PLANNING COMMISSION WORK SESSION AGENDA
Monday, February 24, 2020 - 6:00 PM
City Hall, Conference Room A, 169 SW Coast Hwy, Newport, OR 97365

The meeting location is accessible to persons with disabilities. A request for an interpreter for the DEAF AND HARD OF HEARING, or for other accommodations for persons with disabilities, should be made at least 48 hours in advance of the meeting to Peggy Hawker, City Recorder at 541.574.0613.

The agenda may be amended during the meeting to add or delete items, change the order of agenda items, or discuss any other business deemed necessary at the time of the meeting.

1. CALL TO ORDER

2. UNFINISHED BUSINESS

2.A Update on City Council Direction to Initiate Targeted Nye Beach Code Amendments.

3. NEW BUSINESS

3.A Review Updated Set of Tsunami Hazard Overlay Zone Amendments / Hazard Mitigation Plan.
Memorandum
Draft Amendments to Natural Features Section of the Comprehensive Plan
Draft Amendments Establishing a Tsunami Hazard Overlay - NMC Chpt 14.46
Minutes from the 08-26-19 PC Work Session
Res. No. 3725 & Earthquake Maps

Draft Maps Illustrating DOGAMI's Tsunami Inundation Areas-TIM Maps
Uses Classified as High Hazard-Group H in the 2019 Oregon Structural Specialty Code
HB 4119A Staff Measure Summary & Draft Legislation
Chapter 3 - DLCD Publication

3.B Review Amendments to the Stormwater Facilities Element of the Comprehensive Plan.
Memorandum
Draft Stormwater Element of the Newport Comp Plan 02-24-20
03-12-18 PC Work Session Minutes

4. ADJOURNMENT

City of Newport

Community Development Department

Memorandum

To: Planning Commission/Commission Advisory Committee

From: Derrick I. Tokos, AICP, Community Development Director

Date: February 20, 2020

Re: Tsunami Hazards Comprehensive Plan Policies and Overlay Zone

---

Attached is a draft copy of amendments to the Natural Features Section of the Newport Comprehensive Plan that includes a rationale, background, and policies for guiding development within tsunami inundation areas. Additionally, a draft ordinance establishing a Tsunami Hazards Overlay Zone has been prepared for your review. The overlay expressly limits certain uses in tsunami inundation areas in a manner comparable to provisions contained in ORS Chapter 455 that were removed with the passage of HB 3309 (2019).

These documents build upon materials presented to the Planning Commission at work sessions on August 12th and August 26th of 2019. Minutes from the last work session are enclosed. Additionally, supporting materials referenced in the drafts are included as background.

HB 4119 is likely to be approved during the Oregon Legislature's short session. A copy of the bill and legislative summary are included with the packet. It is a refinement of HB 3309 that will require certain structures in tsunami inundation areas be designed to higher standards. The City will update its building codes to comply with the law if it is passed. It will not impact the proposed amendments, but would be a supplemental set of standards that would apply to certain projects.

Please review the draft amendments. If the Planning Commission is comfortable with the revisions, then staff will initiate the required 35-day DLCD notice prior to the first evidentiary hearing. A motion will be needed from the Commission to formally initiate the legislative process. That can happen at the next regular meeting scheduled for March 9, 2020.

Attachments

- Draft Amendments to Natural Features Section of the Comprehensive Plan
- Draft Amendments Establishing a Tsunami Hazard Overlay (new NMC Chapter 14.46)
- Minutes from the August 26, 2019 Planning Commission Work Session
- Res. No. 3725 and Earthquake Maps from the Newport Addendum to the Lincoln County Hazard Mitigation Plan
- Draft Maps Illustrating DOGAMI's Tsunami Inundation Areas (TIM Maps)
- Uses Classified as High Hazard (Group H) in the 2019 Oregon Structural Specialty Code
- HB 4119A Staff Measure Summary and Draft Legislation
- Chapter 3, DLCD Publication Titled "Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities

