing to delineate trail right of way from private property	Consider wooden steps for steep slope. Potential need for public easement. Requires coordination with owner of one parcel of private property	**Recommended.** Criteria: Addresses evacuation need; low cost increases feasibility; possible need for public easement. Justification: T-04 creates an evacuation route with a new MUP extending to high ground. It is located at the north end of Arch Cape, which is vulnerable to a tsunami and has a community of residents and has lodging for visitors.	$100,000
T-05	South of Cannon Beach	Area has platted properties but is not yet developed. Consider placing trail(s) as conditions of development.			**Not recommended.** Justification: Reconsider if the area becomes more likely for housing development.	
T-06 Recreation	North of Gearhart	Create a trail to connect - Shady Pine Road across Neacoxie Creek to higher ground to the west.	Wayfinding Fencing to delineate trail right-of-way from private property	Potential need for easement. Requires coordination with owners of four parcels of private property. If easement for a trail cannot be obtained, consider vertical evacuation structure(s) for people west of Sunset Lake. Locations would need to be determined through analysis and with community input. Requires bridge over Neacoxie Creek, which is a Goal 5 wetland. Will require an elevated boardwalk to reduce impacts to wetland (300 foot boardwalk included in cost estimate). Likely to require environmental permitting. Will require environmental review; this area might be endangered species habitat (silverspot butterfly).	**Recommended.** Criteria: Addresses evacuation need; feasibility may be difficult because this route involves coordination with multiple property owner and potential environmental permitting. Justification: T-06 provides an evacuation route for residents in the west portion of the Surf Pines community. This area is currently constrained by Sunset Lake and private property ownership. T-06 would provide a more direct path for this community to reach high ground. Challenges: It would require coordination with owners of four properties, an environmental review, and structures to bridge the creek and wetlands. Even so, this trail connection would likely be more practical and more cost effective than building a vertical evacuation structure.	$1,250,000

ID & Trail Type (See Map)	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation & Justification	Cost Estimate
T-07 Recreation	North of Gearhart	New trail to high ground from Cullaby Lake County Park parking areas and recreation areas.	Wayfinding Benches Shade structure Associated with potential assembly area A-10	Requires a new trail in wooded hill near the beaches and parking areas. Hill may have steep slopes in some areas.	**Recommended.** Criteria: Addresses evacuation need; provides multimodal connectivity; high feasibility. Justification: T-07 provides an evacuation route for visitors to Cullaby Lake County Park and creates a new recreational trail for visitors to enjoy.	$300,000
T-08 Recreation	North of Gearhart	New trail to high ground from Cullaby Lake Lane. Adds a pedestrian bridge over Skipanon River parallel to the existing roadway bridge.	Wayfinding Associated with proposed assembly area A-11	Current evacuation route ends within inundation zone. Short trail segment needed to reach high ground. Hillside appears steep. Trail likely to need switchbacks. Retaining walls are not included in the cost estimate. Trail could be a feature of Carnahan County Park, which is owned by Clatsop County.	**Recommended.** Criteria: Addresses evacuation need; provides benefit to residents and park visitors; high feasibility because land is publicly owned. Justification: T-08 extends an existing evacuation route out of the XXL inundation zone into Carnahan County Park.	$300,000
T-09	South of Camp Rilea	Connect Fort to the Sea Trail to high ground with a trail spur at ridge.			**Not recommended.** Justification: Fort to the Sea trail is located very near to higher ground; formal trail spur is not needed.	
T-10 MUP	Southeast of Camp Rilea	Connect the neighborhood at Glenwood Village to high ground with trail to the east.	Benches or seating for recreational use Fencing to delineate trail right of way from private property	Requires a bridge over the Skipanon River. Potential need for easement acquisition. Likely to require environmental permitting.	**Recommended.** Criteria: Addresses evacuation need; direct route to higher ground; need for bridge and environmental permitting makes the project more challenging. Justification: T-10 connects the neighborhood at Glenwood Village to high ground.	$450,000

ID & Trail Type (See Map)	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation & Justification	Cost Estimate
T-11 On street (shared roadway)	Camp Rilea	Improve Pacific Road to serve as an evacuation route.	Wayfinding Associated with proposed assembly area A-14	Needs to be coordinated with Camp Rilea.	**Recommended.** Criteria: Safety and security for people in the area; uses existing roadway; high benefit for low cost of signage. Justification: T-11 would provide an evacuation route for visitors at Camp Rilea. At some areas of the camp, the shortest/easiest route to high ground is to the west, which is not intuitive and this trail would help clarify. Existing road is paved and would only require signage/wayfinding.	<$50,000
T-12 On street (shared roadway)	Camp Rilea	Improve Demo Road to serve as an evacuation route. Paves a 20-foot-wide roadway surface.	Wayfinding Associated with proposed assembly area A-15	Needs to be coordinated with Camp Rilea.	**Recommended.** Criteria: Safety and security for people in the area; uses existing roadway; high benefit for low cost of signage. Justification: T-12 would provide an evacuation route for visitors at Camp Rilea. At some areas of the camp, the shortest/easiest route to high ground is to the west, which is not intuitive and this trail would help clarify. Existing road is gravel and would require paving.	$700,000
T-13	Camp Rilea	Connect the residential area along Douglas Lane to high ground at Camp Rilea with a short trail to 2nd Causeway Road.			**Not recommended.** Justification: Trail segment connects to assembly area; Douglas Lane leads to higher ground, so trail is not needed for evacuation.	
T-14	South of Warrenton	Delaura Beach Lane is an important connection from the beach to higher ground. Improve to be an effective evacuation route. Pave an 8-foot-wide shoulder.			**Not recommended.** Justification: T-14 would improve Delaura Beach Lane, which provides an evacuation route for nearby residents. There are few alternative routes near here because the road has water on both sides: Cemetery Lake to the north and Smith Lake to the south.	

ID & Trail Type (See Map)	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation & Justification	Cost Estimate
T-15 MUP	Fort Stevens	Improve existing trail to serve as evacuation route for people in park or at beach.	Wayfinding	Trail is oriented east-west and provides fairly direct route to high ground.	**Recommended.** Criteria: Addresses evacuation need; multimodal connection; potential to serve many recreational users. Justification: T-15 would provide an evacuation route for visitors at Fort Stevens State Park and would improve the existing trail for everyday use.	$450,000
T-16 MUP	Fort Stevens	New connection from existing trail to high ground.	Wayfinding	May be steep terrain.	**Recommended.** Criteria: Addresses evacuation need; multimodal connection; potential to serve many recreational users. Justification: T-16 would provide an evacuation route for visitors at Fort Stevens State Park and would improve the existing trail for everyday use. Includes seismic upgrades to the Burma Road undercrossing.	$400,000
T-17 MUP	Fort Stevens	New connection from existing Jetty Road parking area to high ground.	Wayfinding	May be steep terrain.	**Recommended.** Criteria: Addresses evacuation need; multimodal connection; potential to serve many recreational users from the Jetty Road parking area. Justification: T-17 would provide an evacuation route for visitors at Fort Stevens State Park and would improve the existing trail for everyday use.	$100,000

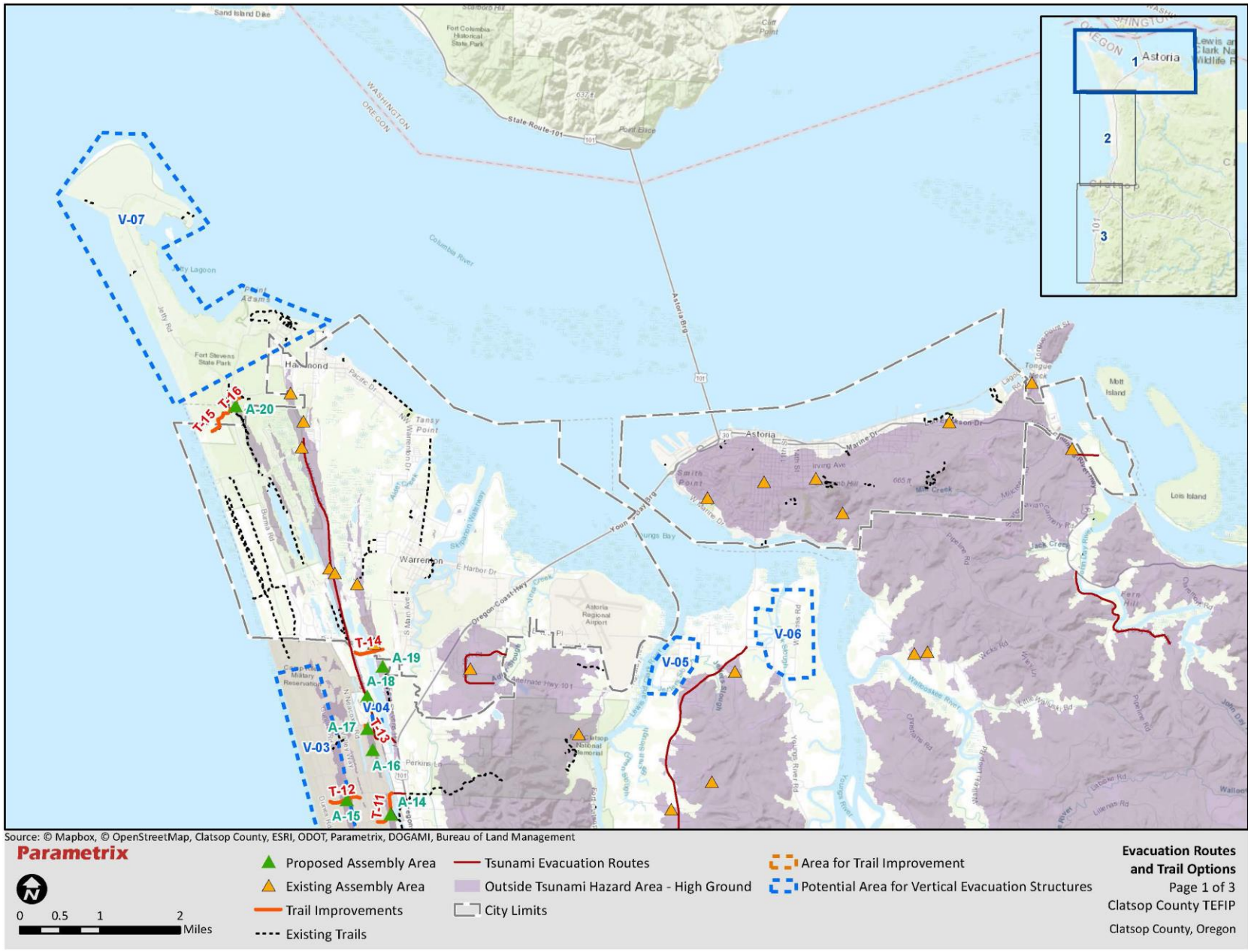

Figure 12. Evacuation Routes and Trail Options - North Area

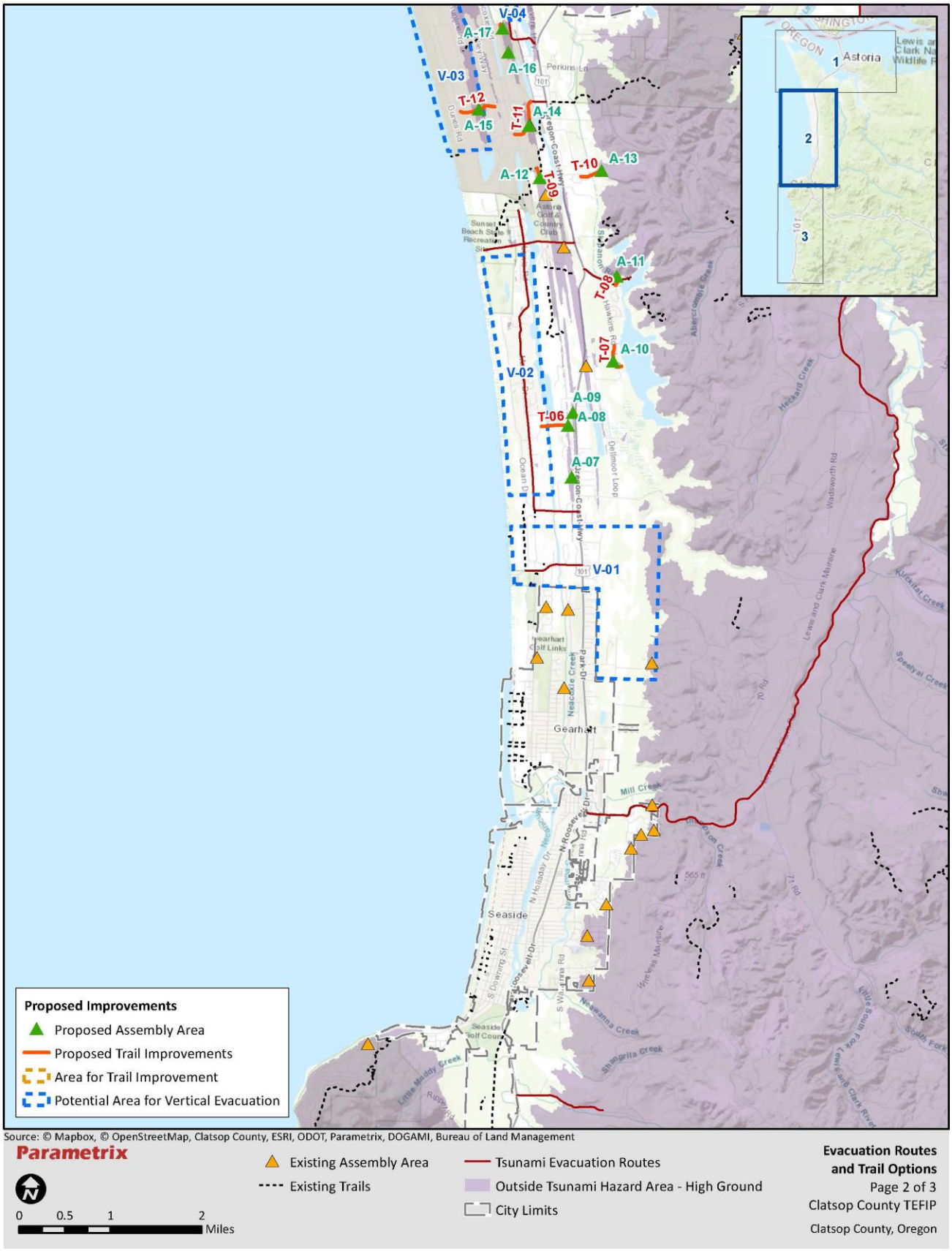

Figure 13. Evacuation Routes and Trail Options - Central Area

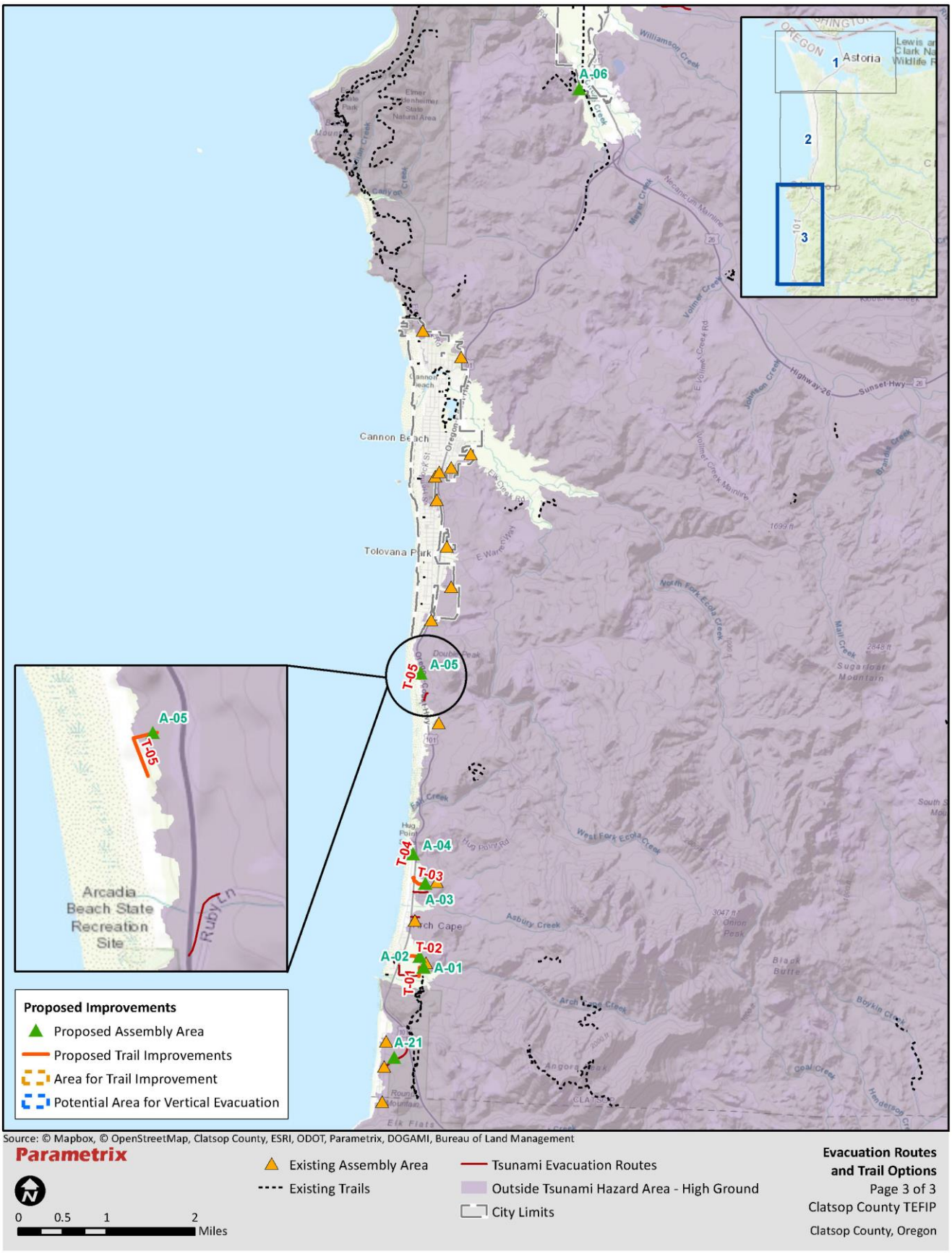

Figure 14. Evacuation Routes and Trail Options - South Area

3.2.2 Assembly Areas

Assembly areas provide space on high ground outside the inundation zone for people to gather temporarily during a tsunami. At minimum, they provide a clear and safe place for people to come together until the high water recedes. This requires a plot of land outside the evacuation zone, effective wayfinding signs to get people there, and regular maintenance to keep it in good condition.

It is worth noting that it is not necessary for people to evacuate to assembly areas specifically. It is most important that people get to high ground, which does not need to be an assembly area. But assembly areas help by indicating to people that they are in a safe place on high ground and by bringing people together for collective support.

3.2.2.1 Assembly Area Investment Packages

The appropriate amount of investment in each assembly area depends on its evacuation shed and how accessible it is for emergency responders. Locations expected to serve a large number of residents or visitors will require more space and amenities than locations expected to serve a small number. Assembly areas in more remote or isolated locations would benefit from more amenities because it will take more time for emergency responders to reach them. Assembly areas that would be disconnected from resources during a tsunami could have amenities to keep people safe and comfortable, and to treat injuries incurred during the evacuation.

Assembly areas that are in neighborhoods or are connected by roads that lead to high ground outside the inundation zone would require less investment. Evacuees at assembly areas in neighborhoods on high ground would have access to resources from their neighbors. Assembly areas that are connected to other areas outside the inundation zone would be relatively easy to reach (assuming the area is still passable following the earthquake), and evacuees there could safely travel beyond their assembly area. Assembly areas that are connected to other areas require fewer amenities.

To ensure the correct level of investment for each assembly area, three investment packages are defined (Table 14). One package is proposed for each assembly area.

Table 14. Assembly Area Investment Packages

Minimum Investment Package	Medium Investment Package	High Investment Package
The minimum investment package is the lowest cost and is just enough infrastructure to establish and declare the assembly area.	*The medium investment package includes amenities to make people more comfortable without requiring much maintenance or management of the assembly area.*	*The high investment package is the highest cost and includes amenities to keep people safe and comfortable for some time after the tsunami. The high investment package requires the most ongoing maintenance and management.* *Supplies could be provided by the county or other organization. Supplies could also be brought by residents and stored on site in a locked facility.*
• Signs indicate that people are above the inundation zone and that they have reached the assembly area (with language such as “this is an official assembly area”). • Assembly area is the appropriate size for the expected evacuation shed. • Assembly area is maintained to be accessible and clear for evacuees.	• Signs indicate that people are above the inundation zone and that they have reached the assembly area (with language such as “this is an official assembly area”). • Assembly area is the appropriate size for the expected evacuation shed. • Assembly area is maintained to be accessible and clear for evacuees.	• Signs indicate that people are above the inundation zone and that they have reached the assembly area (with language such as “this is an official assembly area”). • Assembly area is the appropriate size for the expected evacuation shed. • Assembly area is maintained to be accessible and clear for evacuees.

Minimum Investment Package	Medium Investment Package	High Investment Package
The minimum investment package is the lowest cost and is just enough infrastructure to establish and declare the assembly area.	*The medium investment package includes amenities to make people more comfortable without requiring much maintenance or management of the assembly area.*	*The high investment package is the highest cost and includes amenities to keep people safe and comfortable for some time after the tsunami. The high investment package requires the most ongoing maintenance and management. Supplies could be provided by the county or other organization. Supplies could also be brought by residents and stored on site in a locked facility.*
	• Shelter. • Furniture, such as benches and seats. • Solar lighting.	• Shelter. • Furniture, such as benches and seats. • Solar lighting. • Communication devices (radio transmitters or walkie talkies). • First aid supplies. • Blankets. • Drinking water. • Food.

3.2.2.2 Assembly Area Alternatives

Proposed assembly area alternatives are listed in Table 15 and shown in Figure 12, Figure 13, and Figure 14, as well as in the Online Map.

Table 15. Proposed Assembly Area Alternatives

ID (Map)	General Location	Description	Recommended Investment Package	Benefits or Constraints	Recommendation & Justification
A-01	Arch Cape	Establish a formal assembly area at the end of the trail from Option T-01.	High Arch Cape could be quite isolated following an earthquake. This location can take advantage of the fire station nearby by stocking water, food, supplies, and other amenities to serve the surrounding neighborhood.	Area is available on undeveloped right of way.	**Recommended**. Provides a place for nearby residents and visitors to evacuate to. Establishes a safe ending location for the existing evacuation route. This area could become quite isolated following an earthquake.
A-02	Arch Cape	Establish a formal assembly area at the end of the trail from Option T-02.	Medium Shelters, benches, and lighting	Area is available on undeveloped right of way.	**Recommended**. Provides a place for nearby residents and visitors to evacuate to.
A-03	Arch Cape	Establish a formal assembly area at the end of the evacuation route on Buena Vista Drive from Option T-03.	Minimum	An assembly area would indicate that evacuees have made it to a safe place. Area appears to be privately owned but undeveloped.	**Recommended**. Provides a place for nearby residents and visitors to evacuate to.
A-04	Arch Cape	Establish a formal assembly area at the end of the trail from Option T-04.	Minimum	An assembly area would indicate that evacuees have made it to a safe place. Area appears to be privately owned but undeveloped.	**Recommended**. Provides a place for nearby residents and visitors to evacuate to.

ID (Map)	General Location	Description	Recommended Investment Package	Benefits or Constraints	Recommendation & Justification
A-07	North of Gearhart	Establish one or multiple formal assembly areas along Polo Ridge Road.	Medium Shelters, benches, and lighting could also serve as everyday amenities for residents of Pole Ridge Road. This area is surrounded by low ground expected to be inundated.	Polo Ridge Road is on a narrow ribbon of high ground above the inundation zone. This is the most accessible high ground for most of the Surf Pines community. Multiple assembly areas spaced along the road to maximize accessibility is preferred. Much of the property along the road is developed with homes, and some of the space is required landscape buffer. Some parcels of undeveloped land may be common spaces for the subdivision, opportune locations for assembly areas pending coordination with the landowner (Clatsop Estates LLC).	**Recommended**. Provides a place for nearby residents to evacuate to. Amenities could be features for everyday use by nearby residents. This area is surrounded by low ground expected to be inundated.
A-08	North of Gearhart	Establish a formal assembly area at the end of the trail from Option T-06.	Minimum Though this area is surrounded by low ground, it is approximately one half mile from A-07 on the same patch of high ground.	Land appears to be privately owned but undeveloped.	**Recommended**. This provides a place for nearby residents to evacuate to. Evacuees could walk to A-07 for additional amenities during non-emergency situations.
A-09	North of Gearhart	Establish one or multiple formal assembly areas near West Lake Acres Drive.	High This location can take advantage of the fire station by stocking water, food, supplies, and other amenities to serve the surrounding neighborhood. This area is surrounded by low ground expected to be inundated.	Could co-locate with Gearhart Rural fire station. Multiple assembly areas spaced along the road to maximize accessibility is preferred. Constraints: this area is near wetlands and potential habitat for a federally listed threatened species.	**Recommended**. Provides a place for nearby residents to evacuate to. The fire station is an ideal opportunity to also provide other amenities. This area is surrounded by low ground expected to be inundated.
A-10	North of Gearhart	Establish an assembly area on the wooded hill in Cullaby Lake County Park that connects with T-07.	Medium Shelters, benches, and lighting would also serve as everyday amenities for Cullaby Lake County Park.	A majority of the park land is owned by the Finlandia Foundation. A portion of the land is owned by Clatsop County.	**Recommended**. Provides a place to evacuate for visitors to Cullaby Lake. Also provides amenities for park visitors.