(Deleted language shown in ~~strikethrough~~ and language to be added is depicted with a double underline. Staff comments, in *italics*, are provided for context and are not a part of the revisions)

NATURAL FEATURES

Introduction:

Various sections of Newport's Comprehensive Plan have anticipated a demand for additional land to accommodate growth. Sometimes that growth encroaches into areas that are environmentally sensitive or geologically hazardous. Unfortunately, not all developers or other users of the land are aware that several environmental factors exist restricting the development potential of much of the land in the Newport area. Many areas have limitations for development, so special care must be taken prior to and during construction. If care is not taken in those areas, major financial and property losses and possible loss of life may occur.

The prevention of loss of property and/or life is a goal unto itself and should be a major consideration when identifying environmental constraints. But there are also properties that are the site of significant natural features. To protect those features, care must also be taken in nearby development.

This section of the plan will discuss the various environmental issues that face the City of Newport. Where possible, sensitive or hazardous lands will be identified and policies will be developed to protect them. Where not known, procedures must be established to identify and protect these areas.

Geology:

The underlying geology of an area dictates the land forms created by erosive forces. Wind and rain sculpt the land into hills and valleys, wave action builds beaches, streams and rivers flatten mountains, and the earth's internal forces push the land upward to start the process over again.

People, too, shape the land to serve their needs. Houses and shopping centers are built, roads are cut, land is cleared, all to facilitate the needs and desires of a greater number of people. But how do all these forces interact and how do we avoid situations that are in conflict? To answer these questions, we must first examine the underlying geology and then identify inherent problems created because of that geology.

The Newport area is predominantly composed of five geologic units: the Nye mudstone, the Astoria formation, the Yaquina formation, the Cape Foulweather basalt, and the Quaternary marine deposits. A bulletin describing the characteristics of the five units and mapping the general location of each is the Environmental Geology of Lincoln

County, Oregon, prepared by the State of Oregon Department of Geology and Mineral Industries.[1] The map of the Newport area also shows a geologic cross section that bisects the heart of Newport.

The Environmental Geology bulletin contains an appendix that summarizes planning concerns in the Newport area:

"Coastal erosion and landslides are extensive from Otter Rock southward to Yaquina Head. Here the abundance of landslides is due to the steep seaward dip of the underlying bedrock. Problems are especially apparent where highway fills have been placed across canyons or small valleys. Repairs are required annually in these areas. Sliding extends east of the highway, and in some areas the power lines require frequent repair and realignment.

"There are large landslides on both the north and south sides of Yaquina Head. The landslide on the south side has made several buildings unusable. In Agate Beach, subsurface drainage is restricted and a public sewerage system is necessary before additional developments are made.

"In the vicinity of Jumpoff Joe [sic] in Newport, the sea coast has retreated as much as several hundred feet since the turn of the century. A number of homes have been destroyed or badly damaged in recent years [the 1940's] as a result of landslides in this area. Before any additional shoreline areas are developed, the stability of the slope should be studied by soil engineers and geologists. Often an apparently stable slope can be reactivated by the addition of houses and streets.

"From Nye Beach southward to Yaquina Bay the shoreline is being eroded by storm waves. People considering building structures on these cliffs should be aware that the cliffs are eroding back about one foot per year, and erosion could be much more severe if landslides occur. The practice of placing embankments over steep vegetated slopes is extremely hazardous because the vegetation will decompose to produce a slip plain at the interface between the embankment and the original ground.

"East of the shoreline in Newport from about Nye Beach south to the bay, the marine terraces are overlain by loose dune sand. These sands are stabilized where covered by vegetation; however, where the vegetation has been removed or none has grown, the sand is exposed to erosion or transport by wind. Frequently during high winds, the sand can be observed drifting across streets and into properties adjacent to the street.