ID (Map)	General Location	Description	Recommended Investment Package	Benefits or Constraints	Recommendation & Justification
A-11	North of Gearhart	Establish a formal assembly area at the end of the trail from Option T-08.	Medium Shelters, benches, and lighting would also serve as everyday amenities for Carnahan County Park.	Land is Carnahan Park, owned by Clatsop County.	**Recommended**. Provides a place to evacuate for residents of North Cullaby Lake and visitors of Cullaby Lake Park. Amenities could be integrated into the park's trail system.
A-13	East of Camp Rilea, east of Hwy 101	Establish a formal assembly area at the end of the trail from Option T-10.	Minimum	Well connected with existing roads. Could serve as evacuation point for several neighborhoods.	**Recommended**. Provides a place to evacuate for nearby neighborhood residents.
A-14	Camp Rilea	Establish a formal assembly area along Pacific Road in Camp Rilea. Connects with Option T-11.	Medium Shelters, benches, and lighting can serve as features of Camp Rilea. This area is surrounded by low ground expected to be inundated.	Well connected with existing roads. Needs to be coordinated with Camp Rilea.	Recommended. Provides a place to evacuate for visitors to Camp Rilea. Amenities could be features for everyday visitors of Camp Rilea. This area is surrounded by low ground expected to be inundated.
A-15	Camp Rilea	Establish a formal assembly area along Demo Road in Camp Rilea. Connects with Option T-12.	Medium Shelters, benches, and lighting can serve as features of Camp Rilea. This area is surrounded by low ground expected to be inundated.	Well connected with existing roads. Needs to be coordinated with Camp Rilea.	**Recommended**. Provides a place to evacuate for visitors to Camp Rilea. Amenities could be features for everyday visitors of Camp Rilea. This area is surrounded by low ground expected to be inundated.
A-16	Camp Rilea	Establish a formal assembly area along 2nd Causeway Road near the south intersection with Cev Road in Camp Rilea.	Medium Shelters, benches, and lighting can serve as features of Camp Rilea. This area is surrounded by low ground expected to be inundated.	Well connected with existing roads. Needs to be coordinated with Camp Rilea.	**Recommended**. Provides a place to evacuate for visitors to Camp Rilea. Amenities could be features for everyday visitors of Camp Rilea. This area is surrounded by low ground expected to be inundated.
A-17	Camp Rilea	Establish a formal assembly area for Option T-13 along 2nd Causeway Road near the north intersection with Cev Road in Camp Rilea.	Minimum A-17 is approximately 1,500 feet north of A-16 and on the same patch of high ground.	Well connected with existing roads. Needs to be coordinated with Camp Rilea.	**Recommended**. Provides a place to evacuate for residents of Spirit Place and Douglas Lane as well as for visitors to Camp Rilea. A-17 is approximately 1,500 feet north of A-16 and on the same patch of high ground.

ID (Map)	General Location	Description	Recommended Investment Package	Benefits or Constraints	Recommendation & Justification
A-18	North of Camp Rilea	Establish a formal assembly area at the south end of Smith Lake County Park; provide signage identifying high ground.	Minimum	Can be co-located with Smith Lake County Park. Potential wetlands in the west part of the park. The south end of the neighborhood is roughly one-half mile from the proposed assembly area, consider a vertical evacuation structure to serve this area (V-03)	**Recommended; low priority**. Provides a place to evacuate for residents of Smith Lake Road..
A-19	North of Camp Rilea	Establish a formal assembly area along Whiskey Road to serve neighbors on the northeast side of Smith Lake.	Minimum	Located on platted, but undeveloped right of way. Adjacent to Warrenton city limits. Coordinate with the City of Warrenton.	**Recommended**. Provides a place for nearby residents and visitors to evacuate to.
A-20	Fort Stevens	Establish a formal assembly area on this ridge of high ground to serve the trails in Options T-15, T-16, and T-17.	Medium Shelters, benches, and lighting can serve as features of Fort Stevens State Park.	Evacuation shed may be large for this location when the park hosts many visitors.	**Recommended**. Provides a place to evacuate for visitors to Fort Stevens State Park. Amenities can serve as everyday features of the park.
A-21	Falcon Cove	Establish a formal assembly area for people in Falcon Cove to gather following a tsunami.	Medium Shelters, benches, and lighting.	Located in a neighborhood above the inundation zone. The Falcon Cove area may be difficult to access after a seismic event. Located on Falcon Cove Water District land.	**Recommended**. Provides a place to evacuate for residents and visitors of Falcon Cove. Amenities could be features for everyday use by nearby residents. This area is surrounded by low ground expected to be inundated

3.2.3 Vertical Evacuation Structures

In locations where natural high ground is not available or is not practical to reach in time before the first tsunami wave arrives, vertical evacuation structures can be appropriately designed and constructed to serve as places of refuge where many people can evacuate and remain for up to 24 hours to escape the initial and subsequent tsunami waves.

3.2.3.1 Structure Locations

Vertical evacuation structures would provide needed refuge in low-lying coastal areas of Clatsop County. General areas that would benefit from vertical evacuation structures are identified in Table 16 and shown in Figure 12, Figure 13, and Figure 14, as well as in the Online Map. Further study is recommended to determine the number of structures in each area, their sizes and types, and their exact location. The study should include robust community involvement. This level of planning for vertical evacuation structures is outside the scope of this TEFIP.

Table 16. Proposed Vertical Evacuation Structure Alternatives

ID	Type	General Location	Description	Recommended Amenities or Features	Benefits or Constraints	Recommendation
V-01	Vertical structure	North of Gearhart	Area north of Gearhart is not well connected and requires traversing long distances to reach high ground.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach.	**Recommended.**
V-02	Vertical structure	North of Gearhart	Area is separated from high ground by Sunset Lake. Requires traveling long distances to evacuate the inundation zone. Consider vertical evacuation structures.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach.	**Recommended.**
V-03	Vertical structure	Camp Rilea	Beach area is nearly one-half mile to high ground.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach and coordination with Camp Rilea.	**Recommended.**
V-04	Vertical structure	South of Warrenton	The community at the southwest end of Smith Lake is roughly one-half mile from high ground.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach. Option A-17 proposes an assembly area at the high ground on the north end of the community.	**Recommended.**
V-05	Vertical structure	Jeffers Garden	Area is surrounded by water and not well connected to high ground.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach.	**Recommended.**
V-06	Vertical structure	Miles Crossing	Area is surrounded by water and not well connected to high ground.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach.	**Recommended.**
V-07	Vertical structure	Clatsop Spit	The Clatsop Spit is long, flat, and vulnerable to a tsunami. It is also popular with visitors of Fort Stevens State Park.	Wayfinding, solar charging, communications.	Placement should be considered through community outreach and coordination with Fort Stevens State Park.	**Recommended.**

4. IMPLEMENTATION AND NEXT STEPS

4.1 Funding and Financing Options

The following funding sources should be considered for implementing evacuation trail improvements to provide a supplement to existing local funding. Tsunami evacuation planning completed for Washington's three southern-most counties has received substantial interest and support from FEMA, and there is a good opportunity for Oregon and Clatsop County to work with FEMA and others to identify and fund innovative tsunami evacuation facilities including trails, assembly areas, and vertical evacuation structures.

4.1.1 Federal Emergency Management Agency (FEMA)

One of the grant programs is FEMA's Building Resilient Infrastructure and Communities (BRIC). It is a relatively new FEMA pre-disaster hazard mitigation program that replaced the former Pre-Disaster Mitigation Grant Program to support states, local communities, tribes, and territories through capability- and capacity-building to reduce the risks they face from disasters and natural hazards. Eligible projects should: be cost effective, reduce or eliminate risk from future natural hazards, meet published codes/standards, align with community hazard mitigation plan, and meet environmental and historic preservation requirements. The Oregon point of contact is the State Hazard Mitigation Officer, Amie Bashant. Contact information: 503-378-4660; amie.bashant@state.or.us.

More information: https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities

In 2016, the City of Newport, Oregon, partnered with FEMA and ODOT to develop Safe Haven Hill as a tsunami evacuation assembly area. In Washington, FEMA has funded the construction of the Shoalwater Bay Indian Tribe tsunami evacuation tower and provided grant assistance to develop the design of a tsunami evacuation platform in the City of Westport.

Oregon Community Paths Program

The Community Paths Program is a new funding program that ties together several pre-existing as well as new funding sources for trails and multimodal pathway improvements. The program is funded through both state and federal sources including funding from the new state bicycle excise tax as well as federal funding from the Transportation Alternatives pot of federal transportation monies. There are two main funding tracks with the Community Paths Program:

- Project refinement – Furthers planning, environmental or permitting work, and design on projects, but does not fund construction explicitly.
- Construction – Funding for final design and construction of trails projects. These can be state or federal funds.

In 2021, the Oregon Transportation Commission approved approximately $15 million in funding for projects across the state. To be competitive, projects need to be well defined, ideally link communities together, fill a critical missing link in a corridor, or serve as an element of the larger regional trail network. Clatsop County would be eligible to apply for both project refinement and construction funds.

More information: https://www.oregon.gov/odot/Programs/Pages/OCP.aspx

4.1.2 Rivers, Trails, and Conservation Assistance Grants from the National Park Service

The National Park Service (NPS) offers the Rivers, Trails and Conservation Assistance grant program for community-led natural resource conservation and outdoor recreation projects. Selection criteria favor projects with a near-term implementation schedule (within 5 years), clearly defined roles for project sponsors, evidence of broad community support, and project attributes that fit with the program's five focus areas, which are listed below. NPS will consider projects outside these focus areas as well.

- Build healthy communities.
- Conserve natural lands, rivers, and watersheds.
- Engage youth in outdoor recreation and stewardship.
- Strengthen organizational capacity of partners.
- Support NPS and community networks.

More information: https://www.nps.gov/orgs/rtca/apply.htm

4.1.3 Oregon Recreational Trails Program

The Recreational Trails Program (RTP) is a federally funded grant program administrated by the Oregon Parks and Recreation Department. Since 1993, Oregon has funded over 500 projects with RTP funds to develop, improve, or expand motorized and non-motorized trails and their facilities. This annual grant program allocates approximately $1.5 million each year and prioritizes projects that are accessible for users of all ages and abilities. The RTP grants can be used for a variety of trails projects, including the following:

- New trail construction
- Heavy trail restoration
- Trail head facilities
- Purchase or lease of trail construction and maintenance equipment
- Land or easement acquisition for trail purposes
- Safety and education programs or materials
- Assessment of trail conditions for accessibility or maintenance
- Water trails

More information: http://www.oregon.gov/oprd/grants/Pages/trails.aspx

4.1.4 Land and Water Conservation Fund

The Land and Water Conservation Fund State Grants program provides 50/50 matching grants to state and tribal governments for the acquisition and development of public parks and other outdoor recreation sites. Grants have funded projects in every county in the country—over 40,000 projects since 1965. Land and Water Conservation Fund monies are distributed to states based on population, and

project selection for these funds is conducted at the state level. Selection criteria for the grants are aligned with Oregon's statewide recreation plan goals and priorities.

More information: https://www.oregon.gov/oprd/GRA/Pages/GRA-lwcf.aspx

4.2 Next Steps

4.2.1 Vertical Evacuation Structures

To implement vertical evacuation structures, we recommend that Clatsop County build upon the success of Washington's Project Safe Haven. The County should leverage the work completed as part of this current TEFIP planning effort to develop a community enagement process and implementation strategy to determine the desired locations for vertical evacuation structures. The plan would develop initial tsunami vertical evacuation options and associated budgetary needs for planning, design, construction, maintanance, and management.

The general areas recommended for vertical evacuation structures in the this TEFIP will need to be refined to determine specific locations, based on land availability, development feasibility, impacts to the surrounding community, and overall benefit to the evacuation network. This refinement should be conducted alongside a robust community engagement process to allow for public input on vertical evacuation structure location, type, and design.

This analysis may determine that locating a vertical evacuation structure in each of the recommended locations may not be feasible, due to funding constraints, lack of available land, or undesirable impacts to the surrounding community. The county will likely need to make difficult decisions about where to prioritize the construction of vertical evacuation structures. This prioritization should be based on a thorough examination of tradeoffs, establishing an acceptable level of risk, and determining which communities may be most at-risk, based on geographic location, vulnerable populations, or other factors. The county should work closely with subject matter experts, stakeholders, and community members throughout this planning process.

Several funding sources are available to assist with the construction of vertical evacuation strucutres. The county should coordinate with FEMA and the Oregon Office of Emergency Management to explore grant opportunities for specific projects. The county may also wish to explore alternative funding sources, such as public-private partnerships.

With help from potential grants and funding from federal, state, and local partners, Clatsop County can take the important step of beginning to build the first vertical evacuation structure in the county and steadily increase the capability of its local govenrments and community champions to plan and implement additional future tsunami vertical evacuation structures. These vertical evacuation structures will save lives following a Cascadia Subduction Zone earthquake, enhance the tsunami resilience of the community, and by leveraging potential synergies between vertical evacuation structures and other community enhancements (e.g., parks, community centers, etc.), improve the everyday quality of life for Clatsop County residents and tourists.

4.2.2 Evacuation Route Improvements

Evacuation route improvements may be implemented through a variety of approaches. An important first step is ensuring that the goals and recommendations within the TEFIP are consistent with county policy and regulations. The county should amend its planning documents to reflect the goals of the TEFIP and support the development of recommended evacuation facility improvements. This should

include supportive goals and policies in the Clatsop County Comprehensive Plan for Statewide Planning Goal 7 (Natural Hazards), Goal 8 (Recreational Needs), Goal 11 (Public Facilities and Services), Goal 12 (Transportation), and Goal 14 (Urbanization), and any other relevant chapters. Incorporating TEFIP goals into the Comprehensive Plan will support the county in making land use and development decisions that implement recommended evacuation facility improvements.

Improvements to the transportation network should be incorporated into the Clatsop County Transportation System Plan (TSP). Identifying recommended improvements will allow the county to prioritize, plan for, and obtain funding for projects identified within the TEFIP.

Amendments to the Clatsop County Land and Water Development and Use Code should be made to support the goals and recommendations within the TEFIP. Code changes may include amendments to zone regulations to allow for the construction of evacuation facilities, such as modification of height limits to allow for vertical evacuation structures, or permitting emergency evacuation facility uses in farm, forest, and residential zones.

Development standards may be amended to require either on- or off-site evacuation facility improvements as a condition of development, in proportion to the impact that the development will have on the evacuation system. Requirements may include trail development or providing amenities such as wayfinding signage or lighting. Additional code amendments may incentivize developers to contribute to evacuation facility improvements, through incentives such as providing flexibility in setbacks, height, or lot coverage.

4.2.3 Assembly Areas

Assembly areas are a critical part of evacuation system infrastructure, as they provide a gathering place and amenities for evacuees in the event of a tsunami. This TEFIP makes recommendations for the establishment or improvement of assembly areas throughout the county. An important first step is for the County to designate land for each assembly area and negotiate with private property owners to obtain easements if needed. Dedicating space for an assembly area should be considered a condition of development for new subdivisions or major development occurring in area of high ground that may be used during an evacuation. Signage should be placed at each assembly area location, so evacuees will know when they have reached safety.

The need for emergency supplies will vary for each assembly area, based on location, nearby amenities, and the number of people the area is expected to serve. Because the need is so dependent on local conditions, many jurisdictions have had success in encouraging neighborhoods and communities to create and maintain their own local supply caches. The county should consider establishing a program that would assist communities in establishing their own supply caches at the assembly area they will use in the event of a tsunami. This program should rely on guidance from DOGAMI's *Earthquake and Tsunami Community Disaster Planning Guide* in supporting communities as they design, implement, and maintain their supply caches. Supporting community ownership of supply caches has the added benefit of increasing familiarity with tsunami assembly areas and evacuation procedures.

Funding for supply caches may come from a variety of sources. Some communities may have the ability to purchase and maintain their own supplies, while others, especially vulnerable communities, may lack the resources to establish a supply cache. The county may wish to establish a grant program to distribute funding to communities who need financial assistance to obtain emergency supplies. Supplies or funding may also be obtained through non-profits, community groups, or donations from local businesses.

EXHIBIT B

TEFIP Implementation Memo

700 NE MULTNOMAH, SUITE 1000 | PORTLAND, OR 97232 | P 503.233.2400, 360.694.5020

MEMORANDUM

DATE:	February 8, 2022, Revised March 2,2022
TO:	Gail Henrikson, Clatsop County
FROM:	Cassandra Dobson, Ryan Farncomb, Nadine Appenbrink
SUBJECT:	TEFIP Implementation Measures
CC:	Michael Duncan, ODOT
PROJECT NAME:	Clatsop County TEFIP

The recommendations in the Clatsop County Tsunami Evacuation Facilities Improvement Plan (TEFIP) may be implemented through a variety of strategies, including updates to County plans, ordinances, and policies. This memorandum provides an overview of recommended implementing measures for Clatsop County.

DLCD RECOMMENDED COMPREHENSIVE PLAN POLICIES

Incorporating goals and policies that support tsunami evacuation route development into the Clatsop County Comprehensive Plan will allow the County to integrate TEFIP recommendations into its long-term development and growth strategies. Initial recommendations for Comprehensive Plan amendments will include the following relevant goals and policies from DLCD's *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities* (https://www.oregon.gov/lcd/Publications/TsunamiLandUseGuide_2015.pdf). These recommended policies should be incorporated into the draft 2040 Comprehensive Plan.

Goal 7: Areas Subject to Natural Hazards

General Policies

To protect life, minimize damage and facilitate rapid recovery from a local source Cascadia Subduction Zone earthquake and tsunami, Clatsop County will:

1. Support tsunami preparedness and related resilience efforts.
2. Take reasonable measures to protect life and property to the fullest extent feasible, from the impact of a local source Cascadia tsunami.
3. Use the Oregon Department of Geology and Mineral Industries (DOGAMI) Tsunami Inundation Maps applicable to Clatsop County to develop tsunami hazard resiliency measures.
4. Adopt a Tsunami Hazard Overlay Zone for identified tsunami hazard areas to implement land use measures addressing tsunami risk.
5. Enact design or performance implementing code components in identified tsunami hazard areas.
6. Implement land division provisions to further tsunami preparedness and related resilience efforts.
7. Consider potential land subsidence projections to plan for post Cascadia event earthquake and tsunami redevelopment.
8. Identify and secure the use of appropriate land above a tsunami inundation zone for temporary housing, business and community functions post event.
9. As part of a comprehensive pre-disaster land use planning effort, consistent with applicable statewide planning goals, identify appropriate locations above the tsunami inundation zone for relocation of using, business and community functions post event.

Evacuation Policy Concepts

To facilitate the orderly and expedient evacuation of residents and visitors in a tsunami event, Clatsop County will:

1. Adopt a tsunami evacuation facilities improvement plan that identifies current and projected evacuation needs, designates routes and assembly areas, establishes system standards, and identifies needed improvements to the local evacuation system.
2. Identify and secure the use of appropriate land above a tsunami inundation zone for evacuation, assembly, and emergency response.
3. Ensure zoning allows for adequate storage and shelter facilities.
4. Provide development or other incentives to property owners that donate land and/or easements for evacuation routes, assembly areas, and potential shelters.
5. Require needed evacuation route improvements, including improvements to route demarcation (way finding in all weather and lighting conditions), vegetation management, for new development and substantial redevelopment in tsunami hazard areas.
6. Work with neighboring jurisdictions to identify inter-jurisdictional evacuation routes and assembly areas where necessary.
7. Provide for the development of vertical evacuation structures in areas where reaching high ground is impractical.
8. Evaluate multi-use paths and transportation policies for tsunami evacuation route planning.
9. Encourage suitable structures to incorporate vertical evacuation capacity in areas where evacuation to high ground is impractical.
10. Install and maintain signs to clearly mark evacuation routes and implement other way finding technologies (e.g., painting on pavement, power poles and other prominent features) to ensure that routes can be easily followed day or night and in all weather conditions.
11. Prepare informational materials related to tsunami evacuation routes and make them easily available to the public.

Policies Related to Reducing Development Risk in High Tsunami Risk Areas

Clatsop County will:

1. Prohibit comprehensive plan or zone map amendments that would result in increased residential densities or more intensive uses in tsunami hazard areas unless adequate mitigation is implemented. Mitigation measures should focus on life safety and tsunami resistant structure design and construction.
2. Encourage open space, public and private recreation and other minimally developed uses within the tsunami inundation zone area.
3. Prohibit the development of those essential facilities and special occupancy structures identified in ORS 455.446 and ORS 455.447 within the [select L XL or XXL as determined by the community] tsunami inundation area. *(Note: While this policy appears in the DLCD Tsunami Land Use Guide, regulations prohibiting construction of new essential facilities within the tsunami inundation zone were repealed by HB 3309 in 2019. Local jurisdictions may still choose to restrict the development of essential facilities through the adoption of a Tsunami Hazard Overlay zone or similar regulation.)*
4. Consider the use of transferrable development credits as authorized by ORS 94.531-94.538 to facilitate development outside of tsunami inundation zones.
5. Encourage, through incentives, building techniques that address tsunami peak hydraulic forces which will minimize impacts and increase the likelihood that structures will remain in place.
6. Protect and enhance existing dune features and coastal vegetation to promote natural buffers and reduce erosion.

Hazard Mitigation Planning

Clatsop County will:

1. Address tsunami hazards and associated resilience strategies within the community's FEMA-approved hazard mitigation plan.
2. Incorporate and adopt relevant sections of the hazard mitigation plan by reference into the comprehensive plan.
3. Ensure hazard mitigation plan action items related to land use are implemented through the comprehensive plan and implementing ordinances.

Tsunami Awareness Education and Outreach

Clatsop County will:

1. Encourage and support tsunami education and outreach, training, and practice.
2. Implement a comprehensive and ongoing tsunami preparedness community education and outreach program. (Note: Some communities have utilized Community Emergency Response Teams (CERT) or CERT-like organizations as a part of that ongoing community education and outreach.)
3. Collaborate with local, state and federal planners and emergency managers for the purpose of developing a culture of preparedness supporting evacuation route planning and other land use measures that minimize risk and maximize resilience from tsunami events.

Debris Management

Clatsop County will:

1. Identify and work to secure the use of suitable areas within the Tsunami Inundation Zone for short and long-term, post-disaster debris storage, sorting and management.
2. Work with other public and private entities to establish mutual aid agreements for post- disaster debris removal and otherwise plan for needed heavy equipment in areas which may become isolated due to earthquake and tsunami damage.

Hazardous Materials

Clatsop County will:

1. Limit or prohibit new hazardous facilities as defined in ORS 455.447 within tsunami inundation zones. Where limiting or prohibiting such facilities is not practical, require adequate mitigation measures consistent with state and federal requirements. (Note: While this policy appears in the DLCD Tsunami Land Use Guide, regulations prohibiting construction of new hazardous facilities within the tsunami inundation zone were repealed by HB 3309 in 2019. Local jurisdictions may still choose to restrict the development of essential facilities through the adoption of a Tsunami Hazard Overlay zone or similar regulation.)

Goal 11: Public Facility and Services

Clatsop County will:

1. Consider and address tsunami risks and evacuation routes and signage when planning, developing, improving, or replacing public facilities and services.
2. Update public facility plans to plan, fund, and locate future facilities outside of the tsunami inundation zone, whenever possible

Goal 12: Transportation

Clatsop County will:

1. Develop multi-use paths that both enhance community livability and serve as tsunami evacuation routes. (*note: this is similar to draft Goal 12 Policy 6b)*
2. Coordinate evacuation route and signage planning in conjunction with existing or proposed transportation system plan pedestrian and bicycle route planning efforts. (*note: this is draft Goal 12 Policy 9e*)
3. Locate new transportation facilities outside the tsunami inundation zones where feasible. (*note: this is draft Goal 12 Policy 6h*)
4. Where feasible design and construct new transportation facilities to withstand a Cascadia event earthquake and be resistant to the associated tsunami. (*note: this is similar to draft Goal 12 Policy 6i)*

Goal 14: Urbanization

Clatsop County will:

1. If the urban growth boundary is expanded to accommodate the relocation of development outside of the tsunami hazard area, limit the allowable uses on the property left vacant by the relocation. Such limitations shall include permitting only low risk uses, or requiring uses which implement adequate protection or mitigation measures for seismic and tsunami hazards.
2. Restrict the development of lodging facilities and higher density residential housing in tsunami inundation zones or require the implementation of protective measures.
3. Plan for the location or relocation of critical facilities outside of tsunami hazard area when conducting the land needs analysis.

ADDITIONAL COMPREHENSIVE PLAN POLICIES

The Clatsop County TEFIP takes a unique approach to tsunami evacuation facility planning, in that it prioritizes those routes that provide a dual benefit of serving as both a route to high ground and as year-round recreational facility. As such, it is appropriate to include additional Comprehensive Plan policies within Goal 8, Recreational Needs. To aid in implementation of specific TEFIP recommendations, the project team has developed additional Comprehensive Plan policies for Goal 7: Natural Hazards relating to assembly areas/disaster supply caches as well as evacuation facility accessibility.

Goal 7: Natural Hazards

Assembly Areas

Clatsop County will:

1. Ensure that County zoning allows for the establishment of assembly areas and emergency supply storage structures, both those managed by the County and those managed by community groups.
2. Coordinate with community groups and preparedness organizations to establish emergency supply caches at tsunami assembly areas.
3. Provide guidance for the design, implementation, maintenance, and deployment of community-owned emergency supply caches.
4. Ensure that assembly areas are equipped with emergency amenities and supplies in an amount appropriate for the number of people the assembly area is expected to serve.
5. Include assembly area and supply cache locations on tsunami evacuation maps and outreach material.

Evacuation Facility Accessibility

1. Provide tsunami evacuation information, maps, and materials in languages other than English.
2. Design wayfinding and evacuation facility signage in a way that is easy to read and understand for people with vision impairments and for people who speak a language other than English.
3. Coordinate with community-based organizations and social service providers to distribute information about tsunamis and evacuation facilities to vulnerable populations.
4. Consider the evacuation needs of community members with mobility challenges when designing evacuation trails and paths, reducing steep grades and incorporating accessibility features where possible.

Goal 8: Recreational Needs

Clatsop County will:

1. Develop new recreational trails that can be used as emergency evacuation routes to high ground outside of the tsunami inundation zone and/or to tsunami assembly areas.
2. Incorporate tsunami evacuation wayfinding signage at all new and existing parks and trailheads within the tsunami inundation zone.
3. Use park and recreation facilities located outside of the tsunami inundation zone as assembly areas and emergency supply storage, where appropriate.
4. Place evacuation wayfinding signage along bicycle and pedestrian trails that serve as tsunami evacuation facilities.
5. Coordinate with OPRD to develop recommended evacuation facility improvements in Fort Stevens State Park.

LAWDUC AMENDMENTS

Requirements and incentives for the development and improvement of tsunami evacuation facilities may be included within the Clatsop County Land and Water Development and Use Code (LAWDUC) to promote increased tsunami resilience through private development and investment.

The DLCD Tsunami Land Use Guide recommends the adoption of a Tsunami Hazard Overlay Zone (THO) to implement the recommendations within the TEFIP, as well as to increase overall tsunami resilience in the community. A THO functions similarly to a floodplain ordinance, in that it ties regulations and requirements to a specific geographic hazard area, in this case the S-XXL tsunami inundation scenarios developed by DOGAMI. The regulations do not apply to the development of single family homes on existing lots, and there are no stricter building code requirements proposed.

The model code included in the guide includes three main sections:

1. Restrictions on the development of critical or hazardous facilities within the inundation zone. These facilities include, but are not limited to, fire and police stations, hospitals, schools, and emergency response facilities. Jurisdictions may choose to restrict different types of facilities within different inundation scenarios, depending on their perceived risk.

While Oregon state law previously prohibited the development of many critical facilities within the tsunami inundation zone, this prohibition was repealed in 2019 by HB 3309. Jurisdictions are still able to adopt critical facility development restrictions within the tsunami inundation zone.[1]

2. **Evacuation route improvement requirements.** These code provisions are intended to implement the recommendations within the TEFIP. They require that all new development, substantial improvements, and land divisions (with the exception of single family homes on existing lots) within the tsunami hazard overlay zone incorporate evacuation measures and improvements. These improvements may be either on- or off-site, should be proportional to the development's anticipated impact on the evacuation system, and should be consistent with the County's TEFIP and/or TSP.

3. **Flexible development option.** This provision provides incentives for development which results in lowered tsunami risk exposure than would otherwise be achieved through application of the development code. Incentives may include reductions or adjustments to setbacks, height, lot coverage, lot size, or other dimensional requirements.

Recommendations for Clatsop County THO

The Tsunami Land Use Guide encourages jurisdictions to adjust the language of the model code to meet the needs of their communities. Additionally, any of the three sections may be removed without impacting the effectiveness of the others. A THO has been adopted by many jurisdictions on the Oregon Coast, including Tillamook County, Coos County, Gearhart, Rockaway Beach, Newport, Florence, North Bend, and Port Orford.

Clatsop County previously pursued adoption of a THO in 2015. However, it was ultimately not adopted due to community concerns. It is highly recommended that the County revisit the THO for future adoption, working closely with stakeholders and the community to adjust the language of the overlay zone as needed. For example, the previous 2015 version of the THO included provisions for a Hazard Acknowledgement and Disclosure Statement, which was to be signed by property owners for any new development of substantial improvements within the hazard area.[2] Many community members expressed concern at this provision, and the County may consider removing it from any future THO adoption efforts. Many communities have adopted a THO without this provision, including Tillamook County, Coos County, Rockaway Beach, Newport, Florence, and Port Orford. Additionally, a requirement for a Hazard Acknowledgement and Disclosure Statement does not appear within the THO model ordinance provided by DLCD.

Full text of the model code from the Tsunami Land Use Guide is included below:

Tsunami Hazard Overlay Zone

1.100 Definitions for Section 1.110

As used in Section 1.110:

(1) "Essential Facilities" means:

(a) Hospitals and other medical facilities having surgery and emergency treatment areas;

(b) Fire and police stations;

(c) Tanks or other structures containing, housing or supporting water or fire suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures;

[1] "HB 3309, relating to statewide tsunami regulations." Oregon Department of Land Conservation and Development. October 7, 2019. https://www.oregon.gov/lcd/NN/Documents/HB3309_FAQ_20191007_DLCD.pdf

[2] [illegible]y Board of Commissioners. September 23, 2015 meeting agenda, Tsunami Hazard Overlay District Ordinance. co.clatsop.or.us/media/24

(d) Emergency vehicle shelters and garages;
(e) Structures and equipment in emergency preparedness centers; and
(f) Standby power generating equipment for essential facilities.

(2) "Hazardous facility" means structures housing, supporting or containing sufficient quantities of toxic or explosive substances to be of danger to the safety of the public if released.

(3) "Special occupancy structures" means
(a) Covered structures whose primary occupancy is public assembly with a capacity greater than 300 persons;
(b) Buildings with a capacity of greater than 250 individuals for every public, private or parochial school through secondary level or child care centers;
(c) Buildings for colleges or adult education schools with a capacity of greater than 500 persons;
(d) Medical facilities with 50 or more resident, incapacitated persons not included in subsection (a) through (c) of this paragraph;
(e) Jails and detention facilities; and
(f) All structures and occupancies with a capacity of greater than 5,000 persons.

(4) "Substantial improvement" means any repair, reconstruction, or improvement of a structure which exceeds 50 percent of the real market value of the structure.

(5) "Tsunami vertical evacuation structure" means a building or constructed earthen mound that is accessible to evacuees, has sufficient height to place evacuees above the level of tsunami inundation, and is designed and constructed with the strength and resiliency needed to withstand the effects of tsunami waves.

(6) "Tsunami Inundation Maps (TIMs)" means the map, or maps in the DOGAMI Tsunami Inundation Map (TIM) Series, published by the Oregon Department of Geology and Mineral Industries, which cover(s) the area within [*jurisdiction name*].

1.200 Tsunami Hazard Overlay Zone

(1) Purpose

The purpose of the Tsunami Hazard Overlay Zone is to increase the resilience of the community to a local source (Cascadia Subduction Zone) tsunami by establishing standards, requirements, incentives, and other measures to be applied in the review and authorization of land use and development activities in areas subject to tsunami hazards. The standards established by this section are intended to limit, direct and encourage the development of land uses within areas subject to tsunami hazards in a manner that will:

(a) Reduce loss of life;
(b) Reduce damage to private and public property;
(c) Reduce social, emotional, and economic disruptions; and
(d) Increase the ability of the community to respond and recover.

Significant public and private investment has been made in development in areas which are now known to be subject to tsunami hazards. It is not the intent or purpose of this section to require the relocation of or otherwise regulate existing development within the Tsunami Hazard Overlay Zone. However, it is the intent of this section to control, direct and encourage new development and redevelopment such that, over time, the community's exposure to tsunami risk will be reduced.

(2) Applicability of Tsunami Hazard Overlay Zone

All lands identified as subject to inundation from the XXL magnitude local source tsunami event as set forth on the applicable Tsunami Inundation Map(s) (TIM) published by the Oregon Department of Geology and Mineral Industries (DOGAMI) are subject to the requirements of this section.

(3) Uses

In the Tsunami Hazard Overlay Zone, except for the prohibited uses set forth in subsection (4), all uses permitted pursuant to the provisions of the underlying zone may be permitted, subject to the additional requirements and limitations of this section.

(4) Prohibited Uses
Unless authorized in accordance with subsection (6), the following uses are prohibited in the specified portions of the Tsunami Hazard Overlay Zone:

(a) In areas identified as subject to inundation from the [*specify design event, S-XXL; recommend "L"*] magnitude local source tsunami event as set forth on the Tsunami Inundation Map (TIM), the following uses are prohibited:
    (A) Hospitals and other medical facilities having surgery and emergency treatment areas.
    (B) Fire and police stations.
    (C) Structures and equipment in government communication centers and other facilities required for emergency response.
    (D) Buildings with a capacity greater than 250 individuals for every public, private or parochial school through secondary level or child care centers.
    (E) Buildings for colleges or adult education schools with a capacity of greater than 500 persons.
    (F) Jails and detention facilities.

(b) In areas identified as subject to inundation from the [*choose design event, S-XXL; recommend "M"*] magnitude local source tsunami event as set forth on the Tsunami Inundation Map (TIM), the following uses are prohibited:
    (A) Tanks or other structures containing, housing or supporting water or fire suppression materials or equipment required for the protection of essential or hazardous facilities or special occupancy structures.
    (B) Emergency vehicle shelters and garages.
    (C) Structures and equipment in emergency preparedness centers.
    (D) Standby power generating equipment for essential facilities.
    (E) Covered structures whose primary occupancy is public assembly with a capacity of greater than 300 persons.
    (F) Medical facilities with 50 or more resident, incapacitated patients.
    (G) Residential uses, including manufactured home parks, of a density exceeding 10 units per acre.
    (H) Hotels or motels with more than 50 units.

(c) Notwithstanding the provisions of [*cite non-conforming use section of code*], the requirements of this subsection shall not have the effect of rendering any lawfully established use or structure nonconforming.

(5) Use Exceptions
A use listed in subsection (4) of this section may be permitted upon authorization of a Use Exception in accordance with the following requirements:

(a) Public schools may be permitted upon findings that there is a need for the school to be within the boundaries of a school district and fulfilling that need cannot otherwise be accomplished.
(b) Fire or police stations may be permitted upon findings that there is a need for a strategic location.
(c) Other uses prohibited by subsection (4) of this section may be permitted upon the following findings:
    (A) There are no reasonable, lower-risk alternative sites available for the proposed use;
    (B) Adequate evacuation measures will be provided such that life safety risk to building occupants is minimized; and,
    (C) The buildings will be designed and constructed in a manner to minimize the risk of structural failure during the design earthquake and tsunami event.
(d) Applications, review, decisions, and appeals for Use Exceptions authorized by this subsection shall be in accordance with the requirements for a Type III procedure as set forth in Section [*cite administrative/procedural section of code*].

(6) Evacuation Route Improvement Requirements

Except single family dwellings on existing lots and parcels, all new development, substantial improvements and land divisions in the Tsunami Hazard Overlay Zone shall incorporate evacuation measures and improvements, including necessary vegetation management, which are consistent with and conform to the adopted Tsunami Evacuation Facilities Improvement Plan, or Transportation System Plan. Such measures shall include:

(a) On-site improvements:

(A) Improvements necessary to ensure adequate pedestrian access from the development site to evacuation routes designated in the Tsunami Evacuation Facilities Improvement Plan in all weather and lighting conditions.

(B) Frontage improvements to designated evacuation routes that are located on or contiguous to the proposed development site, where such improvements are identified in the Tsunami Evacuation Facilities Improvement Plan. Such improvements shall be proportional to the evacuation needs created by the proposed development.

(C) Where identified in the Tsunami Evacuation Facilities Improvement Plan as the only practicable means of evacuation, vertical evacuation structure(s) of sufficient capacity to accommodate the evacuation needs of the proposed development.

(b) Off-site improvements: Improvements to portions of designated evacuation routes that are needed to serve, but are not contiguous to, the proposed development site, where such improvements are identified in the Tsunami Evacuation Facilities Improvement Plan. Such improvements shall be proportional to the evacuation needs created by the proposed development.

(c) Evacuation route signage consistent with the standards set forth in the Tsunami Evacuation Facilities Improvement Plan. Such signage shall be adequate to provide necessary evacuation information consistent with the proposed use of the site.

(d) Evacuation route improvements and measures required by this subsection shall include, at a minimum, the following:

(A) Improved streets and/or all-weather surface paths of sufficient width and grade to ensure pedestrian access to designated evacuation routes in all lighting conditions;

(B) Improved streets and paths shall provide and maintain horizontal clearances sufficient to prevent the obstruction of such paths from downed trees and structure failures likely to occur during a Cascadia earthquake; and

(C) Such other improvements and measures identified in the Tsunami Evacuation Facilities Improvement Plan.

(e) When it is determined that improvements required by this subsection cannot be practicably accomplished at the time of development approval, payment in lieu of identified improvements shall be provided in accordance with [*cite applicable section of code establishing standards and requirements for payment-in-lieu*].

(7) Tsunami Vertical Evacuation Structures

(a) All tsunami vertical evacuation structures shall be of sufficient height to place evacuees above the level of inundation for the XXL local source tsunami event.

(b) Tsunami vertical evacuation structures are not subject to the building height limitations of this chapter.

(8) Flexible Development Option

(a) The purpose of the Flexible Development Option is to provide incentives for, and to encourage and promote, site planning and development within the Tsunami Hazard Overlay Zone that results in lower risk exposure to tsunami hazard than would otherwise be achieved through the conventional application of the requirements of this chapter. The Flexible Development Option is intended to:

(A) Allow for and encourage development designs that incorporate enhanced evacuation measures, appropriate building siting and design, and other features that reduce the risks to life and property from tsunami hazard; and

(B) Permit greater flexibility in the siting of buildings and other physical improvements and in the creation of new lots and parcels in order to allow the full realization of permitted development while reducing risks to life and property from tsunami hazard.

(b) The Flexible Development Option may be applied to the development of any lot, parcel, or tract of land that is wholly or partially within the Tsunami Hazard Overlay Zone.

(c) The Flexible Development Option may include any uses permitted outright or conditionally in the applicable zone, except for those uses prohibited pursuant to subsection (4) of this section.

(d) Overall residential density shall be as set forth in the underlying zone or zones. Density shall be computed based on total gross land area of the subject property, excluding street right-of-way.

(e) Yards, setbacks, lot area, lot width and depth, lot coverage, building height and similar dimensional requirements may be reduced, adjusted or otherwise modified as necessary to achieve the design objectives of the development and fulfill the purposes of this section.

(f) Applications, review, decisions, and appeals for the Flexible Development Option shall be in accordance with the requirements for a Type II [or Type III] procedure asset forth in Section [*cite administrative/procedural section of code*].

(g) Approval of an application for a Flexible Development Option shall be based on findings that the following criteria are satisfied:

(A) The applicable requirements of sub-paragraphs (b) and (d) of this subsection, above, are met; and

(B) The development will provide tsunami hazard mitigation and/or other risk reduction measures at a level greater than would otherwise be provided under conventional land development procedures. Such measures may include, but are not limited to:

1. Providing evacuation measures, improvements, way finding techniques and signage at a level greater than required by subsection (6) of this section;
2. Providing tsunami evacuation structure(s) which are accessible to and provide capacity for evacuees from off-site;
3. Incorporating building designs or techniques which exceed minimum structural specialty code requirements in a manner that increases the capacity of structures to withstand the forces of a local source tsunami; and
4. Concentrating or clustering development in lower risk portions or areas of the subject property, and limiting or avoiding development in higher risk areas.

Additional LAWDUC Amendments

Adopting a THO is the most effective and efficient way to implement TEFIP recommendations. In addition to the THO, the following LAWDUC amendments will remove potential barriers to TEFIP implementation.

Section 3.0170. Height Limitations for Non-Habitable and Non-Storage Structures. Add language to exempt vertical tsunami evacuation structures from height requirements of code.

Section 3.9220(E). Public and Quasi-Public Uses. Revise requirements for emergency supply structures to allow for structures managed by local community or emergency preparedness groups in addition to those managed by local governments.

Section 3.9550. Pedestrian and Bicycle Access and Circulation. Include language to require that development within the tsunami inundation zone include pedestrian connections to tsunami evacuation routes.

In addition, the County may wish to review building codes to ensure that they allow for the integration of vertical evacuation structures into buildings of sufficient height within the inundation zone.

TSP AMENDMENTS

Incorporating specific trail projects and improvements into the Clatsop County Transportation System Plan will allow the County to plan for the funding, design, and construction of tsunami evacuation facilities as it makes investments in its transportation infrastructure. Adopting trail projects into the TSP will also allow them to be permitted outright in all zones, per LAWDUC Section 4.0300(C).

Recommended implementation measures include incorporating TEFIP trail recommendations into the TSP project list, including: T-01, T-02, T-04, T-06, T-07, T-08, T-10, T-11, T-12, T-15, T-16, and T-17.

Table 1. Proposed Trail Alternatives

ID & Trail Type (See Map)	General Location	Description	Cost Estimate
T-01 On street (shared roadway)	Arch Cape	Continue evacuation route outside of inundation zone from E Shingle Mill Lane, north on Fire Rock Road, and east to high ground. Pave 20-foot wide roadway to improve seismic resilience.	$250,000
T-02 MUP	Arch Cape	Create a trail along Oceanview Lane right of way that leads to high ground.	$400,000
T-04 MUP	Arch Cape	Create a trail at the north end of Carnahan Road that continues north to high ground.	$100,000
T-06 Recreation	North of Gearhart	Create a trail to connect Shady Pine Road across Neacoxie Creek to higher ground to the west.	$1,250,000
T-07 Recreation	North of Gearhart	New trail to high ground from Cullaby Lake County Park parking areas and recreation areas.	$300,000
T-08 Recreation	North of Gearhart	New trail to high ground from Cullaby Lake Lane. Adds a pedestrian bridge over Skipanon River parallel to the existing roadway bridge.	$300,000
T-10 MUP	Southeast of Camp Rilea	Connect the neighborhood at Glenwood Village to high ground with trail to the east.	$450,000
T-11 On street (shared roadway)	Camp Rilea	Improve Pacific Road to serve as an evacuation route.	<$50,000
T-12 On street (shared roadway)	Camp Rilea	Improve Demo Road to serve as an evacuation route. Paves a 20-foot-wide roadway surface.	$700,000
T-15 MUP	Fort Stevens	Improve existing trail to serve as evacuation route for people in park or at beach.	$450,000
T-16 MUP	Fort Stevens	New connection from existing trail to high ground.	$400,000
T-17 MUP	Fort Stevens	New connection from existing Jetty Road parking area to high ground.	$100,000

ADDITIONAL RESOURCES

Oregon Tsunami Land Use Guide. Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities. Department of Land Conservation and Development. 2015. https://www.oregon.gov/lcd/Publications/TsunamiLandUseGuide_2015.pdf

FEMA P-646. Guidelines for Design of Structures for Vertical Evacuation from Tsunamis. Federal Emergency Management Agency. 2019. https://www.fema.gov/sites/default/files/2020-08/fema_earthquakes_guidelines-for-design-of-structures-for-vertical-evacuation-from-tsunamis-fema-p-646.pdf

Project Safe Haven. Tsunami Vertical Evacuation Systems on Washington State's Pacific Coast. FEMA. 2021. https://www.fema.gov/node/465491

Assembly Areas and Disaster Caches. Earthquake and Tsunami Community Disaster Cache Planning Guide. DOGAMI. 2021. https://www.oregongeology.org/tsuclearinghouse/resources/pdfs/TsunamiDisasterCachePlanningGuide.pdf

Tsunami Evacuation Wayfinding Guidance. Oregon Tsunami Evacuation Wayfinding Guidance. Oregon Office of Emergency Management and DOGAMI. https://www.oregon.gov/oem/Documents/Tsunami_Evacuation_Signage_and_Wayfinding_Guidance.pdf

Tsunami Planning Guidance and Examples from Oregon Coast Communities. DLCD. https://www.oregon.gov/LCD/OCMP/Pages/Tsunami-Planning.aspx

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March 30, 2022

TO: Clatsop County Planning Commission

FR: Julia Decker, Planning Manager

CC: Gail Henrikson, Director

RE: Goal 9 Revision Continuation Request

Staff is not able to present a draft of Goal 9 as revised at the January 25, 2022, Joint Planning Commission/Countywide CAC meeting. Staff originally requested the matter be continued to the April 12, 2022, Planning Commission meeting; however, due to extenuating circumstances, staff now requests the Planning Commission's review of Goal 9 be continued to the May 10, 2022, Planning Commission meeting.

Clatsop County

TO: Clatsop County Planning Commission Members
Countywide Citizen Advisory Committee Members

FROM: Gail Henrikson, Community Development Director

DATE: April 4, 2022

RE: **COMPREHENSIVE PLAN GOAL 11: PUBLIC FACILITIES AND SERVICES POLICY COVER MEMO (DRAFT 03)**

GOAL 11 OVERVIEW
The purpose of Goal 11 – Public Facilities and Services is to "plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development." Requirements for when public facilities can be expanded or extended into rural areas are detailed in OAR 660-011.

Because Oregon's land use system intends for higher-density and more intense development to be directed to incorporated areas and urban growth boundaries, there are very limited options available to the County with regard to the provision or extension of public services.

Draft 01 of Goal 11 was presented to the Board of Commissioners during a work session held on December 15, 2021. Draft 01 included a brief initial updated narrative and recommendations regarding the existing Goal 11 policies. The majority of the policies from the 1980 comprehensive plan still apply or need only minor revisions. Some of the policies are no longer applicable or those recommendations have been completed and the policies should be deleted.

BOARD OF COMMISSIONERS DISCUSSION
The Board of Clatsop County Commissioners discussed Goal 11, Draft 01 at a work session held December 15. The Board's discussion included the following:

- The County should explore its role in supporting special districts. The County might be able to provide assistance to small special districts by identifying and/or preparing grant applications (Bangs).
- The County needs to open lines of communication with special districts (Bangs).
- What are the impacts on the rural communities if diking districts are not active or maintaining dikes (Bangs).
- Language regarding the approved FY 21/22 Strategic Plan related to the Environmental Quality Action Team is not unbiased (Bangs).
- Language regarding Falcon Cove Beach Domestic Water District water moratorium should be deleted as the data used by the water district to impose the moratorium has been refuted by subject matter experts (Thompson).
- The County needs to be consistent with its policies in the County, particularly with regard to a possible moratorium for new homes on the Clatsop Plains that are less than one acre and utilizing septic systems. Concerns have been raised that transients can live in RVs and dump waste directly onto the ground, but face no penalties, while property owners might be subject to a moratorium (Toyooka).