---

[1] State of Oregon Department of Geology and Mineral Industries, Bulletin 81: Environmental Geology of Lincoln County, Oregon, 1973.

"Just east of Newport, in the vicinity of ~~McClean~~ McLean [sic] Point, much of the slope has been affected by landslides. Development in this area should proceed with great caution. The making of steep cuts, removal of toe support, the additional weight of embankments on the upper slopes, and the addition of moisture from the developments, including subsurface sewage disposal, all add to the instability of the slope. Serious problems can arise, especially following periods of extremely heavy rainfall. Developments in this area could suffer serious slope problems unless the slopes and embankments are properly constructed and a public sewerage system is installed.

"The area south of Yaquina Bay from Highway 101 eastward as far south as Henderson Creek is subject to a seasonal high water table. Before development reaches a greater density, a public sewerage system should be installed. A high water table creates problems for foundations of structures, and in some areas the water will stand at the surface after a heavy rainfall."[2]

The geologic and climatic environment of Newport is attended by a variety of natural hazards that have the potential for creating serious problems involving property. On the other hand, an understanding of these conditions and a sensible approach to coping with them in the planning stages of development can eliminate much of the grief that might otherwise occur.

In order for planning and development to go forward in such a way as to lessen the damage brought on by these conditions, the data and suggestions in this section are introduced as policies for the City of Newport. Local sites shall be evaluated by qualified geologists in order to protect the individual land owners, investors, and developers from problem areas in Newport that are subject to geologic hazards. The geologists shall also make suggestions as to how these problems can be avoided or corrected.

Areas Subject to Geologic Hazards

Marine Terraces

A significant portion of Newport is situated on a marine terrace. These elevated platforms, representing former strand- lines of the sea, extend the full length of the city, interrupted only by headlands and the Yaquina Bay. The terrace materials consist of weakly cemented sand, silt, and pebbly sand overlain in many areas by old, fairly stable dunes. Bedrock beneath the terrace and dune sediments tilts seaward and is exposed in sea cliffs in some places.

---

2 Ibid, pgs. 168-169.

"The margins of these terrace areas adjacent to the ocean are attractive places to build, and many small beach cottages, permanent homes, condominiums, and motels occupy these locations. Unfortunately, the sea cliffs at the terrace margins are slowly but continually receding. Wave erosion during storms and high tides undermines the cliffs, while rain, wind, and frost loosen the upper portions; as a result, masses of terrace material slip seaward at unpredictable rates and in unexpected places.

"In general, marine terrace margins can be expected to retreat from 6 inches to 1 foot per year; however, in certain areas, recession can average more than 10 feet per year. In some locations, erosion may not be evident for a decade and then 10 or 15 feet of the cliff may drop off in a single season. Occasionally, very large areas involving a number of acres of land may slide seaward, such as in the Jump-Off [sic] Joe area of Newport.

"Excessive slippage along terrace margins is due to the sliding of weakened, water-saturated bedrock along its seawardtilted bedding planes. Of course, the overlying terrace sediments move with it. Particularly vulnerable to bedding-plane failure is the Nye Mudstone. This type of movement may have vertical and horizontal components of only 2 feet to as much as 50 feet. At first the surface of the slide block is not disrupted, but it is generally back-tilted, or rotated down, on the landward side. Water often accumulates in a sag pond at the back of the slide.

"The surface of these slump areas may range from 50 to 100 feet wide and from 200 to 1,000 feet long. To the untrained eye, such apparently level areas of ocean frontage might appear to be desirable building sites. Unfortunately, however, these areas are extremely unstable since the ground surface must adjust to constant wave erosion at the toe of the slide. In a short time, the entire slump block can be eroded away. During the limited life of the slump block, home owners will be plagued with continual problems of settlement, such as cracks in walls, jammed doors and windows, and water- and sewer-line difficulties."[3]

Old Dune Areas

In certain areas, such as South Beach and Nye Beach, large old sand dunes have developed a thick soil profile and have remained stable for many years. "However, the need for easily excavated fill material and the preparation of ground for building sites has led to the removal of the stabilizing soil layer and has exposed loose sand. If these exposed areas are not immediately stabilized, the wind will soon erode basins and troughs, causing the sand to migrate to adjacent housing areas where it can cover driveways, sidewalks, streets, and lawns."[4]

---

[3] Ibid, p. 127.