- This issue needs to be reviewed regionally (Toyooka).
- More data is needed to support a moratorium and there have not been any issues in Gearhart (Toyooka).
- Understanding the needs of diking districts is crucial (Kujala).
- Concerns about including the Falcon Cove Beach water moratorium in the comprehensive plan (Kujala).
- A regional water study was completed for the City of Warrenton. County needs a professional consultant to prepare a report regarding water quantity/quality (Kujala), supported by Commissioner Bangs.
- There should be no room for bias in the comprehensive plan. When conflicting situations exist, such as the Falcon Cove Water district moratorium, those events should not be in the comprehensive plan (Bangs).
- The purpose of the Environmental Quality Action Team is to identify where data is lacking in order to identify what areas require more in-depth study (Wev).
- Diking districts are critical to control water events and effects of climate change (Wev).
- An Environmental Quality Action Team is not needed to hire an outside consultant to conduct a study (Bangs).
- How can the County obtain the information that's needed in the most financially responsible method (Bangs).
- County needs to work with the water districts and the cities (Kujala).
- County needs to begin to address climate change-related issues now (Wev).
- Water quality and quantity is important to the community. Hiring an outside consultant to conduct a water analysis is a good idea (Bangs).
- The County should assist and facilitate with the water districts in the county (Bangs).
- The County should not duplicate efforts or information that is already being collected by other agencies (Bangs).

JOINT PLANNING COMMISSION / COUNTYWIDE CAC REVIEW
The Planning Commission and Countywide CAC reviewed Goal 11 - Draft 02 at a meeting held January 25, 2022. Amendments to Goal 11 made at that meeting have been incorporated into Goal 11 – Draft 03. The motions and votes on those revisions are included on the link below to Goal 11 – Draft 02.

Also included in Goal 11 – Draft 03 are recommended policies developed as part of the Tsunami Evacuation Facilities Improvement Plan (TEFIP). The policies, which are designed to implement the recommendations from the final TEFIP report, are based upon the Department of Land Conservation and Development's (DLCD) *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities*.

ACTION ITEMS:

1) Review Goal 11 - Draft 03.
- Identify any questions you have regarding Goal 11 Draft 03
- Provide a recommendation to the Board of Commissioners, including any recommended amendments, on Goal 11 Draft 03
- ***Suggested Motion:*** *I recommend the Board of Commissioners adopt Goal 11, Draft 03, as submitted by staff. (if there are no amendments)*

- ***Suggested Motion:*** *I recommend the Board of Commissioners adopt Goal 11, Draft 03, as amended. (if there are amendments)*

BACKGROUND MATERIALS PROVIDED IN APRIL 12, 2022, AGENDA PACKAGE:

- Goal 11 - Draft 03: Public Facilities and Services

SUPPLEMENTAL INFORMATION

- Statewide Planning Goal 11
- Clatsop County Goal 11 – Current adopted version
- December 15, 2021, Board of Commissioners Work Session Video
- January 25, 2022, Joint Planning Commission / Countywide CAC Meeting Video
- Goal 11 - Draft 02
- Goal 11 - Draft 01
- OAR 660-011: Public Facilities and Planning

STATEWIDE PLANNING GOAL 11:

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

CLATSOP COUNTY GOAL 11:

To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development in Clatsop County.

.OVERVIEW

Public facilities and services affect a community in ~~two~~ four ways:

(1) Through the costs involved in their financing; ~~and~~
(2) Through their influence on land use patterns;~~.~~
(3) Through their economic impacts; and
~~(2)~~(4) Quality of life impacts.

The nature and level of these services do much to define a community, clearly marking the differences between urban and rural land usage by their presence or absence.

The five incorporated cities and unincorporated Clatsop County provide differing levels of public facilities. Almost all of the cities provide police and fire protection, sewer, water and library services. As the size of a city increases, the services provided become more varied.

There are limited public facilities and services provided in rural Clatsop County. This is due to the low density development characteristics of the zoning and to the lack of need to serve resource farm and forest lands. Most rural land uses are sufficiently dispersed so as not to efficiently or financially support public facilities such as sewer.

Per the requirements of Statewide Planning Goal 11, counties with an unincorporated community must develop and adopt a community public facility plan that regulates facilities and services. Outside of urban growth boundaries, public facilities such as water or sewer should generally not be provided. Examples from the Department of Land Conservation and Development (DLCD) state:

- Public sewer service is only allowed outside of an urban growth boundary to alleviate an existing health hazard.
- Public water service is only allowed if it is not used as a justification to increase existing levels of allowed rural development.

Clatsop County is responsible for coordinating the planning for public services in unincorporated county areas. These planning efforts should be done in coordination with local special districts and service providers.

CURRENT CONDITIONS

DIKING AND DRAINAGE DISTRICTS

There are 14 diking districts, both active and inactive. Most of the dikes and water control structures were constructed prior to the 1940s. Much of the agricultural land in the Northeast Planning Area has been drained by the construction of dikes, which are vulnerable to breaches by flooding and/or sea level rise. In the Miles Crossing/Jeffers Garden area, the dikes drain the land and provide protection to many homes and businesses.

TABLE 1: DIKING DISTRICTS			
DISTRICT NAME	DISTRICT #	STATUS	ACRES
Clatsop #1 Drainage Improvement Company	#1	Active	Unknown
Clatsop Diking Improvement Company	#7	Active	Unknown
Svensen Island	N/A	Unknown	293
Warrenton	N/A	Unknown	5,578
Gnat Creek	4	Unknown	85
Jeffers Garden	5	Active	628
Tenasillahee Island	6	Inactive	1,733
Blind Slough	7	Unknown	1,485
Lewis & Clark	8	Inactive	1,039
Youngs River	9	Unknown	3,305
Karlson Island	10	Defunct	349
Brown	11	Active	416
Knappa	12	Inactive	93
Walluski	13	Unknown	905
John Day	14	Active	342
Westport	15	Active	238

Source: Clatsop County Public Works

As noted above, many of these water districts are no longer active. This has implications for the responsibility for ongoing repairs and maintenance. Because much of the agricultural land along the Columbia River and contributing sloughs and streams was created by constructing dikes, these areas are vulnerable when maintenance is continually deferred. Rising sea levels will also impact dikes and the land behind those structures if the dikes are not properly maintained. Well maintained dikes affect the ability to farm and have economic impacts on agriculture.

The Skipanon Water Control District previously covered the Skipanon River area, Warrenton, and Cullaby Lake. The District provided flood protection, controlled the water level for

recreation use at Cullaby Lake and helped to minimize shrinking and swelling of the peat soils. The District was dissolved in 2020 and its assets were transferred to the City of Warrenton and to Clatsop County.

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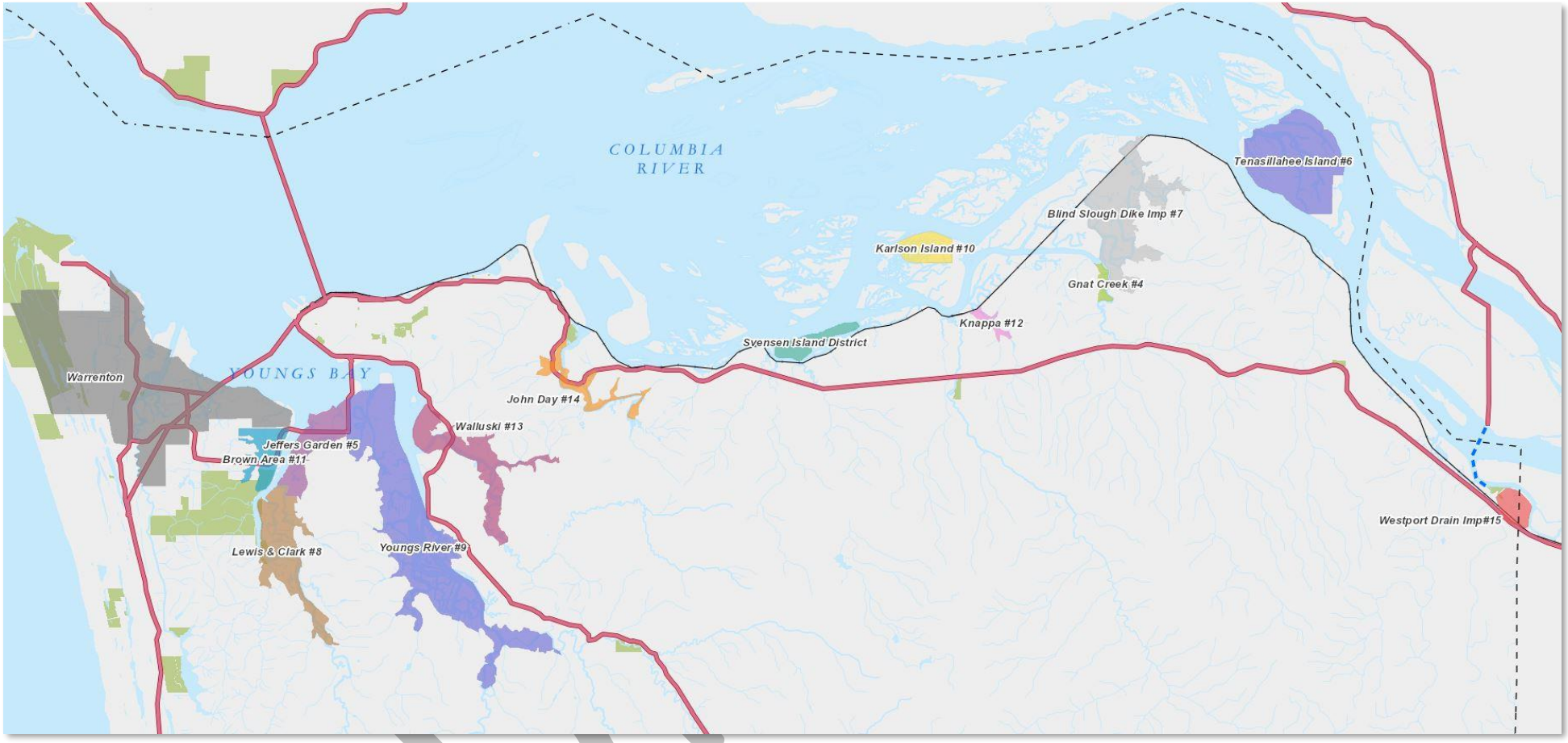
MAP 1: DIKING DISTRICTS



SOURCE: Clatsop County GIS

WATER SUPPLY

Most of Clatsop County's rural residents obtain their water from a community water system. Other residents utilize a surface source, a spring, or a well. There are currently 34 licensed community and municipal water systems that serve the residents and businesses of Clatsop County (**Table 1**). Two of those systems – Falcon Cove Beach and Fishhawk Lake, are licensed in Tillamook and Columbia counties, respectively.

Over the past several years, the issues of water quantity and water quality have become increasingly prominent. Climate change will also likely increase the instances and severity of drought over the next 20 years. As noted by the Oregon Climate Change Research Institute (OCCRI) in its 2020 report for Clatsop County, average temperatures are projected to rise 2.1°F by 2040. Instances of drought will also increase due to low summer moisture, low spring snowpack, low summer runoff, low summer precipitation and higher summer evaporation.

In March 2020, the City of Warrenton issued an emergency order which prohibits new connections or expansion of existing water services outside of the city boundaries. Because much of the new residential development west of Highway 101 relies on water from Warrenton, this moratorium has had an impact on new development in the Clatsop Plains Planning Area.

During the process of updating the Clatsop County Comprehensive Plan and associated community plans, it has become apparent that the communities are strongly concerned about water quantity and quality and that there is insufficient current data available to provide a foundation for policy and projects.

TABLE 2: ACTIVE DRINKING WATER SYSTEMS, CLATSOP COUNTY							
PWS ID	**PWS Name**	**Regulating Agency**	**System Type**	**Owner Type**	**Connections**	**Population Served**	**Primary Source**
OR4100802	ARCH CAPE WATER DISTRICT	State - Reg 1	C	Local Government	293	150	SW
OR4100055	ASTORIA, CITY OF	State - Reg 1	C	Local Government	4,076	9,802	SW
OR4100054	BURNSIDE WATER ASSOCIATION	County	C	Private	112	315	SWP
OR4194481	CAMP 18	County	NC	Private	5	69	GW
OR4195443	CAMP RILEA	County	NTNC	State Government	75	136	GW
OR4100164	CANNON BEACH, CITY OF	State - Reg 1	C	Local Government	1,781	1,710	GW
OR4100044	CANNON VIEW PARK INC	County	NC	Private	50	75	GW
OR4100804	ELDERBERRY NEHALEM WS	County	C	Private	60	140	GW
OR4100805	EVERGREEN ACRES	County	C	Private	47	100	GW
OR4100045	FALCON COVE BEACH WD	County (Tillamook)	C	Private	92	200	GW
OR4100059	FERNHILL COMMUNITY WTR SYSTEM	County	C	Private	91	300	SWP
OR4100124	FISHHAWK LAKE RESERVE AND COMMUNITY	State - Reg 1	C	Private	250	350	SW
OR4100318	GEARHART WATER DEPARTMENT	County	C	Local Government	1,400	1,465	SWP
OR4190416	GEORGIA PACIFIC CO LLC WAUNA	State - Reg 1	NTNC	Private	1	700	SW
OR4194157	HAMLET QUICK-STOP	State - Reg 1	NC	Private	1	30	SW
OR4190531	JEWELL SCHOOL DISTRICT #8	State - Reg 1	NTNC	Local Government	10	200	GU
OR4100060	JOHN DAY WATER DISTRICT	County	C	Private	101	350	SWP
OR4100061	KNAPPA WATER ASSOCIATION	County	C	Private	574	1,800	GW
OR4195297	ODF NORTHRUP CREEK HORSE CAMP HP	County	NC	State Government	1	55	GW
OR4190762	ODF SPRUCE RUN PARK HP	County	NC	State Government	1	40	GW
OR4191097	ODOT HD SUNSET SPRINGS RA	County	NC	State Government	3	500	GW
OR4100057	OLNEY-WALLUSKI WATER ASSN	County	C	Private	233	530	SWP
OR4190413	ONEYS RESTAURANT/LOUNGE	County	NC	Private	6	60	GW
OR4191007	OPRD BRADLEY STATE WAYSIDE	County	NC	State Government	2	383	GW
OR4100799	SEASIDE WATER DEPARTMENT	State - Reg 1	C	Local Government	3,500	6,400	SW
OR4100800	STANLEY ACRES WATER ASSN	County	C	Private	112	315	SWP
OR4100933	SUNSET LAKE RV PARK	County	C	Private	100	170	GW
OR4100932	WARRENTON, CITY OF	State - Reg 1	C	Local Government	3,539	9,100	SW
OR4100951	WAUNA WATER DISTRICT	County	C	Local Government	68	188	GW
OR4100195	WESTPORT HEIGHTS	County	C	Private	40	90	GW
OR4100950	WESTPORT WATER ASSOCIATION	County	C	Private	165	550	GWP
OR4100063	WICKIUP WATER DISTRICT	State - Reg 1	C	Private	636	1,590	SW
OR4100058	WILLOW DALE WATER DISTRICT	County	C	Local Government	125	300	SWP
OR4100062	YOUNGS RIVER LEWIS & CLARK WD	State - Reg 1	C	Local Government	1,004	2,530	SW

Source: Oregon Health Authority, Drinking Water Data Online, 2021

System Classification:
C = Community Water System: A water system that has 15 or more service connections used by year-round residents, or that regularly supplies drinking water to 25 or more year-round residents. Examples are cities, towns, subdivisions, and mobile home parks.
NTNC = Non-Transient Non-Community Water System: A water system that supplies water to 25 or more of the same people at least six months per year in places other than their residences. Examples include schools, hospitals, and work places.
NC or TNC = Transient Non-Community Water System: A water system that provides water to 25 or more persons in a place where people do not remain for long periods e, such as a restaurant or campground.

NP = Non-EPA (State Regulated) Water System ("Non-Public"): A water system that provides water to small residential communities between 4 and 14 connections, or serves from 10 to 24 persons a day at least 60 days a year, or is licensed by the Health Division or delegate county health department but is not a Transient Water System.
W = Wholesale System: A water system that produces finished water and delivers all of that finished water to one or more public water systems.

Agency:
Who has primary responsibility to provide oversight and help to the water system
S = Oregon Health Authority
A = Department of Agriculture
C = Local county health department

Source Type/Primary Source:

GW = Groundwater (wells, springs).
SW = Surface water (e.g., rivers, lakes, creeks).
GU = Groundwater under direct influence of surface water (GWUDI). GWUDI refers to groundwater sources located close enough to nearby surface water to receive direct surface water recharge.
GWP = Purchases water from another water system that uses ground water only.
SWP = Purchases water from another water system that uses surface water or surface water and ground water mixed.
GUP = Purchases water from another water system that uses GWUDI or GWUDI and ground water mixed.

WASTE DISPOSAL

In most parts of unincorporated Clatsop County and within the City of Gearhart, sewage is handled through the use of on-site sewage disposal systems. The four other cities within the County operate municipal sewer systems. In recent years, in order to address concerns from the Oregon Department of Environmental Quality, some community sewer systems have been connected to municipal systems or new community sewer systems have been permitted. Table 3 identifies sewer districts within unincorporated Clatsop County.

TABLE 3: SEWER DISTRICTS	
DISTRICT NAME	**COMMENTS**
Arch Cape Sanitary District	Active Connections: 345 Connections at Build-Out: 485
Miles Crossing Sanitary Sewer	Information not available
Shoreline Sanitary	Information not available
Sundown Sanitary	Information not available
Westport Sewer	Active Connections: 90 Additional Information: Operated by Clatsop County Public Works. This district serves 90 connections and is funded by user fees. In 2007, the Oregon Department of Environmental Quality (DEQ) required the district to expand and reconfigure its sewer plant to ultraviolet treatment of wastewater in order comply with wastewater standards. Those improvements cost in excess of $1 million and were funded by a $1 million grant from the Oregon Economic Development Division, a $112,250 loan from DEQ and by user fees.

[1] MGD: Million Gallons per Day

Source: Clatsop County Public Works

OTHER PUBLIC FACILITIES AND SERVICES

Within Clatsop County, there are 52 different service districts and associations of varying types and sizes. These include fire districts, school districts, diking districts, healthcare, education, water districts and law enforcement and road districts, among others. Special districts are local agencies that deliver specific services to specific communities. Special districts are autonomous government entities that are accountable to the voters or landowners they serve. Table 4 details these districts.

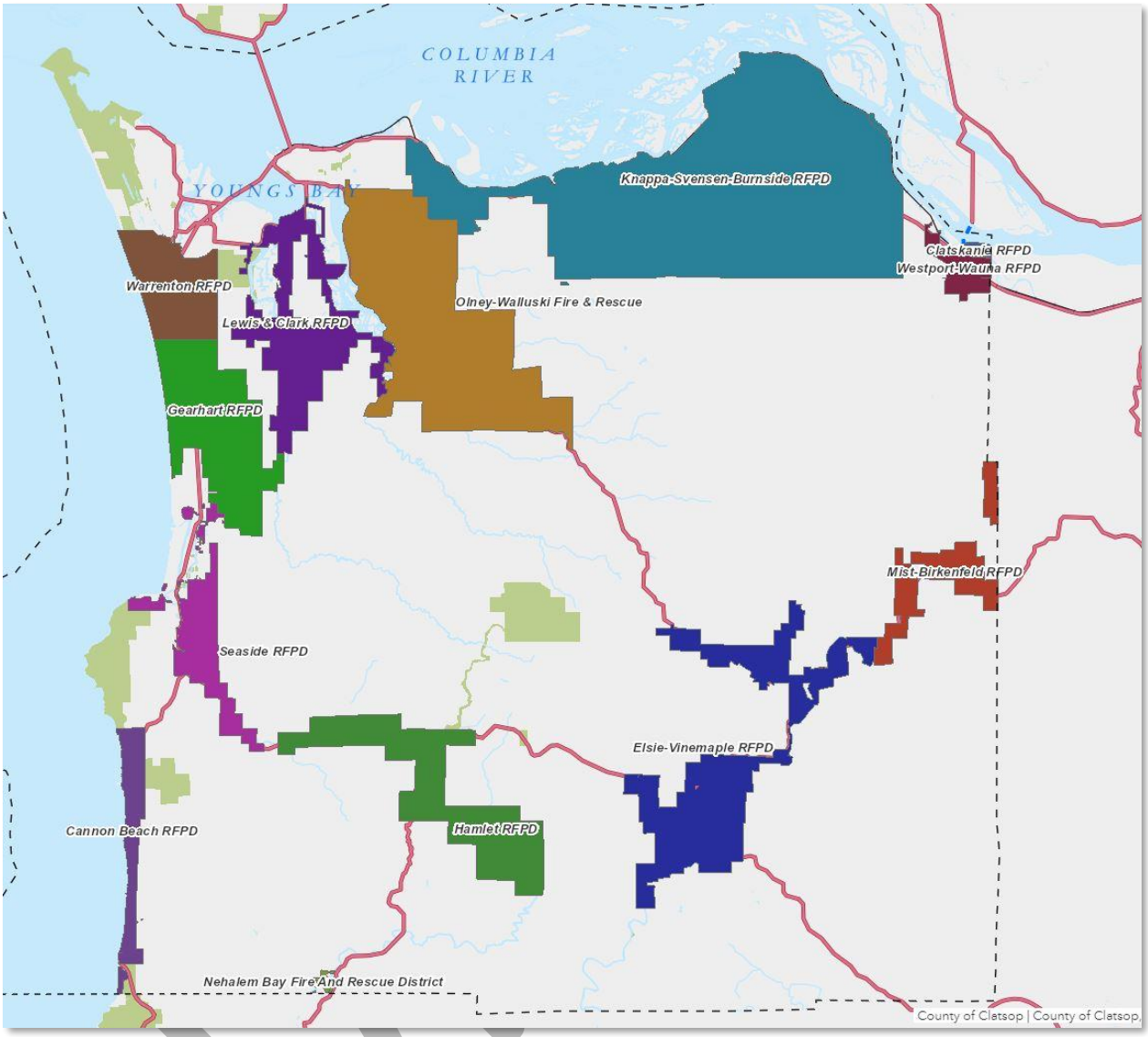
TABLE 4: SPECIAL DISTRICTS		
DISTRICT TYPE	**DISTRICT NAME**	**DISTRICT PURPOSE**
Soil and Water	Clatsop Soil and Water Conservation District	Identify local conservation needs and support landowners in implementing solutions
Utility and Utility Subdivision	Clatskanie, PUD, Subdivision 1	People's utility districts provide power
	PUD Sub Zone 5	
Community College	Clatsop Community College	Provide post-secondary education

TABLE 4: SPECIAL DISTRICTS		
DISTRICT TYPE	DISTRICT NAME	DISTRICT PURPOSE
Transportation	Sunset Empire Transportation District	Provide public transportation services that connect regions
School	Astoria School District 1C	Provide K-12 education
	Clatskanie School District 6J	
	Knappa School District 4	
	Jewell School District 8	
	Seaside School District 10	
	Warrenton-Hammond School District 30	
Fire	Cannon Beach Rural Fire Protection District	Protect homes, businesses, and the environment from fires and respond to medical emergencies
	Gearhart Rural Fire Protection District	
	John Day-Fernhill Rural Fire Protection District	
	Knappa-Svensen-Burnside Rural Fire Protection District	
	Lewis & Clark Rural Fire Protection District	
	Seaside Rural Fire Protection District	
	Warrenton Rural Fire Protection District	
	Westport-Wauna Rural Fire Protection District	
	Clatskanie RFPD	
	Hamlet Rural Fire Protection District	
	Olney-Walluski Fire and Rescue District	
	Elsie-Vinemaple Rural Fire Protection District	
	Mist-Birkenfeld RFPD	
	Nehalem Bay Fire and Rescue District	
Water	Burnside Water Association	Deliver water to residential, commercial, and agricultural areas
	Falcon-Cove Beach Domestic Water District	
	Wickiup Water District	
	Youngs River Lewis and Clark Water District	
	Arch Cape Domestic Water Supply District	
	Willowdale Water District	
	John Day Water District	
	Sunset Lake Water District	
	Wauna Water District	
Water Control	Skipanon Water Control District (dissolved)	Control water to reduce or eliminate flooding
Park	Sunset Empire Park and Recreation District	Provide parks, open spaces, and community programs to improve quality of life
Port	Port of Astoria	Manage recreational, economic, and environmental coastal and river infrastructure
Health	Union Health District	Promote the physical and mental health of communities, which may include
	Clatsop Care Center Health District	

TABLE 4: SPECIAL DISTRICTS		
DISTRICT TYPE	DISTRICT NAME	DISTRICT PURPOSE
		preventative care, nutrition education, health clinics, traditional hospitals, or other services
Sanitary	Sundown Sanitary District	Treat and recycle wastewater
	Shoreline Sanitary District	
	Arch Cape Sanitary District	
	Westport Sanitary District	
	Miles Crossing Sanitary Sewer District	
Other	4H Extension Service	County service districts and other districts offer over 22 different types of services, such as law enforcement, agricultural educational extension services, and street lighting
	Clatsop Rural Law Enforcement, Zone 1	
	Clatsop Rural Law Enforcement, Zone 2	
	Clatsop Rural Law Enforcement, Zone 3	
	Clatsop Rural Law Enforcement, Zone 4	
	Clatsop Rural Law Enforcement, Zone 5	
	Astor East Urban Renewal	
	SE Seaside Urban Renewal	
	Warrenton Urban Renewal	

Source: Clatsop County Assessment and Taxation; Special Districts Association of Oregon

MAP 2: RURAL FIRE PROTECTION DISTRICTS



SOURCE: Clatsop County GIS

MAP 3: SCHOOL DISTRICTS

SOURCE: Clatsop County GIS

APPROPRIATE LEVELS OF PUBLIC FACILITIES

Oregon Administrative Rule (OAR) 660-011 provides requirements regarding the siting of public facilities and services on rural lands. OAR 660-011-0060(2) prohibits local governments from allowing the establishment of new sewer systems outside of urban growth boundaries unless a public health issue will be resolved. Additionally, local governments cannot use the existence of a public water system to increase base density in a residential zone.

Six different plan designations exist for lands in the County. Differing levels of public facilities and services are appropriate for the different types of development planned for the County.

Certain facilities and services are available to all county residents, such as County health services, Sheriff's protection and many other social services. Other services, such as sanitary sewer and wastewater treatment plants and public transit are more appropriate for incorporated areas where higher densities make the provision of such types of services cost effective.

Development

This is a Plan category for estuary and shoreland areas appropriate for commercial and industrial use. Consequently, a level of public facilities sufficient to carry on that type of use is appropriate. Public water and sewer services would be appropriate but may not be necessary depending on the type of development. Public fire protection may be appropriate. Development here will not directly affect school services, although increased employment may result in increased housing in the vicinity which would impact school. Those impacts will be considered in terms of the residential effects, not at the point of commercial or industrial development.

a. **Urban Growth Boundary (UGB):** Appropriate levels of services for UGB areas are identified in the comprehensive plans of the individual cities.

b. **Rural Service Areas (RSA) and Rural Communities:** The RSAs in the County are:

- Fishhawk Lake Estates
- Shoreline Estates
- Old Naval Hospital Site (now the River Point subdivision)

The Rural Communities in the County are:

- Arch Cape
- Miles Crossing / Jeffers Garden
- Knappa
- Svensen
- Westport

~~All~~ Arch Cape, Miles Crossing/Jeffers Gardens and Westport currently have public water, sewer and fire protection. Neither Knappa nor Svensen have served by public sewer. Public water or sewer services and fire protection are appropriate and further development must be based on the capacities of the systems. Development in these areas can have significant impacts on schools. Applications for new subdivision will be referred to the appropriate school district. Development will only be allowed if the schools have sufficient capacity to accommodate new students that are expected to be generated from the proposed new development.

Rural Lands

Most of the areas built upon or committed to non-resource use in the County are in this Plan designation. Much of the area is currently served by community water systems. The City of Astoria provides water to the John Day and Fern Hill Water District. As discussed above, the Falcon Cove Beach Domestic Water District enacted a moratorium from 2018-2020. It is important to monitor and coordinate development with the water districts in order to ensure that new development does not outstrip the capacity of the district to serve their service areas. While public water is an appropriate public facility in this Plan designation, it is not essential for smaller-scale development.

Rural fire protection districts are present in many of the areas in this Plan designation. This is often a desired rural service and is appropriate in this Plan designation, but is not a prerequisite.

Community sewage systems are not appropriate in this Plan designation.

Rural Agricultural Lands

These lands are reserved for agricultural use. Generally, residences are allowed only in conjunction with farm use. Some parcels in this Plan designation are served by community water systems but generally water supply is on an individual basis. Because parcel size and use are controlled by the Exclusive Farm Use (EFU) zoning district, it is not appropriate to extend community water to parcels in this Plan designation since it would lead to pressure to further develop land for residences. The primary function of Rural Agricultural Lands is for Agricultural use. Any extension of public will only be to support a development in conjunction with resource use and will not be the basis for future conversion to non-resource use.

As with the Rural Lands Plan designation, public fire protection may be present here, and is appropriate, but is not necessary for development.

Community sewage systems are not appropriate in this Plan designation.

Forest Lands

The primary purpose of this Plan designation is to conserve lands for commercial timber production, wildlife habitat, and recreation. Generally, residences are in conjunction with a forest use, but in many areas with this designation residences on substandard parcels are common. Therefore, community water systems are often already serving these dwellings. As with agricultural lands, the parcel size and use are controlled by the zoning. The large minimum parcel sizes and distances of lines will limit extensions and the Plan designation removes the ability to develop land just for residential purposes. Any extension of public water will only be to support a development in conjunction with a resource use and will not be the basis for future conversion to non-resource use.

Public fire protection may be present here, and is appropriate as so many residences currently exist. It is not necessary, however, for development and is not encouraged in sparsely settled forest areas.

Community sewage systems are not appropriate in this Plan designation.

Conservation Other Resources and Natural

These Plan designations are for important resource areas and for recreation areas. For areas such as the estuary and wetlands, no public water, sewer or fire protection is appropriate. For developed recreational areas, these facilities are appropriate but may not be necessary.

GOALS, OBJECTIVES AND POLICIES

PUBLIC FACILITIES GOALS

Goal 1: Urbanizable Areas – To provide public facilities in accordance with coordinate land use and transportation systems in a manner which encourages the orderly conversion of land from rural to urban use.

Goal 2: Outside of Urbanizable Areas:

a. To support the provision of needed public facilities for rural areas at levels appropriate for rural densities;
b. To discourage the development of inappropriate public facilities on resource lands which would result in pressure for conversion to more intense use.

GENERAL PUBLIC FACILITIES POLICIES

Policy A: Clatsop County recognizes the level of public facilities and services described in the section regarding "Appropriate Levels of Public Facilities" above, as that which is reasonable and appropriate for development in different Plan designations in the County. Development of facilities and services in excess of those levels and types shall not be approved by the County.

Policy B: The level of urban services provided within urban growth boundaries shall be determined by policies mutually adopted by the Board of County Commissioners and the affected city.

Policy C: Development permits (excluding land divisions) shall be allowed only if the public facilities (water and sanitation, septic feasibility or sewage capacity) are capable of supporting increased loads. The County shall consider prior subdivision approvals within the facilities service area when reviewing the

capabilities of districts.

Policy D: The creation of new community water systems and fire districts shall be discouraged in those areas designated Forest Lands and Natural.

Policy E: Water and sewer districts shall be encouraged to cooperate with the County in changing district boundaries. Before a public facility (i.e. water, sewer) extends its service area, it should demonstrate the ability to service vacant lands currently serviced by that public facility and that the extension complies with OAR 660-011.

Policy F: All new planned developments and subdivisions shall install underground utilities. Efforts should be made to place existing overhead lines underground in already developed areas.

Policy G: The County should work with utility owners and property owners to identify and develop public green belt paths and trails within utility rights-of-way.

Policy H: All utility lines and facilities should be located on or adjacent to existing public or private rights-of-way to avoid dividing existing farm units.

Policy I: When a Comprehensive Plan or Zone Change or both are required that would result in a higher residential density, commercial or industrial development it shall be demonstrated and findings made that the appropriate public facilities and services (especially water, sanitation (septic feasibility or sewage) and schools) are available to the area being changed without adversely impacting the remainder of the public facility or utility service area.

Policy J: The county should relocate critical public facilities outside of tsunami and land slide zones. Where feasible, new and expanded public facilities should be designed and constructed to withstand a Cascadia event earthquake and outside of tsunami hazard areas.

Policy K: Clatsop County should consider and address tsunami risks and evacuation routes and signage when planning, developing, improving, or replacing public facilities and services.

Policy L: Clatsop County should update public facility plans to plan, fund, and locate future facilities outside of the tsunami inundation zone, whenever possible.

DIKING AND DRAINAGE DISTRICT POLICIES

Policy A: Clatsop County should assist diking districts in reorganization as well as providing assistance in obtaining funds for improvement of the diking district.

~~**Policy B:** The county should work with the property owners as well as the appropriate state, federal, and local governments to clarify roles and responsibilities of each party in the event of diking failure.~~

WATER SUPPLY SYSTEM POLICIES

Policy A: Development of a subdivision, planned development, or the building of individual residences, commercial or industrial structures requiring water or subsurface sewage disposal shall require proof that a year-round source of potable water is available.

Policy B: If water supply for building permits is from a surface source, including a spring, proof of water rights from the State must be presented.

Policy C: When water supply to a subdivision or planned development is to be from a source other than a community water system, the developer shall provide evidence of a proven source of supply and guarantee availability of water to all parcels of land within the proposed development.

Policy D: Clatsop County shall encourage existing community water supply systems to be improved and maintained at a level sufficient to:

a. Provide adequate fire flow and storage capacity to meet the service area requirements,
b. Meet the anticipated long-range maximum daily use and emergency needs of the service area, and
c. Provide adequate pressure to ensure the efficient operation of the water distribution system.

Policy E: Clatsop County shall cooperate with the various cities in examining the feasibility of developing some type of regional water system to provide municipal and community water.

Policy F: Clatsop County should work with water systems to plan to ensure adequate water, services and funding exist to serve new development over time.

Policy G: In conjunction with DEQ and Water Resources Department (WRD) or appropriate agencies or consulting firm, complete a water assessment study in Clatsop Plains to analyze groundwater quality and quantity and prepare projections for future use.

WASTE DISPOSAL POLICIES

Policy A: Clatsop County considers sewer services only appropriate for urbanizable lands and RSAs. The intensity of land use facilities by provisions of sewer is

not appropriate for Rural areas. Clatsop County may permit the creation or extension of sewer services outside UGBs and RSAs in the event of a health hazard or water pollution problem identified by DEQ.

Policy A: Clatsop County shall cooperate with cities in developing a phased growth plan to guide the provision of municipal services to urbanizable areas.

Policy B: Clatsop County shall encourage alternative methods of sewage disposal when such methods are economically, legally, and environmentally feasible.

Policy C: Clatsop County should consider the use of solid waste to generate electricity.

Policy D: Clatsop County shall continue to cooperate with the various cities in the establishment of a regional landfill site.

Policy E: The County should investigate a suitable human waste disposal site within the County.

OTHER PUBLIC FACILITIES POLICIES

Policy A: Clatsop County shall rely upon the various school districts in the County for the provision of public education.)

Policy B: Clatsop County shall notify the appropriate school district of all subdivision, planned developments and mobile home park applications.

Policy C: Clatsop County shall continue to cooperate with all appropriate governmental jurisdictions, agencies, and special districts (including water, sewer, roads, etc.) in developing a coordinate approach for the planning and delivery of health and social services.

Policy D: Clatsop County shall continue to encourage the upgrading of the level and quality of the County Sheriff's Department as funds become available.

Policy E: Clatsop County should work with local residents as well as with the rural fire protection districts in examining various methods to improve fire protection. One method which could be used is to require subdivisions and planned developments to dedicate a site, funds, equipment, and/or construction materials for a fire station.

Policy F: Rural fire protection districts shall be encouraged to expand service boundaries to include lands designated Rural Lands.

Policy G: The County should encourage new innovation and concepts to conserve and/or reduce water usage including, but not limited to grey water recycling, as permitted under OAR 340-053, which was approved in Oregon in 2012.

Policy H: The County should review its minimum water flow requirements to ensure that its requirements are consistent with actual usage patterns. Required water flow should be based on the number of fixtures and/or house size.

IMPLEMENTING OREGON ADMINISTRATIVE RULES (OAR):

OAR 660-011 – Public Facilities Planning

COORDINATING AGENCIES:

Oregon Department of Environmental Quality (DEQ)
Oregon Health Authority (OHA)
Oregon Water Resources Department
Oregon Department of Land Conservation and Development (DLCD)

BACKGROUND REPORTS AND SUPPORTING DATA:

Climate Change Framework, Department of Land Conservation and Development, 2021
Future Climate Projections Clatsop County, Oregon Climate Change Research Institute, February 2020

Clatsop County
Community Development – Planning

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www.co.clatsop.or.us

TO: Clatsop County Planning Commission

FROM: Ian Sisson, Senior Planner

DATE: April 5, 2022

RE: **COMPREHENSIVE PLAN GOAL 12: TRANSPORTATION (DRAFT 03)**

OVERVIEW – STATEWIDE PLANNING GOAL
Statewide Planning Goal 12: Transportation, is *"to provide and encourage a safe, convenient and economic transportation system."*

Goal 12 requires cities and counties to create a transportation system plan that takes into account all modes of transportation, from mass transit, to air, water, rail, highway, bicycle and pedestrian. Transportation plans should support a variety of transportation modes so they can access the jobs, goods, and services available in the different parts of their community. According to the State of Oregon, a well designed transportation plan conserves energy while also minimizing adverse social and economic impacts for disadvantaged areas.

Goal 12 is implemented by the "Transportation Planning Rules" (TPR) which are codified in Oregon Administrative Rules (OAR) 660 Division 12. These rules specify what must be included in local transportation planning efforts, and what must be addressed and included in a transportation system plan. Airport planning rules are codified in OAR 660 Division 13.

CLATSOP COUNTY'S GOAL 12
Clatsop County's Goal 12 Comprehensive Plan element was last updated by Ordinance 15-05, on October 28, 2015, in conjunction with the Clatsop County Transportation System Plan (TSP) and corresponding amendments to the Land and Water Development and Use Ordinance 80-14 (now LAWDUC 20-03).

The Transportation System Plan (TSP) provides a long-term guide for county transportation investments. The plan evaluates the current transportation system and outlines policies and projects that are important to protecting and enhancing the quality of life in Clatsop County. Plan elements can be implemented by the County, private developers, and state or federal agencies.

The goals and policies in Clatsop County's Goal 12 element were derived from the TSP, which was devised with a 20-year horizon ending in 2035. The entirety of Volume 1 of TSP was also adopted, by reference, as part of Goal 12. Volume 2 of the TSP contains backround memoranda, meeting summaries, and technical data, and was not adopted as part of the Comprehensive Plan.

Considering the TSP was updated somewhat recently, the Goal 12 goals and policies do not require significant updates at this time. Almost all of the policies are ongoing priorities which will remain relevant for the foreseeable future. Updates to Goal 12 should generally coincide with updates to the TSP.

BOARD OF COMMISSIONERS WORK SESSION
The Clatsop County Board of Commissioners discussed a first draft of Goal 12 during a work session on December 2, 2021. Draft 01 consisted of the existing Goal 12 text, reformatted. The Board did not indicate any changes that should be made to existing goals or policies, and did not identify any issues that would warrant new goals and/or policies.

TSUNAMI EVACUATION FACILITY IMPROVEMENT PLAN (TEFIP)
A December 27, 2021 memo from Parametrix, the consultant leading the Clatsop County TEFIP project, proposed the following policy additions to Goal 12:

"The County will:

1. Develop multi-use paths that both enhance community livability and serve as tsunami evacuation routes.
2. Coordinate evacuation route and signage planning in conjunction with existing or proposed transportation system plan pedestrian and bicycle route planning efforts.
3. Locate new transportation facilities outside the tsunami inundation zones where feasible.
4. Where feasible design and construct new transportation facilities to withstand a Cascadia event earthquake and be resistant to the associated tsunami."

Recommendation #3 is already included in Goal 12 as Policy 6h; Recommendation #4 is partially addressed by Policy 6i. The new policy recommendations and background information on the TEFIP were included in Goal 12 Draft 02.

JOINT PLANNING COMMISSION / COUNTYWIDE CITIZEN ADVISORY COMMITTEE REVIEW
The joint Planning Commission / Countywide Citizen Advisory Committee (PCCCAC) reviewed Goal 12 Draft 02 during its meeting on February 22, 2022. The PCCCAC recommended the following changes, which have been incorporated into Draft 03:

- Include freight and passenger rail transportation in the "Vision" section;
- Add Policy 1a, requiring rights-of-way to be evaluated for use as evacuation routes when considering requests to vacate rights-of-way;
- Add Policy 3f, encouraging the inclusion of bicycle and pedestrian pathways in subdivisions and other major developments;
- Add Policy 3g, to coordinate with the Oregon Department of Transportation (ODOT) to provice safe bicycle and pedestrian routes along the New Youngs Bay Bridge and the Old Youngs Bay Bridge;
- Edit Policy 5f to include support for connectivity with adjacent counties and states;
- Add Policy 7d, to support alternative vehicle technologies;
- Delete Policy 7i regarding transparency in transportation system investments;
- Edit Policy 8a to include rail and water transportation;
- Edit Policy 8c to apply to all modes of transportation;
- Reorder Goal 9 policies to transistion from largest to smallest agency service area;
- Edit Policy 9b to include the Sunset Empire Transportation District.

ACTION ITEMS:

1) **Review Goal 12: Transportation - Draft 03** as revised at the joint Planning Commission / Countywide Citizen Advisory Committee meeting of February 22, 2022.
2) Determine what, if any, additional revisions should be made to Goal 12.
3) Accept a motion and a second to recommend the Board of Commissioners approve Goal 12 as revised.

BACKGROUND MATERIALS (attached):

- Goal 12 – Draft 03
- Statewide Planning Goal 12
- Clatsop County Goal 12

ADDITIONAL BACKGROUND MATERIALS (linked):

- Clatsop County Transportation System Plan
- Clatsop County Tsunami Evacuation Facility Improvement Plan
- OAR 660, Division 12 – Transportation Planning
- OAR 660, Division 13 – Airport Planning

STATEWIDE PLANNING GOAL 12:

To provide and encourage a safe, convenient and economic transportation system.

CLATSOP COUNTY GOAL 12:

To provide and encourage a safe, convenient and economic transportation system.

OVERVIEW

The formulation of a transportation vision, goals and policies represent an important component of the Transportation Systems Plan (TSP) process. The TSP was a collaborative effort among various public agencies, key stakeholders, and the community. The process of identifying the vision, goals, and policies helps describe the transportation system that best fits Clatsop County's values and guides how the TSP will be developed and implemented. Eight goals were developed early in the TSP process, which were used to help prioritize transportation solutions. A ninth overarching goal was added toward the end of the process to reflect the importance of fostering a transportation system that is resilient to natural disasters.

Transportation System Plan
Volume 1 of the TSP is adopted by reference as part of Goal 12 of the Comprehensive Plan. Volume 1 contains the TSP vision and goals, trends, financial plan, standards, and outcomes.

Volume 2, which is not adopted as part of the Comprehensive Plan, represents an iterative process in the development of the TSP; it includes all background memoranda, meeting summaries, and technical data. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

Tsunami Evacuation Facility Improvement Plan (TEFIP)
The Clatsop County Tsunami Evacuation Facility Improvement Plan (TEFIP) is anticipated to be adopted in the spring of 2022. The TEFIP addresses improvements to tsunami evacuation routes, focusing on routes that serve multiple purposes in addition to evacuation, such as walking or cycling trails. The TEFIP seeks to prioritize solutions that benefit the community every day, like investing in recreational trails that double as evacuation routes; increase community resilience and emergency preparedness; facilitate easier evacuation in the event of a major earthquake and tsunami; and identify strategies to make best use of limited public resources.

VISION

All transportation modes flow smoothly and safely to and throughout the county, meeting the needs of residents, businesses, visitors, and people of all physical and financial conditions. Existing transportation assets are protected and complemented with multi-modal improvements, including freight and passenger rail transportation as an alternative to automobiles. Evacuations and emergency response preceding and following natural disasters are managed effectively.

GOALS AND POLICIES

GOAL 1: Foster resilient natural hazard evacuation and lifeline route systems (overarching goal)

- **Policy 1a:** The County will evaluate existing platted roads or rights of way for use as alternative evacuation pathways prior to any consideration of vacations.

GOAL 2: Provide for efficient motor vehicle travel to and through the county.

- **Policy 2a:** Develop a program to systematically implement improvements that enhance mobility at designated high-priority locations.
- **Policy 2b:** Adopt a standard for mobility to help maintain a minimum level of motor vehicle travel efficiency and by which land use proposals can be evaluated. State and City mobility standards will be supported on facilities under the respective jurisdiction.
- **Policy 2c:** Identify opportunities to reduce the use of state highways for local trips.
- **Policy 2d:** Limit access points on highways and arterials. Support consolidated and shared access points.

GOAL 3: Increase the convenience and availability of pedestrian and bicycle modes.

- **Policy 3a:** Identify improvements (e.g., street lighting, bike parking) that complement pedestrian and bicycle facilities such as sidewalks and bike lanes and that encourage more use of these facilities.
- **Policy 3b:** Improve walking and biking connections to county amenities.
- **Policy 3c:** Enhance way finding signage for those walking and biking, directing them to bus stops, key routes and destinations, and tsunami evacuation routes.
- **Policy 3d:** Promote walking, bicycling, and sharing the road through public information and participation.
- **Policy 3e:** Identify necessary changes to the land development code to improve connectivity between compatible land uses for pedestrian and bicycle trips.
- **Policy 3f:** Encourage inclusion of bicycle and pedestrian pathways in all new subdivisions or major developments.
- **Policy 3g:** Work with Oregon Department of Transportation (ODOT) to provide a safe bicycle and pedestrian pathway along the New Youngs Bay Bridge and the Old Youngs Bay Bridge.

GOAL 4: Coordinate countywide transit services, facilities, and improvements with local jurisdictions that encourage a higher level of ridership.

- **Policy 4a:** Assist in identifying potential locations for designated park-and-ride lots.
- **Policy 4b:** Assist in identifying areas that support additional transit services, and coordinate with transit providers to improve the coverage, quality and frequency of services
- **Policy 4c:** Assist in identifying improvements (e.g., sidewalk and bicycle connections, shelters, benches) that complement transit facilities such as bus stops and that encourage higher usage of transit.

GOAL 5: Provide an equitable, balanced and connected multi-modal transportation system.

- **Policy 5a:** Identify new or improved transportation connections to enhance system efficiency.
- **Policy 5b:** Ensure that existing and planned pedestrian throughways are clear of obstacles and obstructions (e.g., utility poles).
- **Policy 5c:** Support connectivity between the various communities in the county and also between adjacent counties' and states' transportation systems.

GOAL 6: Enhance the health and safety of residents.

- **Policy 6a:** Identify improvements needed along natural hazard evacuation and Seismic Lifeline Routes.
- **Policy 6b:** Give priority to multiuse paths that enhance community livability and serve as tsunami evacuation routes.
- **Policy 6c:** Identify improvements to address high collision locations and improve safety for walking, biking and driving trips in the county.
- **Policy 6d:** Enhance existing highway crossings for walking and biking users.
- **Policy 6e:** Identify deficient locations in the county where enhanced street crossings for walking and biking users are needed.
- **Policy 6f:** Improve the visibility of transportation users in constrained areas, such as on hills and blind curves.
- **Policy 6g:** Support programs that encourage walking and bicycling, and educate regarding good traffic behavior and consideration for all users.
- **Policy 6h:** Locate new transportation facilities outside tsunami inundation zones where feasible.
- **Policy 6i:** Where financially feasible, design and construct new transportation facilities to withstand a Cascadia event earthquake and be resistant to the associated tsunami.
- **Policy 6j:** Develop multi-use paths that both enhance community livability and serve as tsunami evacuation routes.
- **Policy 6k:** Coordinate evacuation route and signage planning in conjunction with existing or proposed transportation system plan pedestrian and bicycle route planning efforts.

GOAL 7: Foster a sustainable transportation system.

- **Policy 7a:** Develop and support reasonable alternative mobility targets for motor

vehicles that align with economic and physical limitations on State highways and County roads where necessary.

- **Policy 7b:** Minimize impacts to the scenic, natural and cultural resources in the county.
- **Policy 7c:** Support alternative vehicle types by identifying potential electric vehicle plug-in stations and developing implementing code provisions.
- **Policy 7d:** Support alternative vehicles including hydrogen-powered vehicles and other emerging technologies.
- **Policy 7e:** Identify areas where alternative land use types would significantly shorten trip lengths or reduce the need for motor vehicle travel within the county.
- **Policy 7f:** Maintain the existing transportation system assets to preserve their intended function and maintain their useful life.
- **Policy 7g:** Identify opportunities to improve travel reliability and safety with system management solutions.
- **Policy 7h:** Identify stable and diverse revenue sources for transportation investments to meet the needs of the county, including new and creative funding sources to leverage high priority transportation projects.
- **Policy 7i:** Consider costs and benefits when identifying project solutions and prioritizing public investments.
- **Policy 7j:** Utilize transparency when determining transportation system investments.

GOAL 8: Ensure the transportation system supports a prosperous and competitive economy.

- **Policy 8a:** Encourage improvements to the freight system efficiency, access, capacity and reliability. Consideration should be given to transportation systems such as rail and water.
- **Policy 8b:** Support transportation improvements that will enhance access to employment.
- **Policy 8c:** Support increases in the distribution of travel information to maximize the reliability and effectiveness of all modes of transportation.
- **Policy 8d:** Identify and improve local Lifeline Routes to increase economic resilience after a natural hazard disaster.

GOAL 9: Coordinate with local and state agencies and transportation plans.

- **Policy 9a:** Coordinate with the Oregon Transportation Plan and associated modal plans.
- **Policy 9b:** Work with the North Coast Regional Solutions Center and the Sunset Empire Transportation District to promote projects that improve regional linkages.
- **Policy 9c:** Coordinate regional project development and implementation with local jurisdictions (e.g., evacuation routes, countywide transit, and jurisdictional transfer of roadways).
- **Policy 9d:** Coordinate with the Clatsop County Parks and Recreation Master Plan regarding trail guidelines and connections between parks, recreation areas, and trails.
- **Policy 9e:** Coordinate evacuation route and signage planning with existing or proposed pedestrian and bicycle route planning efforts.

IMPLEMENTING OREGON ADMINISTRATIVE RULES (OAR):
660-012 – Transportation Planning
660-034 – Airport Planning

COORDINATING STATE AGENCIES:
Oregon Department of Land Conservation and Development (DLCD)
Oregon Department of Transportation (ODOT)

BACKGROUND REPORTS AND SUPPORTING DATA:
Clatsop County Transportation System Plan, 2015: Volume 1, Volume 2
ODOT Strategic Action Plan, 2021

Oregon's Statewide Planning Goals & Guidelines

GOAL 12: TRANSPORTATION

OAR 660-015-0000(12)

To provide and encourage a safe, convenient and economic transportation system.

A transportation plan shall (1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian; (2) be based upon an inventory of local, regional and state transportation needs; (3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes; (4) avoid principal reliance upon any one mode of transportation; (5) minimize adverse social, economic and environmental impacts and costs; (6) conserve energy; (7) meet the needs of the transportation disadvantaged by improving transportation services; (8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and (9) conform with local and regional comprehensive land use plans. Each plan shall include a provision for transportation as a key facility.

Transportation -- refers to the movement of people and goods.

Transportation Facility -- refers to any physical facility that moves or assists in the movement of people and goods excluding electricity, sewage and water.

Transportation System -- refers to one or more transportation facilities that are planned, developed, operated and maintained in a coordinated manner to supply continuity of movement between modes, and within and between geographic and jurisdictional areas.

Mass Transit -- refers to any form of passenger transportation which carries members of the public on a regular and continuing basis.

Transportation Disadvantaged -- refers to those individuals who have difficulty in obtaining transportation because of their age, income, physical or mental disability.

GUIDELINES

A. PLANNING

1. All current area-wide transportation studies and plans should be revised in coordination with local and regional comprehensive plans and submitted to local and regional agencies for review and approval.

2. Transportation systems, to the fullest extent possible, should be planned to utilize existing facilities and rights-of-way within the state provided that such use is not inconsistent with the environmental, energy, land-use, economic or social policies of the state.

3. No major transportation facility should be planned or developed outside urban boundaries on Class 1 and II agricultural land, as defined by the U.S. Soil Conservation Service unless no feasible alternative exists.

4. Major transportation facilities should avoid dividing existing economic farm units and urban social units unless no feasible alternative exists.

5. Population densities and peak hour travel patterns of existing and planned developments should be considered in the choice of transportation modes for trips taken by persons. While high density developments with concentrated trip origins and destinations should be designed to be principally served by mass transit,

low-density developments with dispersed origins and destinations should be principally served by the auto.

6. Plans providing for a transportation system should consider as a major determinant the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.

B. IMPLEMENTATION

1. The number and location of major transportation facilities should conform to applicable state or local land use plans and policies designed to direct urban expansion to areas identified as necessary and suitable for urban development. The planning and development of transportation facilities in rural areas should discourage urban growth while providing transportation service necessary to sustain rural and recreational uses in those areas so designated in the comprehensive plan.

2. Plans for new or for the improvement of major transportation facilities should identify the positive and negative impacts on: (1) local land use patterns, (2) environmental quality, (3) energy use and resources, (4) existing transportation systems and (5) fiscal resources in a manner sufficient to enable local governments to rationally consider the issues posed by the construction and operation of such facilities.

3. Lands adjacent to major mass transit stations, freeway interchanges, and other major air, land and water terminals should be managed and controlled so as to be consistent with and supportive of the land use and development patterns identified in the comprehensive plan of the jurisdiction within which the facilities are located.

4. Plans should provide for a detailed management program to assign respective implementation roles and responsibilities to those governmental bodies operating in the planning area and having interests in carrying out the goal.

Comprehensive Plan

Replaces existing Goal 12-Transportation in its entirety

Goal 12 – Transportation

The formulation of a transportation vision, goals and policies represent an important component of the Transportation Systems Plan (TSP) process. The TSP was a collaborative effort among various public agencies, key stakeholders, and the community. The process of identifying the vision, goals, and policies helps describe the transportation system that best fits Clatsop County's values and guides how the TSP will be developed and implemented.

Eight goals were developed early in the TSP process, which were used to help prioritize transportation solutions. A ninth overarching goal was added toward the end of the process to reflect the importance of fostering a transportation system that is resilient to natural disasters.

Volume 1 of the TSP is adopted by reference as part of Goal 12 of the Comprehensive Plan. Volume 1 contains the TSP vision and goals, trends, financial plan, standards, and outcomes. Volume 2, which is not adopted as part of the Comprehensive Plan, represents an iterative process in the development of the TSP; it includes all background memoranda, meeting summaries, and technical data. Refinements to various plan elements occurred throughout the process as new information was obtained. In all cases, the contents of Volume 1 supersede those in Volume 2.

Vision

All transportation modes flow smoothly and safely to and throughout the county, meeting the needs to residents, businesses, visitors, and people of all physical and financial conditions. Existing transportation assets are protected and complemented with multi-modal improvements. Evacuations and emergency response preceding and following natural disasters are managed effectively.

Transportation Goals and Policies

GOAL 1: Foster resilient natural hazard evacuation and lifeline route systems (overarching goal)

GOAL 2: Provide for efficient motor vehicle travel to and through the county.

Policy 2a: Develop a program to systematically implement improvements that enhance mobility at designated high-priority locations.

Policy 2b: Adopt a standard for mobility to help maintain a minimum level of motor vehicle travel efficiency and by which land use proposals can be evaluated. State and City mobility standards will be supported on facilities under the respective jurisdiction.

Policy 2c: Identify opportunities to reduce the use of state highways for local trips.

Policy 2d: Limit access points on highways and arterials. Support consolidated and shared access points.

GOAL 3: Increase the convenience and availability of pedestrian and bicycle modes.

Policy 3a: Identify improvements (e.g., street lighting, bike parking) that complement pedestrian and bicycle facilities such as sidewalks and bike lanes and that encourage more use of these facilities.

Policy 3b: Improve walking and biking connections to county amenities.

Policy 3c: Enhance way finding signage for those walking and biking, directing them to bus stops, key routes and destinations, and tsunami evacuation routes.

Policy 3d: Promote walking, bicycling, and sharing the road through public information and participation.

Policy 3e: Identify necessary changes to the land development code to improve connectivity between compatible land uses for pedestrian and bicycle trips.

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Policy 4a: Assist in identifying potential locations for designated park-and-ride lots.

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GOAL 5: Provide an equitable, balanced and connected multi-modal transportation system.

Policy 5a: Identify new or improved transportation connections to enhance system efficiency.

Policy 5b: Ensure that existing and planned pedestrian throughways are clear of obstacles and obstructions (e.g., utility poles).

Policy 5c: Support connectivity between the various communities in the county.

GOAL 6: Enhance the health and safety of residents.

Policy 6a: Identify improvements needed along natural hazard evacuation and Seismic Lifeline Routes.

Policy 6b: Give priority to multiuse paths that enhance community livability and serve as tsunami evacuation routes.

Policy 6c: Identify improvements to address high collision locations and improve safety for walking, biking and driving trips in the county.

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Policy 6f: Improve the visibility of transportation users in constrained areas, such as on hills and blind curves.

Policy 6g: Support programs that encourage walking and bicycling, and educate regarding good traffic behavior and consideration for all users.

Policy 6h: Locate new transportation facilities outside tsunami inundation zones where feasible.

Policy 6i: Where financially feasible, design and construct new transportation facilities to withstand a Cascadia event earthquake.

GOAL 7: Foster a sustainable transportation system.

Policy 7a: Develop and support reasonable alternative mobility targets for motor vehicles that align with economic and physical limitations on State highways and County roads where necessary.

Policy 7b: Minimize impacts to the scenic, natural and cultural resources in the county.

Policy 7c: Support alternative vehicle types by identifying potential electric vehicle plug-in stations and developing implementing code provisions.

Policy 7d: Identify areas where alternative land use types would significantly shorten trip lengths or reduce the need for motor vehicle travel within the county.

Policy 7e: Maintain the existing transportation system assets to preserve their intended function and maintain their useful life.

Policy 7f: Identify opportunities to improve travel reliability and safety with system management solutions.

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Policy 8a: Encourage improvements to the freight system efficiency, access, capacity and reliability.

Policy 8b: Support transportation improvements that will enhance access to employment.

Policy 8c: Support increases in the distribution of travel information to maximize the reliability and effectiveness of highways.

Policy 8d: Identify and improve local Lifeline Routes to increase economic resilience after a local natural hazard disaster.

GOAL 9: Coordinate with local and state agencies and transportation plans.

Policy 9a: Work with the North Coast Regional Solutions Center to promote projects that improve regional linkages.

Policy 9b: Coordinate with the Clatsop County Parks and Recreation Master Plan regarding trail guidelines and connections between parks, recreation areas, and trails.

Policy 9c: Coordinate with the Oregon Transportation Plan and associated modal plans.

Policy 9d: Coordinate regional project development and implementation with local jurisdictions (e.g., evacuation routes, countywide transit, and jurisdictional transfer of roadways).

Policy 9e: Coordinate evacuation route and signage planning with existing or proposed pedestrian and bicycle route planning efforts.

Clatsop County
Community Development – Planning

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TO: Clatsop County Planning Commission Members

FROM: Gail Henrikson, Community Development Director

DATE: February 28, 2022

RE: **GOAL 13 – DRAFT 02: ENERGY CONSERVATION**

STATEWIDE PLANNING GOAL 13

Land use decisions can have a direct effect on the energy a community consumes. For example, high-density uses along major streets improve the efficiency of public transportation systems, make it easier to walk or bike to a variety of locations, and thereby reduce gasoline consumption. Statewide Planning Goal 13 requires local governments to consider the effects of its comprehensive planning decision on energy consumption. The goal also directs cities and counties to have systems and incentives in place for recycling programs.

CLATSOP COUNTY GOAL 13

The Clatsop County Goal 5 Resource Inventory directs readers to Goal 13 – Energy Conservation, for a list of energy sources. When Goal 13 was originally adopted in 1980, the following energy sources were identified in Clatsop County:

- **Hydroelectric:** Supplied primarily by the Bonneville Power Administration. Small quantities of power are also distributed by the Western Oregon Electric Co-op, Tillamook Public Utilities District, and the Clatskanie Public Utilities District.
- **Natural Gas:** Supplied by Northwest Natural since 1965.
- **Oil:** Oil products are refined in the Puget Sound area and piped into the state via the Olympic pipeline.
- **Coal:** Supplied to the state via rail and truck.
- **Wood:** It was anticipated that wood slash and mill wastes, in combination with municipal wastes, would be in demand as an energy source, as well as for gasohol and wood pellets. Wood was predicted to "easily provide energy for perhaps one-third to a half of the future population" of Clatsop County.
- **Nuclear Power:** A plant siting study in 1975 identified a 400-acre site in Brownsmead for a possible nuclear power plant.
- **Solar:** The use of large-scale solar farms was predicted to occur by 2000.
- **Wind:** Generation of power by wind was not expected to be developed in the near future due to the lack of technology to store the power. A 1983 ODOE study identified six sites in Clatsop County for possible wind generation projects:

  - Clatsop Spit
  - Columbia River Jetty
  - Fort Stevens
  - Astoria Weather Bureau
  - Astoria WBAB (Port of Astoria Airport)
  - Wickiup Ridge
- **Biomass:** The background report states that many "technical and social improvements are needed to reduce air pollution problems, problems with collection and handling, and slash burning practices. If some barriers are removed, it can be expected that full utilization of the energy available through biomass could be accomplished within the next twenty years."
- **Tides and Waves:** The study concluded that while enough energy might be harnessed to be important to places like islands, there would not be enough energy trapped to operates cities under the technology present at the time.

There are no Oregon Administrative Rules (OARs) that implement Goal 13.

BOARD DISCUSSION – OCTOBER 20, 2021
The Board of Commissioners reviewed Goal 13 – Draft 01 at a work session held October 20, 2021. A summary of the Board member comments is below.

- Focus on actions that the County can take with its own facilities and fleet vehicles.
- Need to balance habitat preservation goals (EX: marbled murrelet) with alternative energy technologies such as wind turbines and where those facilities are sited.
- As technology increases, alternatives may become more viable. For example, wind turbines used to have a 50-year payment recapture period, but the life of the turbine was only 35 years. Also, lithium batteries in electric cars may last 10 years, but may cause 15 years' worth of environmental impacts.
- Infrastructure is not in place to support fleet conversion to electric.
- Nuclear power should still be considered as an option as there have been safety advances. It has been used by the U.S. Navy for 50 years.
- Have to consider *all* alternative energy sources.
- Are the components in lithium batteries harvested in a conflict-free environment?
- Complex adaptive interactive systems – need to consider all the costs and all the benefits.
- Need to have complete and valid data. The current draft does not provide a complete picture.
- The Board cannot make sound policy decisions without validated information from trusted partners.

The Planning Commission and County Citizen Advisory Committee members reviewed Goal 13 at their November 23 and January 7 meetings. Amendments approved at those

meetings have been incorporated into Draft 02.

The Planning Commission was scheduled to review this item at its February 8, 2022 meeting. However, due to a lack of quorum, the item was continued to March 8, 2022.

ACTION ITEMS:

1) **Review Goal 13 - Draft 02: Energy Conservation** as revised at the joint Planning Commission / Countywide Citizen Advisory Committee meetings of November 23, 2021 and January 7, 2022**.**
2) Review discussion from the October 20, 2021, Board of Commissioners work session to determine what, if any, additional revisions should be made to Goal 13.
3) Accept a motion and second to recommend the Board of Commissioners approve revisions to Goal 13, including any recommended amendments to the goal.

BACKGROUND MATERIALS PROVIDED IN DECEMBER 28, 2021, AGENDA PACKAGE:

- Goal 13 – Draft 02: Energy Conservation

Additional reference materials for those interested in further research and technical information:

- Goal 13 – Draft 01: Energy Conservation, including revisions made November 23, 2021 and January 7, 2022

STATEWIDE PLANNING GOAL 13:

To conserve energy.

Land use decisions can have a direct effect on the energy a community consumes. For example, high-density uses along major streets improve the efficiency of public transportation systems, make it easier to walk or bike to a variety of locations, and thereby reduce gasoline consumption.

Goal 13: Energy Conservation, requires local governments to consider the effects of its comprehensive planning decisions on energy consumption. Goal 13 encourages communities to look within existing urban neighborhoods for areas of potential redevelopment before looking to expand, and to "recycle and re-use vacant land." In urban settings, this is often referred to as “in-fill development.” The goal also directs cities and counties to have systems and incentives in place for recycling programs.

At the time the goal was enacted, Oregonians were particularly concerned by development of new homes that blocked neighbors' sunlight, which can have impacts on passive heating and availability of natural light. These concerns are expressed in the goal language.

Today, concerns about renewable energy sources are seen through a different lens. Innovation in the areas of solar and wind energy have made them increasingly popular in Oregon. Concern about climate change has resulted in an increase in public and private interest in and development of alternative energy sources. Goal 13 was not written to govern or direct the production of energy, but its conservation.

CLATSOP COUNTY GOAL 13:

To conserve energy, reduce waste and increase self-sufficiency.

The longstanding energy conservation policies for Clatsop County, since at least 1980, have focused on renewable energy, minimizing energy consumption, and encouraging recycling and other efficiencies.

The Clatsop County Goal 5 Resource Inventory directs readers to Goal 13 – Energy Conservation, for a list of energy sources. When Goal 13 was originally adopted in 1980, the following energy sources were identified in Clatsop County:

- **Hydroelectric:** Supplied primarily by the Bonneville Power Administration. Small quantities of power are also distributed by the Western Oregon Electric Co-op, Tillamook Public Utilities District, and the Clatskanie Public Utilities District.
- **Natural Gas:** Supplied by Northwest Natural since 1965.
- **Oil:** Oil products are refined in the Puget Sound area and piped into the state via the Olympic pipeline.
- **Coal:** Supplied to the state via rail and truck.
- **Wood:** It was anticipated that wood slash and mill wastes, in combination with municipal wastes, would be in demand as an energy source, as well as for gasohol and wood pellets. Wood was predicted to "easily provide energy for perhaps one-third to a half of the future population" of Clatsop County.
- **Nuclear Power:** A plant siting study in 1975 identified a 400-acre site in Brownsmead for a possible nuclear power plant. The citizen advisory committees have recommended that this language be removed from the Clatsop County Comprehensive Plan.
- **Solar:** The use of large-scale solar farms was predicted to occur by 2000.
- **Wind:** Generation of power by wind was not expected to be developed in the near future due to the lack of technology to store the power. A 1983 ODOE study identified six sites in Clatsop County for possible wind generation projects:
  - Clatsop Spit
  - Columbia River Jetty
  - Fort Stevens
  - Astoria Weather Bureau
  - Astoria WBAB (Port of Astoria Airport)
  - Wickiup Ridge
- **Biomass:** The background report states that many "technical and social improvements are needed to reduce air pollution problems, problems with collection and handling, and slash burning practices. If some barriers are removed, it can be expected that full utilization of the energy available through biomass could be accomplished within the next twenty years."
- **Tides and Waves:** The study concluded that while enough energy might be harnessed to be important to places like islands, there would not be enough energy trapped to operates cities under the technology present at the time.

ENFORCEABLE POLICIES

Because Clatsop County is a partnering jurisdiction in the Oregon Coastal Zone Management Program, all proposed state and federal projects must be consistent with the County's comprehensive plan and implementing ordinances. In order to be considered "enforceable", policies, standards and regulations ***must***:

- Include mandatory language such as "will", "must" or "shall"
- Contain a clear standard
- Not be pre-empted by federal law
- Not regulate federal agencies, lands, or waters
- Not discriminate against a particular coastal user or federal agency
- Not hinder the national interest objectives of the Coastal Zone Management Act
- Not incorporate other policies or requirements by reference

Because many energy projects are permitted through either federal and/or state agencies, it is imperative that the policies in Clatsop County's Comprehensive Plan be considered "enforceable" under the requirements of the Coastal Zone Management Act. Drafting and adopting enforceable policies ensures that large-scale energy projects are consistent with the values and goals identified by community members and that those voices will be represented at the planning table.

RENEWABLE ENERGY SITING

Clatsop County residents rely on dependable, affordable energy to meet their basic needs. Finding suitable locations for energy development can be challenging. Environmental impacts need to be considered. Some energy projects need large expanses of land, which can impact farming, forestry, and wildlife habitat. Cost is also an issue. The further an energy project is from transmission lines, the more expensive it is to build. The Oregon Department of Energy identifies the following renewable energy resources within the state:

- Solar
- Wind
- Hydropower
- Bioenergy
- Geothermal
- Marine
- Renewable Fuels
- Hydrogen

OAR 660-033-0130(37) and (38) provide standards for wind and solar energy siting on

agricultural land. The rules are intended to direct energy development to lands that have limited value to wildlife and farming. During discussions with the citizen advisory committees, several potential wind and solar generation sites were considered, including the Clatsop Plains, Clatsop Ridge and Camp Rilea.

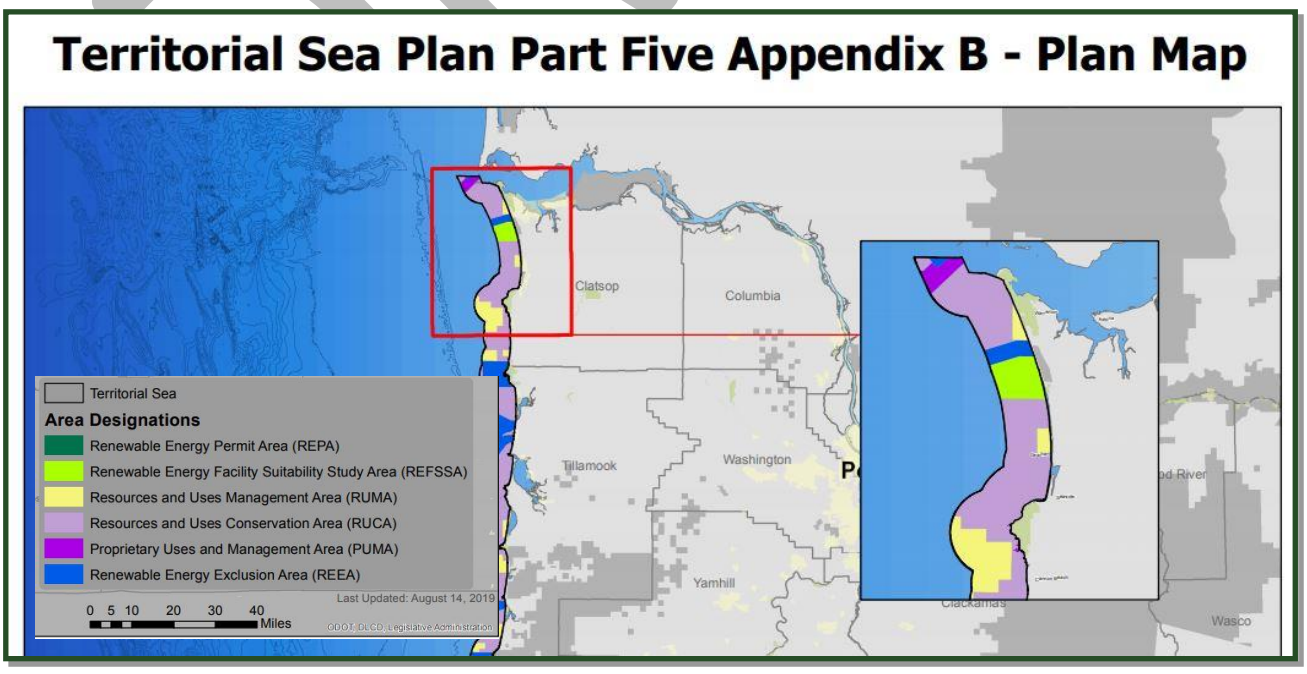
OCEAN ENERGY

In Oregon, ocean energy is considered a renewable energy resource with the potential to reduce the human need of fossil fuels, such as coal or gas. Ocean energy facilities may promote the use of energy from wind, wave, current, or thermal, which may reduce the environmental impact of fossil fuels.

Part Five of the Oregon Territorial Sea Plan describes the process for making decisions about the development of renewable energy facilities within Oregon's Territorial Sea. The plan specifies the areas where new development may occur. The requirements of Part Five are intended to protect areas of important marine resources from the potential adverse effects of renewable energy facilities. The requirements address all phases of development including siting, development, operation, and removal from service. The Plan also identifies locations for development that may reduce damaging impacts to coastal communities and existing ocean resource users. If new facilities are developed in a responsible and appropriate manner, and in agreement with state and federal requirements, renewable ocean energy may help preserve Oregon's natural resources and enhance quality of life.

OREGON RENEWABLE ENERGY SITING ASSESSMENT (ORESA)

In 2019, the Oregon Department of Energy (ODOE) partnered with DLCD and the Oregon Institute for Natural Resources (INR) on a grant application to the U.S. Department of Defense for the study and assessment of renewable energy and transmission development in Oregon.



Continued renewable energy development is anticipated in the coming decades, which will require analysis in order to balance natural resource, land use, environmental impacts, noise concerns, and cultural issues through processes at all levels of government.

DLCD, along with ODOE, will be identify high potential renewable energy production areas that are feasible for development and that overlap with military training and operations areas. These agencies will also review and assess the current development and siting procedures of local, state, and federal governments. Upon conclusion, a renewable energy siting mapping tool will be developed by INR with information gathered over the course of the project.

BONNEVILLE POWER ADMINISTRATION

The Bonneville Power Administration (BPA), was created in 1937 as a temporary agency with a limited mission: to market and distribute electricity from the Bonneville Dam on the Columbia River. Throughout the 1940s through the 1960s, Congress authorized BPA to oversee and deliver power from more federal dams on the Columbia River and its tributaries.

Today, BPA provides about one-third of the power consumed in the Pacific Northwest. This power is supplied by 31 hydroelectric dams administered by BPA. In Clatsop County, almost all power is supplied by BPA through Pacific Power . Small amounts of electricity in the County are sold and distributed by the Western Oregon Electric Co-op, the Tillamook Public Utility District, and the Clatskanie Public Utilities District.

Congressional mandates in the 1980s pushed the agency towards energy conservation and the restoration of fish runs that had been decimated by the dams. Today, one of BPA's mandates is to prioritize habitat monitoring and restoration projects throughout the Columbia River.

The BPA is a primary funder for restoration projects in the Columbia River and contracts with the Columbia River Estuary Task Force (CREST) to oversee large-scale restoration projects.

The SAFE-funded (Select Area Fisheries Enhancement) portion of Clatsop County Fisheries is a collaborative program that includes both Washington and Oregon's Departments of Fish and Wildlife and Clatsop County Fisheries. It receives funding from the Bonneville Power Administration as off-sight mitigation for the effects of dams and water withdrawals on the Columbia River and its tributaries.

The program is part of the Northwest Power and Conservation Council's Fish and Wildlife Program. Of the $1.8 million annual SAFE budget, Clatsop County Fisheries receives roughly $400,000 per year.

PUBLIC TRANSPORTATION

The Sunset Empire Transportation District (SETD) operates several public transit bus routes within the County and provides connector service to both Tillamook and Columbia counties. In April 2020, SETD proposed using funding from the Statewide Transportation Improvement Fund

to purchase its first electric bus. However, ongoing worker shortages and capacity restrictions due to the coronavirus pandemic have necessitated revisions to SETD's operating plans. In September 2021, SETD released new schedules that suspended Routes 13, 17, 21 and the Seaside Streetcar.

RECYCLING

Recology operates a recycling program in Clatsop County, providing opportunities to dispose of recyclable materials without placing them in a landfill. However, in recent years, China, one of the major importers of recyclable materials, has ceased allowing many materials from being imported. This has led, in some cases, to more recyclable materials being placed in landfills.

RENEWABLE ENERGY PROJECTS IN CLATSOP COUNTY

Wind Generation

On October 13, 2020, the Clatsop County Planning Commission approved a meteorological testing tower for property located on Nicolai Ridge. The tower, which will be operated by WPD Wind Projects, Inc., will be used to test wind generation potential in the eastern portion of the County in order to determine whether future wind turbine development should occur in that area. The tower, which received building permits at the end of 2020, will be in place for up to one year while testing occurs. If WPD Wind Projects, Inc., determines that there is sufficient wind generation power, new permits and approvals, including approval from the Oregon Department of Energy, would be required.

Solar

While one would not typically associate Clatsop County with solar energy, there are several installations within Clatsop County, per information from the Oregon Department of Energy. In 1999, there were no photovoltaic projects with the county. In 2009 there were four installations. However, by 2019, the last year for which data is available, there were over 40 recorded projects. The majority of these installations are for residential purposes, with some commercial installations scattered throughout Astoria and the coastline. There are no utility-level solar projects within Clatsop County.

Liquified Natural Gas

In the past, two liquified natural gas (LNG) plants have been proposed in Clatsop County—one at Bradwood and one in Hammond. Both plants generated controversy and division throughout the community. Neither plant succeeded in obtaining approvals in Clatsop County. A similar proposal in Coos Bay (Jordan Cove LNG) and a methanol refinery in Kalama, WA, have also recently been denied. Port Westward, in adjacent Columbia County, Oregon, a proposed renewable diesel production facility capable of processing up to 50,000 barrels per day of renewable biomass feedstocks, is currently under review by ODOE.

Ocean Energy Facilities

Marine energy encompasses both wave power – i.e., power from surface waves – and tidal power, which is obtained from the kinetic energy of large bodies of moving water. Oregon's coast has among the best marine energy resources in the world, making it an ideal location for developing marine energy.

While there are no marine energy projects yet in commercial operation in Oregon, two test sites have been approved:

¨ North Energy Test Site (two nautical miles offshore, north of Newport)

¨ South Energy Test Site / PacWave (five nautical miles offshore, between Newport and Waldport)

There is the potential that this technology will be located off the Clatsop Coast in the future. As noted on the map included with in the Territorial Sea Plan, Part 5, there are areas off the coast of Clatsop County that would be eligible for the siting of potential projects. While these facilities would be located offshore, there would be on-shore infrastructure with land use impacts.

FUTURE CONDITIONS

NEW TECHNOLOGIES

Zero Emission Vehicles

Zero Emission Vehicles (ZEVs) such as electric vehicles or hydrogen fuel cell vehicles, drive without emitting greenhouse gases. ZEVs include battery-operated vehicles, electric/hybrid vehicles and hydrogen fuel cell vehicles. Electric vehicles require charging station infrastructure. The source of the electric for these vehicles has an impact on air and water quality. In Clatsop County, the Oregon Department of Energy (ODOE) has identified 165 ZEVs, including 93 battery electric vehicles and 72 plug-in hybrid vehicles. Information from ODOE indicates there are 20 electric vehicle charging stations in Clatsop County.

Cross-Laminated Timber

(CLT) is an emergency wood product with applications in both residential and non-residential buildings. CLT has been touted as a replacement for steel and concrete, which generate large quantities of greenhouse gases in the course of their production. Proponents cite carbon that is sequestered by the trees and captured in the timber as a way to off-set greenhouse gasses. Conversely, warmer temperatures, increased risk from invasive species and increased fire risk due to climate change may impact wood harvest capabilities. Increased harvest activities may also harm ecosystems and impact water quality.

Alternative Fuels

Oregon imports all of its petroleum, which leaves the state vulnerable to changes in pricing

and disruptions in the event of a natural disaster or fuel shortage. Alternative fuels produced in-state can help reduce those effects.

Alternative fuels may also typically produce fewer greenhouse gas emissions than traditional petroleum-based fuels.

Alternative fuels include:

- Ethanol
- Electricity
- Biofuels
- Renewable Diesel
- Compressed Natural Gas
- Renewable Natural Gas
- Liquified Natural Gas
- Liquified Petroleum Gas
- Hydrogen
- Hybrid or dual fuel

CLIMATE CHANGE

On March 10, 2020, Governor Brown issued Executive Order 20-04, directing state agencies to take actions to reduce and regulate greenhouse gas emissions. The executive order establishes new science-based emissions reduction goals for Oregon. The executive order directs certain state agencies to take specific actions to reduce emissions and mitigate the impacts of climate change; and provides overarching direction to state agencies to exercise their statutory authority to help achieve Oregon's climate goals.

In February 2021, the Department of Land Conservation and Development (DLCD), in coordination with 24 other state agencies, will present its 2021 Climate Change Framework to the Legislature. A companion piece, published by the Oregon Climate Change Research Institute in February 2020, identifies increased risks due to climate change for Clatsop County. This study projects higher chances of drought periods, heavy rains, flooding, wildfire, loss of wetland ecosystems, increased ocean temperatures and chemistry changes, changes to average daily temperatures, increased heat waves, and increased coastal hazards such as erosion.

This study notes that Oregon's average temperature warmed at a rate of 2.2°F per century from 1895-2015. In Clatsop County, average temperature is projected to warm between 0.9°-3.5°F by 2039. Corresponding, the number of hot days (90° or warmer) will increase between 0.6-0.8 days by 2039 and the number of warm nights (65°F or greater) will increase between 0.2-0.3 days by 2039. In June 2020, Clatsop County, and much of the Pacific Northwest experienced a once-in-a-thousand-year "heat dome". This oppressive heat mass, which lasted for a day in western Clatsop County and for several days to the east, resulted in damage to vegetation and

death in humans.

These projected changes have impacts for renewable energy sources for several reasons, including:

- Wildfires, coastal erosion and flooding may place energy infrastructure at risk
- Increased periods of drought may hamper consist use of hydropower as water levels become unstable.
- Increasingly warmer or colder days will require more energy use to cool or heat homes and businesses.

DEMAND FOR HOUSING

In 2019, Clatsop County and the cities of Astoria, Warrenton, Gearhart, Seaside and Cannon Beach, completed a housing study to identify opportunities and weaknesses associated with housing supply in Clatsop County. That report concluded that while the County has a surplus of potentially buildable lands, certain types of housing and housing products at specific price-points are either missing from the county's housing inventory, or are not provided in sufficient quantities.

In March 2020, the coronavirus pandemic resulted in changes worldwide that have significantly altered housing markets, including in Clatsop County. Some people choose to leave more densely populated areas and relocate to more rural areas. Others benefited from remote work options, which no longer tied workers to a specific geographic location. As a result, the median selling price of a home in Clatsop County rose from $322,500 in November 2018 to $502,500 in September 2021 (Source: Realtor.com). While some of these home sales will be to households that become permanent Clatsop County residents, many will be vacation homes and some of those will be used for short-term rentals.

The increase in median housing prices, coupled with a lack of long-term rental units, will result in increased pressure to increase housing stock by constructing new residential units. While Goal 14 stresses that higher intensity uses and dense development be directed to urban areas, there is, and will continue to be, a movement to increasing housing development on rural lands. Encroaching residential development has the potential to impact inventoried Goal 5 resources, including wildlife habitat, groundwater, and open spaces.

Continued pressure to direct housing and services away from urbanized areas, as required by Goal 14, may result in an increase in vehicle miles travelled by persons who live on rural residential lands that are located further away from employment centers, shopping, schools, medical facilities, and/or recreation centers. The costs associated with increased vehicle miles traveled are shown below.

TABLE 1: ENERGY BURDEN ON CLATSOP COUNTY HOUSEHOLDS	
% of Energy-Burdened[1] Households	23%

Average annual electricity cost	$1,236
Average annual natural gas cost:	$627
Average vehicle miles traveled per household	21,825
Average vehicle maintenance cost (fuel, maintenance, repairs)	$3,500
Annual energy burden gap	$422
Federal Poverty Level (Family of 3)	$21,720

Source: *2020 Biennial Energy Report,* Oregon Department of Energy

[1]"Energy Burdened" households are those that spend more than 6% of their income on purchasing energy

TRANSPORTATION CONGESTION

As the demand for housing increases there is also a corresponding increase in the need to provide new roads to those homes. Again, while Goal 14 directs new housing development primarily to urban areas, partitioning and subdividing of rural lands continues to occur in unincorporated Clatsop County. The construction of new roads, or the expansion of existing roads, has the potential to eliminate or reduce wildlife habitat.

Alternative modes of transportation, such as walking and bicycling are more typically associated with denser urban settings or with remote hiking and mountain bike trails. Little consideration is typically given to trips in rural communities that could potentially be made without the use of a motorized vehicle. For example, installation of a connected sidewalk or bike path system in the Miles Crossing / Jeffers Gardens area could be interconnected to provide residents safe and easy access to businesses in Warrenton without the need for a vehicle or for placing another trip on state and county roads. Such design considerations can help to improve air quality, physical health and reduce traffic congestion.

TOURISM

Clatsop County has historically had a strong tourism base. Per information from Travel Oregon, in 2019 local recreationists and visitors spent $785 million on outdoor recreation in Clatsop County. Many of those visitors are drawn by Goal 5 resources, including scenic views and sites, open spaces, and wildlife. During the ongoing pandemic, tourism has remained strong as visitors seek outdoor experiences away from crowded venues. However, because of the limited availability of public transit within the county and between adjacent counties and cities, the majority of visitors travel by vehicle to Clatsop County. This increase in traffic also corresponds to an increase in automobile and other vehicle emissions, and may not be economically affordable to all members of the community.

GENERAL POLICIES

Policy A: The County recognizes the need for energy conservation through support of

a County-wide conservation program in which the County government will play a leading role.

a. Methods to reduce energy consumption should be explored, such as enforcing strict temperature and lighting controls in government buildings and incentive programs for carpooling and telecommuting, etc.
b. New government buildings and major renovations to existing structures shall be energy efficient. Decision on design and selection of equipment should not be based on the lowest initial cost alone. Operating and energy costs for a reasonable life expectancy of the building must receive equal consideration. Further, consideration should be given to the use of solar energy and other renewable energy sources in heating and cooling all new government buildings.
c. The County should work together~~,~~ with the cities, Extension Service and Community College to:
    i. Promote energy conservation through seminars, other educational programs, and information dissemination.
    ii. Coordinate with local utility companies to provide technical assistance to individuals desiring to retrofit their homes or buildings with improved insulation and alternative energy sources.
d. The County will continue to support, promote and expand recycling opportunities and will coordinate with cities to discourage businesses from the use of non-compostable/non-recyclable consumables.

Policy B: The following land use policies shall be adopted as part of the Comprehensive Plan to conserve energy and promote the use of alternative systems:

a. Open space should be located whenever possible to buffer structures from shadows cast by other buildings.
b. Existing solar access is to be protected.

Policy C: The County shall promote the application of renewable and alternative energy sources, by encouraging the use of total energy systems where, for example, electricity is generated and the waste heat is utilized for space heating and cooling purposes.

Policy D: The County shall consider energy conservation in the designation of RURAL LANDS and DEVELOPMENT lands.

Policy E: The County shall require notification of all local Native American ~~entities~~

tribes when public notices are required.

Policy F: When siting energy production and distribution facilities the county shall indicate when proposed sites are in tsunami hazard zones.

CLIMATE CHANGE

GOAL 1: **Clatsop County shall work to protect watersheds, surface waters, aquifers and drinking water supplies from the impacts of climate change.**

Policy A: The County shall promote water conservation and reduced use to avoid unnecessary waste and consumption.

ALTERNATIVE SITING POLICIES

Policy A: Identify a future site or sites for the installation of a solid waste disposal site to accommodate a biodigester or other system for the temporary treatment and/or storage of septage.

Policy B: Identify sites for the stockpiling and disposal of organic fill/waste that has been removed from other development sites.

HOUSING AND DEVELOPMENT POLICIES

Policy A: Require new development projects, specifically subdivisions and commercial developments, and/or projects in rural communities, to incorporate bus stops, walking paths and/or bicycle/horse paths whenever possible.

Policy B: Encourage new development to incorporate alternative/renewable energy sources and high-efficiency products into construction. Encourage new public buildings to be constructed to LEED standards (ex: Silver Standard)

Policy C: In order to increase resiliency, electric vehicles can be used to power homes. The County should encourage the installation of these types of systems in new residential construction.

Policy D: The County should support organizations and programs that assist homeowners to retrofit and upgrade to energy-efficient technologies and appliances. This should include dwellings, as well as accessory buildings.

Policy E: Because existing building code does not adequately address weather conditions in the county and additional requirements may be needed at the local level, especially for commercial buildings / flashing. Therefore, the County should work with the Oregon Building Codes Division to identify and implement additional weather-proofing requirements to increase energy

efficiency.

Policy F: When appliances are replaced, the County should encourage replacement with energy-efficient/best technology available.

Policy G: The County should support organizations and programs that assist homeowners to retrofit and upgrade to energy-efficient technologies and appliances. This should include dwellings, as well as accessory buildings.

Policy H: Clatsop County should require new developments to provide for expansion possibilities when installing new subdivision utilities (e.g. to accommodate new technologies such as fiber-optic internet)

ALTERNATIVE / NEW ENERGY POLICIES

Policy A: The County shall consider turbines, utilizing the flow of the Columbia River, as an energy resource.

Policy B: Encourage the private use of energy-generating technologies such as solar panels, wind energy, geothermal heat pumps, and other developing energy sources in order to reduce transmission costs and pollution generated by the consumption of regionally-produced and -oriented energy sources.

Policy C: The County should coordinate with the Oregon Military Department to encourage the installation of solar panels at Camp Rilea.

Policy D: The County should coordinate with the Oregon Military Department to encourage the installation of wind generation turbines at Camp Rilea to achieve zero-net energy goal or be used for profit.

Policy E: The County should consider properties on the Clatsop Ridge as a potential wind generation site, but the County should preserve as much of the plains as possible as open space.

Policy F: Encourage County should review and determine the costs and benefits of converting its fleet to electric vehicles.

Policy G: The County should encourage the use of biofuels and wood gasification whenever possible.

Policy H: The county will encourage utility companies, businesses, individuals and other entities and institutions to utilize alternative energy sources, including but not limited to, biomass, small-scale hydro, solar, wave and wind technology to back up critical energy facilities. An emphasis shall be placed on the use of the most environmentally-friendly alternative energy sources as determined by scientific research.

Policy I: The County should support the installation of wind turbines on higher grounds within the planning areas.

Policy J: The county recognizes that there are limited agricultural lands within the county, but there is also a need to balance that limitation with the need for renewable, sustainable energy sources. To achieve that balance, the county shall encourage the use of small-scale solar installations (5 acres or less) that integrate grazing or other agricultural practices with the solar installation.

Policy K: Incentivize the installation of solar panels through low interest loans or tax abatement/exemption programs.

Policy L: The County should cooperate with state and/or federal agencies in exploring potential sites for off-shore generation (including wind, wave and tidal energy) and reviewing development proposals. The County, in coordination with state and/or federal agencies shall ensure environmental impacts are minimized.

Policy M: The County should encourage and incentivize the conversion of excess energy from non-polluting sources and convert to hydrogen and store.

Policy N: The County should contact the Oregon Department of Energy to see if another study can be completed to identify potential wind generation sites and reassess current sites.

Policy O: Clatsop County shall invite and encourage the development of micro-grid technology and other decentralized power systems; especially for remote rural areas, and emergency back-up power.

Policy P: Consider renewable energy sources as a critical component of a natural hazards mitigation strategy in the event of a prolong power outage.

WATER ENERGY POLICIES

Policy A: When new water supply systems are installed, the County shall encourage the use of in-watermain-hydro technology, similar to that used by the City of Astoria.

Policy B: Encourage the use of upper/lower reservoirs and pump stations to generate electricity (pumped storage sites)

Policy C: The County should support the concerns of the Chinook Indian Nation regarding the use of hydropower by identifying the costs and benefits of using small in-stream hydropower generation by reviewing existing studies

and regulations.

RECYCLING AND COMPOSTING POLICIES

Policy A: The county shall encourage community composting.

Policy B: The County should identify a site for an organic waste dump / composting facility.

Policy C: In order to reduce energy consumption and reduce trash in landfills and roadside litter that can harm wildlife, the County shall encourage businesses to reduce the amount of single-use and recyclable customer products, such as to-go containers and bags.

Policy D: When single-use products must be used, the County should encourage the use of recyclable or biodegradable products.

Policy E: The County will continue to support, promote and expand recycling opportunities.

Policy F: In order to increase recycling opportunities, the County shall work with recycling companies to establish additional recycling centers in underserved or unserved areas of Clatsop County.

TRANSPORTATION POLICIES

Policy A: Explore priority areas and funding methods for construction and ongoing maintenance of walking paths and/or bicycle paths in Arch Cape, especially east of Highway 101.

Policy B: Because clustered development provides opportunity for public transit and reduces energy use, the County should encourage development of public transit and car and/or bike sharing programs.

Policy C: The County should conduct a commercial lands inventory to determine the need for more local commercial, medical, cultural opportunities for Elsie-Jewell area in order to reduce the number of average daily trips for such services.

IMPLEMENTING OREGON ADMINISTRATIVE RULES (OAR):

COORDINATING AGENCIES:

None

Oregon Department of Environmental Quality (DEQ)
Oregon Department of Energy (ODOE)
Oregon Department of Agriculture (ODA)

Oregon Water Resources Department
Oregon Department of Land Conservation and Development (DLCD)

Oregon Territorial Sea Plan
Future Climate Projections Clatsop County, Oregon Climate Change Research Institute, February 2020

BACKGROUND REPORTS AND SUPPORTING DATA:

Clatsop County

TO: Planning Commission

CC: Gail Henrikson, Director

FROM: Julia Decker, Planning Manager

DATE: March 29, 2022

RE: **COMPREHENSIVE PLAN GOAL 14 – DRAFT 3 REWRITE**

A third draft of revised Goal 14 is attached.

Goal 14 – Urbanization is extremely brief in the original Comprehensive Plan, with no narrative, a handful of policies, and copies of the urban growth boundary management agreements between Clatsop County and each of the five cities. While the majority of the policies still apply and need only minor revisions, staff has added a background narrative that briefly addresses topics for which community members frequently request information. In addition, staff received direction from the Board of County Commissioners regarding some policy questions and goal/policy additions at the Board's review of draft 1. Draft 2 inlcuded these revisions.

On February 22, 2022, the Joint Planning Commission / Countywide Citizen Advisory Committee, completed a review of draft 2 of the Goal 14 revision. In addition to the Board direction, staff included in with draft 2 a set of initial recommendations from the Department of Land Conservation and Development's (DLCD) *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities* (https://www.oregon.gov/lcd/Publications/TsunamiLandUseGuide_2015.pdf, as prepared by Parametrix, a consutlant to DLCD. Incorporating goals and policies that support tsunami evacuation route development into the Clatsop County Comprehensive Plan will allow the County to integrate Tsunami Evacuation Facilities Improvement Plan (TEFIP) recommendations into its long-term development and growth strategies. Several of the recommendations were specific to Goal 14.

The Joint Planning Commission / Countywide Advisory Committee made several revisions to the second draft of Goal 14 at the February 22, 2022, joint meeting. Additions/revisions are reflected in this third sraft in red, and original and previous revisions accepted by the joint group are in black text.

STATEWIDE PLANNING GOAL 14:

To provide for an orderly and efficient transition from rural to urban land use, to accommodate urban population and urban employment inside urban growth boundaries, to ensure efficient use of land, and to provide for livable communities.

CLATSOP COUNTY GOAL 14:

To provide for an orderly and efficient transition from rural to urban land use.

OVERVIEW

Oregon's statewide planning program conserves rural land for farming and forestry, protects natural resources and wildlife habitat, and allows development in appropriate places. In Oregon's statewide planning program, "rural land" generally is land outside of an urban growth boundary.

Statewide Planning Goal 14 is designed to keep distinct urban and rural lands and uses separate from each other.

The goal requires urban growth boundaries to be established and maintained by cities, counties, and regional governments to provide land for urban development needs and to identify and to separate urban and urbanizable land from rural land. The program discourages "sprawling" development that takes place outside an urban growth boundary.

Establishment and change of urban growth boundaries is a cooperative process required by state land use laws. Each city is required to establish and maintain an urban growth boundary to provide land for future urban development.

Clatsop County maintains urban growth management agreements with each of the county's five cities: Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton. These agreements are updated as needed. Each of the cities is responsible for development within its urban growth boundary. A city's city limits boundary is contained within its urban growth boundary. An urban growth boundary may match but usually exceeds the city limits boundary. Clatsop County is responsible for management of development in rural areas outside urban grown boundaries, as well as in "Rural Communities", discussed later in this planning element.

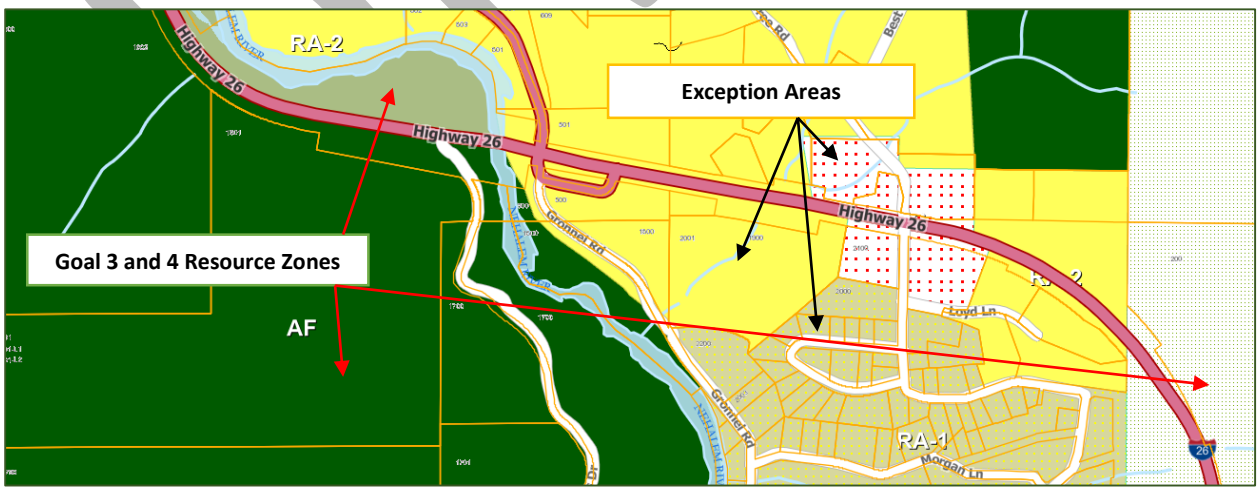
Goal 14 also sets criteria for converting rural lands to urban lands, sets infrastructure requirements for urban lands, and places limits on infrastructure for unincorporated, rural places.

A county decides where rural development should be allowed by following what is called the "exceptions process." Rural residential, recreational, commercial, and industrial zones (in "exception areas") allow development in certain rural areas. All rural development is overseen by the counties.

EXCEPTION AREAS

Rural land that has physical properties that make it suitable for farm or forest use generally is required to be planned and zoned for those resource uses. Exception areas zoned for rural residential use are subject to their own rule. Goal 14 limits urban development outside urban growth boundaries, and the rule implementing Goal 14 for rural residential areas specifies the level of development a county may allow without the area becoming urbanized. In some cases, a county may approve an "exception" to Statewide Planning Goal 3, Agricultural Lands, and/or Goal 4, Forest Lands, to zone land for other uses. Examples in Clatsop County include lands zoned Residential-Agriculture 1, 2 or 5, all of the five rural communities, and the Coastal Residential Zone.

The most common reason for "taking an exception" is that the land is "physically developed" or "irrevocably committed" to non-farm and non-forest uses, such as a rural residential neighborhood or a crossroads store that existed before the statewide planning goals took effect. Tsunami hazard zones have been identified after the Statewide Planning Goals took effect. Potential exception areas in Clatsop County include mapped high hazard tsunami zones. Other examples in Clatsop County include areas along Hwy 26 and Olney, Elsie and Jewell. If an area is shown to be committed to non-resource use, infill development is permitted at a rural scale. Outward expansion of development would require a new exception. Zoning of these exception areas must limit uses to those that are the same as existing uses or compatible rural uses.



Elderberry area zoning, Clatsop County GIS, includes areas for which exceptions to Goals 3 and 4 have been taken: Tourist Commercial, Residential Agriculture-1, and Residential Agriculture-2 are designated "Rural Lands" in the Comprehensive Plan and zoned for rural development. Also shown are Exclusive Farm Use, Agriculture-Forestry, and Forestry-80, all designated as Goal 3 and Goal 4 resources lands with 80-acre minimum lot sizes. The zoning is consistent with the development pattern already established when the zoning was first implemented with the original zoning ordinance in 1966 (Ordinance No. 66-02).

A county can also take an exception to Goal 3 and Goal 4 if there is a strong reason those goals should not apply. In this case, the county must look at compatibility of the proposed use with existing adjacent uses and compare the long-term land use effects of placing the proposed use in the proposed location versus other locations. Zoning of a "reasons" exception area must limit allowed uses to those used to show that the exception is justified.

Other goals, in addition to Goal 3 and Goal 4, may be subject to an exception. For example, a county must take an exception to Goal 14, Urbanization, in order to allow an urban use on rural land. State rules for taking an exception and zoning of exception areas are located here:

OAR 660-004
OAR 660-014-0030
OAR 660-014-0040

RURAL COMMUNITIES

"Rural Communities" are regulated as established by state land use law, which provides for planning and zoning requirements for unincorporated communities outside established urban growth boundaries using an "exception" procedure. As defined in OAR 660-022-0010, "Rural Community" is an unincorporated community which consists primarily of permanent residential dwellings but also has at least two other land uses that provide commercial, industrial, or public uses (including but not limited to schools, churches, grange halls, post offices) to the community, the surrounding rural area, or to persons traveling through the area.

Exceptions in Clatsop County typically are to Goal 3 – Agricultural Lands and Goal 4 – Forest Lands, resources areas generally not served by either sewer or water districts, and Goal 11 – Public Facilities and Services and Goal 14. These exceptions allow for the establishment of urban-level services, such as the sewer district in Miles Crossing – Jeffers Gardens, and reduced minimum lot sizes. Clatsop County has identified and established boundaries for five "Rural Communities": Arch Cape, Knappa, Miles Crossing - Jeffers Gardens, Svensen, and Westport.

The goals and rules regulating rural uses recognize that some communities in the state did not incorporate as cities. Some of these communities, such as Westport, are indistinguishable from a small city, while others are a little more than a wide spot in the road. The level and intensity of residential, commercial, and industrial development is allowed to be greater in an unincorporated community than on other rural land, but less than inside an urban growth boundary. Urban services such as sewer and water are allowed through the exceptions process described earlier.

The rules for planning and zoning unincorporated communities can be found at OAR Chapter 660, Division 22.

OBJECTIVES AND POLICIES

Policy and District Agreements

Policy A: Urban growth boundaries shall identify and separate urbanizable land from rural land. Establishment and change of the boundaries shall be based upon considerations of the following factors:

(1) Demonstrated need to accommodate long-range urban population growth requirements consistent with LCDC goals;
(2) Need for housing, employment opportunities, and livability;
(3) Orderly and economic provision for public facilities and services;
(4) Maximum efficiency of land uses within and on the fringe of the existing urban area;
(5) Environmental, energy, economic and social consequences;
(6) Retention of agricultural land as defined, with Class I being the highest priority for retention Class IV the lowest priority; and
(7) Compatibility of the proposed urban uses with nearby agricultural and forest activities.

Policy B: Establishment and change of the urban growth boundaries shall be a cooperative process between a city and the county or counties that surround it.

Policy C: Land within the urban growth boundaries separating urbanizable land from rural land shall be considered available over a time for urban uses. Conversion of urbanizable land to urban uses shall be based on consideration of:

(1) Orderly, economic provision for public facilities and services;
(2) Availability of sufficient land for the various uses to insure choices in the market place;
(3) LCDC goals or the acknowledged comprehensive plan; and,
(4) Encouragement of development within urban areas before conversion of urbanizable areas.

Policy D: Plans should designate sufficient amounts of urbanizable land to accommodate the need for further urban expansion, taking into account (1) the growth policy of the area, (2) the needs of the forecast population, (3) the carrying capacity of the planning area, (4) the open space and recreational needs, and (5) mapped high hazard areas.

Urban Growth Boundary Management Agreements

Each city and the county have adopted the UGB management agreements. As of June 1996, through the adopted UGB agreements the cities of Astoria, Cannon Beach, Gearhart, Seaside and Warrenton are administering and enforcing the UGB Comprehensive Plan and Zoning Ordinances inside the UGB outside the city.

Policy A: The County shall review these agreements every three to six years, or as needed and updated accordingly. Clatsop County should approach the cities within the county regarding exploring the potential for expansion of urban growth boundaries and about what capacity and

interest exists for such an undertaking.

See each respective city's Urban Growth Boundary Plan:

- Astoria
- Cannon Beach
- Gearhart
- Seaside
- Warrenton

Clatsop County has adopted each of the UGB plans and zoning for each of the above. They are contained in separate documents in the Clatsop County Community Development Department or respective City Hall.

Policy B: The size of the parcels of urbanizable land that are converted to urban land should be of adequate dimension so as to maximize the utility of the land resource and enable the logical and efficient extension of services to such parcels.

Policy C: Plans providing for the transition from rural to urban land use should take into consideration as to a major determination the carrying capacity of the air, land and water resources of the planning area. The land conservation and development actions provided for by such plans should not exceed the carrying capacity of such resources.

Policy D: Allowable uses on property in the tsunami hazard area vacated as the result of an urban growth boundary expansion to relocate existing development shall be limited. Such limitations shall include permitting only non-residential, low risk uses, or requiring uses which implement adequate protection or mitigation measures for seismic and tsunami hazards.

Unincorporated Rural Communities

Clatsop County has identified and established boundaries for the following rural communities: Arch Cape, Knappa, Miles Crossing - Jeffers Gardens, Svensen, and Westport. Land use plans in these areas recognize the importance of communities in rural Clatsop County.

Policy A: In unincorporated communities outside urban growth boundaries the county may approve uses, public facilities and services more intensive than allowed on rural lands by Goal 11 and 14, either by exception to those goals, or as provided by OAR 660 rules, which ensure such uses do not:

(1) Adversely effect agricultural and forest operations, and
(2) Interfere with the efficient functioning of urban growth boundaries.

Policy B: While being mindful of Policy A, above, Clatsop County should explore the existing exceptions areas' and rural community boundaries and collaborate with rural community service providers regarding whether lands with the boundaries are planned reflecting the current and future needs of the community or whether the boundaries should be adjusted. At the same time, the county should explore whether new areas are emerging that would be

appropriate for the exceptions process and designation as new rural communities.

District Agreements

Clatsop County has adopted agreements with the service districts with respect to land use planning and coordination. These agreements are contained in separate documents located in the Clatsop County Community Development Department and the respective district offices.

Policy A: The County shall review these agreements every three to six years, or as needed and update accordingly.

Policy Implementation

1. The type, location and phasing of public facilities and services are factors which should be utilized to direct urban expansion.
2. The type, design, phasing and location of public transportation facilities (i.e., all modes: air, marine, rail, mass transit, highways, bicycle and pedestrian); and improvements thereto are factors which should be utilized to support urban expansion into urbanizable areas and restrict urban expansion from rural areas.
3. Local land use controls and ordinances should be mutually supporting, adopted and enforced to integrate the type, timing and location of public facilities and services in a manner to accommodate increased public demands as urbanizable lands become more urbanized.
4. Additional methods and devices for guiding urban land use should include but not be limited to the following: (l)tax incentives and disincentives; (2) multiple use and joint development practices (3) fee and less-than-fee acquisition techniques; and (4) capital improvement programming.
5. Plans should provide for a detailed management program to assign respective implementation roles and responsibilities to those governmental bodies operating in the planning area and having interests carrying out the goal.
6. The county should gather data whenever possible regarding temporary urban areas that exist due to surges in visitors and elevate awareness about the size and frequency of these surges.
7. Clatsop County should explore a countywide discussion with the cities, service providers, community advisory committees, etc., regarding establishing better collaboration on where growth is desired and expected and how to manage it appropriately.
8. Restrict the development of lodging facilities and higher density residential housing in tsunami inundation zones or require the implementation of protective measures.
9. Plan for the location or relocation of critical facilities outside of tsunami hazard area when conducting the land needs analysis.

IMPLEMENTING OREGON ADMINISTRATIVE RULES (OAR):

660-004 – Interpretation of Goal 2 Exception Process
660-012 – Transportation Planning
660-014 – Application of the Statewide Planning Goals to Newly Incorporated Cities,

Annexation, and Urban Development on Rural Lands
660-022 – Unincorporated Communities
660-024 – Urban Growth Boundaries
660-025 – Periodic Review
660-032 – Population Forecasts
660-038 – Simplified Urban Growth Boundary Method

COORDINATING STATE AGENCIES:

Oregon Department of Land Conservation and Development (DLCD)
Oregon Department of Transportation (ODOT)

Clatsop County – Land Use Planning

TO: Clatsop County Planning Commission Members

FROM: Gail Henrikson, Community Development Director

DATE: March 23, 2022

RE: **FY 2022-23 LAND USE PLANNING WORK PLAN**

BACKGROUND

In 2020, the Board of Commissioners established a process to create and annually update a strategic plan. The strategic plan establishes focus areas and prioritizes action items associated with those focus areas. Dovetailing with that process, Community Development staff implemented a similar program, which created an annual Community Development Work Plan. This plan includes the Land Use Planning Work Plan, which incorporates strategic plan action items identified by the Board. The Land Use Planning Work Plan also incorporates items identified by staff that should be accomplished in order to meet regulatory requirements; to update regulations and processes;or to increase operational efficiencies. The purpose of the work plan is twofold:

1. Ensure that Community Development staff is focused on Board priority items
2. Assist staff in resource and budget planning

Attached is the proposed FY 2022-23 Land Use Planning Work Plan. The plan is segmented into nine overarching tasks containing a total of 36 subtasks. The primary tasks include:

- Comprehensive Plan Update
- Strategic Plan Focus Areas, including Governance, Environmental Quality, Infrastructure, Social Services, and Economic Development
- Legislated Mandates
- Process Improvement and Streamlining
- Special Projects

Where applicable, staff has noted funding requests that will be required to complete the main task or subtask.

ACTION ITEMS

The proposed FY 2022-23 Land Use Planning Work Plan will be included in the budget request that will be submitted by staff on March 4. Staff is requesting that the Planning Commission review the proposed work plan and provide any recommendations for additions or deletions of tasks and/or subtasks to the work plan. While the deadline has passed to incorporate those revisions into the draft submitted with the budget, staff will present them to the Board of Commissioners. It is anticipated that the Board of Commissioners will review a draft of the work plan at a future work session and will approve the final work plan in June 2022.

LAND USE PLANNING
FY 2022-23 WORK PLAN

TASK #1 COMPREHENSIVE PLAN UPDATE

SUBTASKS	REQUIRED RESOURCES	PARTNERS
A. Goals 1-14, Goal 19 and community plans to be adopted in July-August 2022	1.00 FTE	Public Board of Commissioners County Manager County Counsel County Land Use Counsel Planning Commission Oregon's Kitchen Table
B. Prepare revisions based upon final DLCD review, if needed	1.00 FTE	Board of Commissioners DLCD Staff
C. Draft an RFP for environmental consultant services to update the Estuary Management Plan and develop recommendations to update Goals 16, 17 and 18	0.25 FTE $150,000 (FY 22/23)	Public Board of Commissioners Environmental Consultants Staff
D. Continue to work with Board to review and revise public participation process and schedule as needed	0.02 FTE	Public Board of Commissioners Planning Commission Oregon's Kitchen Table Staff
E. Provide monthly updates to the Board of Commissioners	0.02 FTE	Board of Commissioners Staff
F. Obtain scope of work and cost estimate for land use counsel review of updated goals and community plans	0.05 FTE $10,000 (FY 21/22)	Board of Commissioners County Counsel County Land Use Counsel Staff
G. Partner with Oregon's Kitchen Table to develop and implement a public outreach program	0.05 FTE $25,600 (FY 21/22)	Public Board of Commissioners

LAND USE PLANNING
FY 2022-23 WORK PLAN

			Oregon's Kitchen Table Staff
TASK #2	**STRATEGIC PLAN FOCUS AREAS - GOVERNANCE**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Develop annual work program, to be approved by the Board of Commissioners, establishing priorities and focus areas for staff and the Planning Commission	0.05 FTE	Board of Commissioners Planning Commission Staff
	B. Continue to increase public outreach through the use of new and diverse media in order to attract new participants representing the demographic, economic, and social composition of the county.	0.20 FTE	Public Public Affairs Officer Staff
	C. Create quarterly newsletter to be mailed to all property owners providing updates on ongoing and future projects and to identify future trends and issues	0.15 FTE	Public Public Affairs Officer Staff
	D. Develop and implement a work plan for the state-mandated Committee for Citizen Involvement	0.20 FTE	Public Board of Commissioners Planning Commission Public Affairs Officer Staff
TASK #3	**STRATEGIC PLAN FOCUS AREAS – ENVIRONMENTAL QUALITY**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Identify for the Board what environmental studies may be required if information does not already exist at a state or federal level; assist in preparation of RFPs; assist with review	0.20 FTE	Public Board of Commissioners Planning Commission Environmental Consultant

	of consultants' reports; draft code amendments if required **(Related to Subtask 1C)**		Staff
	B. Participate as needed and monitor AOC Water Needs Study process	0.05 FTE	AOC Board of Commissioners Planning Commission Staff
	C. Provide assistance to prepare Oregon DEQ grant application for ARPA funding to upgrade failing septic systems	0.05 FTE	Board of Commissioners Oregon DEQ Craft3 Staff
	D. Provide assistance as needed for any climate change local impact analyses	0.05 FTE	Board of Commissioners Consultants OCCRI Staff
TASK #4	**STRATEGIC PLAN FOCUS AREAS – INFRASTRUCTURE**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Provide assistance to Emergency Management staff as needed with regard to FEMA hazard mitigation grant application preparation	0.10 FTE	Board of Commissioners Emergency Management Affected Stakeholders FEMA Staff
	B. Initiate process to obtain public input to identify concerns and determine level of support for adoption of a Tsunami Overlay Zone; draft code amendments if needed	0.50 FTE $5,000 (FY 22/23)	Public Affected Stakeholders Board of Commissioners Planning Commission Emergency Management DLCD Staff

LAND USE PLANNING
FY 2022-23 WORK PLAN

	C. Continue to obtain public input and prepare draft code amendments to allow Accessory Dwelling Units (ADUs) on rural lands	0.15 FTE $3,000 (FY 22/23)	Public Board of Commissioners Planning Commission Staff
	D. Identify barriers to affordable and workforce housing within Clatsop County codes; identify a variety of housing options that would be appropriate within unincorporated Clatsop County	0.15 FTE	Public Contractors Board of Commissioners Planning Commission Staff
TASK #5	**STRATEGIC PLAN FOCUS AREAS – SOCIAL SERVICES**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Continue to work with DLCD to conduct an audit of County zoning codes to identify areas where the County's regulations may be out of sync with state regulations regarding home daycare facilities; prepare code amendments recommended by DLCD	0.05 FTE	DLCD Public Board of Commissioners Planning Commission Staff
TASK #6	**STRATEGIC PLAN FOCUS AREAS – ECONOMIC DEVELOMENT**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Initiate process to review local regulatory barriers to economic development; include evaluation of opportunities to reduce the cost of development	0.15 FTE	Public Affected Stakeholders Board of Commissioners Planning Commission Staff
	B. Review and update County's geologic hazard overlay development process and requirements	0.05 FTE	Public Affected Stakeholders Board of Commissioners

LAND USE PLANNING
FY 2022-23 WORK PLAN

			Planning Commission DOGAMI Staff
TASK #7	**LEGISLATED MANDATES**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Continue to meet all regulatory requirements and process applications according to 150-day timeframe mandated by ORS	4.50 FTE	Staff
	B. Update the *Land and Water Development and Use Code* to incorporate any applicable legislative changes made during the 2022 legislative session	0.15 FTE	Public Board of Commissioners Planning Commission Staff
TASK #8	**PROCESS IMPROVEMENT AND STREAMLINING**		
	SUBTASKS	**REQUIRED RESOURCES**	**PARTNERS**
	A. Review and revise Community Development Website to ensure information is relevant, clear, and accurate. Include information that makes the development and permitting process easy to understand for all users.	0.10 FTE	Public Staff
	B. Continue to utilize a formal orientation program for newly-appointed planning commissioners. Update Planning Commission training materials as needed.	0.01 FTE	County Counsel Planning Commission Staff
	C. Continue to work with the Oregon Building Codes Division to implement updates to the Accela e-permitting system to clarify planning requirements.	0.01 FTE	Oregon BCD Staff

LAND USE PLANNING
FY 2022-23 WORK PLAN

TASK #9 SPECIAL PROJECTS

SUBTASKS	REQUIRED RESOURCES	PARTNERS
A. Begin discussions with the Board to determine preferred path to implement requirements of FEMA's Biological Opinion (BiOp); obtain public input	0.25 FTE	Public Board of Commissioners Planning Commission FEMA DLCD Staff
B. Following DLCD acknowledgement of the comp plan updates, begin review of and updates to the LAWDUC	1.00 FTE	Public Board of Commissioners Planning Commission Staff
C. Continue to work with Oregon Solutions to implement the County's commitments from the Clatsop Plains Elk Collaborative Declaration of Cooperation	0.10 FTE	Public Board of Commissioners Oregon Solutions Planning Commission Staff
D. Digitize records pertaining to floating structures (float houses, duck shacks) and create electronic database	0.10 FTE	Staff
E. Continue review of the County's parking standards to ensure that require parking in consistent with industry standards and best practices	0.05 FTE	Public Board of Commissioners Planning Commission Staff
F. Evaluate and obtain public input regarding participation in FEMA's Community Rating System (CRS) program	0.01 FTE	Public Board of Commissioners Emergency Management Staff

LAND USE PLANNING
FY 2022-23 WORK PLAN

	G. Evaluate and obtain public input regarding becoming a Certified Local Government, to assist with historic preservation efforts	0.01 FTE	Public Board of Commissioners Staff
	H. Provide assistance, as needed, to the North Coast Watershed Association as an in-kind OWEB grant match to complete an interactive web map of watersheds and partner activities	0.02 FTE	North Coast Watershed Assoc. Staff
	I. Recreate permitted and conditional use tables in LAWDUC	0.05 FTE	Public Board of Commissioners Planning Commission Staff
TOTAL STAFF REQUIRED			**10.85 FTE**
TOTAL NEW EXPENDITURES REQUIRED			**$193,600**

BCD: Oregon Building Codes Division
DEQ: Department of Environmental Quality
DLCD: Department of Land Conservation and Development
DOGAMI: Department of Geology and Mineral Industries
OCCRI: Oregon Climate Change Research Institute

CLATSOP COUNTY
PROJECT STATUS REPORT

APRIL 2022

PROJECT STATUS REPORT – MARCH 2022

PERMIT #	PROJECT NAME	LOCATION	DESCRIPTION	PC MEETING DATE	PC DECISION	BOC MEETING DATES	BOC DECISION	STATUS	EXPIRATION DATE*
20170352	Arch Cape Deli	4N, R10W, Section 30BB, Tax Lots 00601 and 00605, 79330 Hwy 101	Conditional use permit to construct and operate a restaurant/grocery store/flex space with a manager's living quarters	11-14-17	APPROVED WITH CONDITIONS 7-0	N/A	N/A	Demolition and grading permits approved; property line adjustment approved; development and building permits under review	Project is vested; no expiration date
21-000664	Comp Plan Update	N/A	Update of Goals 1-14 and 16-19 of the Clatsop County Comprehensive Plan	10-12-21	**GOAL 1:** APPROVED WITH AMENDMENTS 5-0	07-13-22 07-24-22		On-going	N/A
				10-12-21	**GOAL 2:** APPROVED WITH AMENDMENTS 4-1	07-13-22 07-24-22		On-going	N/A
				10-12-21	**GOAL 3:** APPROVED WITH AMENDMENTS 5-0	07-13-22 07-24-22		On-going	N/A
				10-12-21	**GOAL 4:** APPROVED WITH AMENDMENTS 5-0	07-13-22 07-24-22		On-going	N/A

PROJECT STATUS REPORT – MARCH 2022

PERMIT #	PROJECT NAME	LOCATION	DESCRIPTION	PC MEETING DATE	PC DECISION	BOC MEETING DATES	BOC DECISION	STATUS	EXPIRATION DATE*
				11-09-21	**GOAL 5:** RETURNED TO JOINT PC/CCAC	07-13-22 07-24-22		On-going	N/A
				12-14-21	**GOAL 6:** APPROVED WITH AMENDMENTS 5-0	07-13-22 07-24-22		On-going	N/A
				2-8-22 3-8-22	**GOAL 7:** APPROVED WITH AMENDMENTS 3/8/22				
				12-14-21	**GOAL 8:** APPROVED WITH AMENDMENTS 5-0	07-13-22 07-24-22		On-going	N/A
				2-8-22 3-8-22	**GOAL 13:** CONT'D TO 4/12/22				

PROJECT STATUS REPORT – MARCH 2022

PERMIT #	PROJECT NAME	LOCATION	DESCRIPTION	PC MEETING DATE	PC DECISION	BOC MEETING DATES	BOC DECISION	STATUS	EXPIRATION DATE*
				1-11-22	**ADUs on Rural Lands**	4-20-22 BOC Work Session		On-going	N/A
21-000591	Velazquez Home Occupation	5N, R10W, Section 14DC, Tax Lots 01103 34074 W. Campbell Loop Road	Conditional use permit to legalize an existing home occupation	2-8-22	**Motion failed on a 2-2 vote; request was denied**	Planning Commission decision appealed to the BOC. BOC review scheduled for May 11		Pending appeal	TBD

*Expiration date for projects that are not completed or substantially completed