[4] Ibid, p. 132.

Sandspits and Active Dunes

"Sandspits and their active dunes are of recent origin and should be regarded as relatively temporary features. Some parts of the spits and dunes are built up quickly by water and wind and destroyed by the same agents a few years later. Their instability results from the interplay of numerous environmental factors, including ocean currents, size and number of storms, volume of stream sediment entering the ocean, and variations in tides and wind patterns."[5]

Sandspits and active dunes are found mostly at the mouth of Yaquina Bay and in South Beach. "Preservation of vegetation on the dunes south of Yaquina Bay is recommended since excavation into loose sand could initiate further dune migration....It is essential that the foredune be preserved. Construction in this dune area could be hazardous."[6]

Hillside Development Areas

"Nearly all aspects of hillside land development combine to create slope instability unless the entire construction project is properly engineered. It should be emphasized that slope failure may occur 5 [sic] to 10 [sic] years after the start of the development, by which time the developer may have divested himself of interest and responsibility.

"Development of hillside properties[7] has a considerable adverse effect on slope stability. Whenever material is excavated from a side hill, it results in a steeper than natural slope. Material excavated from the cut is usually placed immediately downslope to provide a nearly horizontal area for a yard or garden. Both operations create instability by oversteepening and adding weight to the slope.

"Most hillside housing developments progress gradually....By the time the development is complete, nearly half of the ground surface is covered by buildings, streets, driveways, and sidewalks, preventing normal infiltration of precipitation. Not only will the total rainfall be concentrated in small areas, but additional water will build up from septic-tank drainage, roof drains, and lawn sprinkling, causing possible oversaturation of downslope soils and eventual slope failure involving large sections of the total hillside area."[8]

---

[5] Ibid, p. 132.

[6] Ibid, p. 132.

[7] Properties with a slope greater than 12%.

[8] State of Oregon, Bulletin 81: Environmental Geology of Lincoln County, Oregon, p. 135.

Inland Mountainous Areas

"Construction inland from the coast...usually involves steep topography along the valleys of the major rivers and smaller streams. (Flood-plain development and its associated hazards are discussed under 'Flood-prone Areas,' below.) Since the early days of settlement...these valleys have provided the best access inland from the ocean. As a result, farms, small towns, roads, and highways have followed them. Logging roads have penetrated far into the mountainous areas along the steep walls of the smaller tributary streams, and some of these roads have come into permanent use.

"The valleys were excavated by streams to great depth during the ice ages of the Pleistocene when sea levels were considerably lowered. Melting of the ice during interglacial episodes caused a rise in sea level and gradual drowning and silting up of the lower reaches of the valleys. Meandering streams now impinge on the steep walls, removing support of the weathered rock and soil mantle, causing new landslides and renewed movement of old slide masses. Man-made cuts for road construction, basement excavations, and other purposes have the same effect on the potentially unstable soil and rock."[9]

Summary

The Newport area has many places that are subject to geologic hazards. As the city grows, those areas are being encroached upon more and more. Another conflict is that those areas with the worst geologic problems are also the areas most desirable for development and, therefore, command the highest prices.

The different geologic units pose different problems that cannot be summarized in a general section of any report. Consequently, it is necessary to generally identify hazardous areas and require site specific studies prior to development. All possible geologic hazards should be explored and satisfactory solutions determined prior to any construction. If correction will be uneconomical, the project should be abandoned. To ignore a geologic hazard is to invite disaster.

Earthquakes:

~~"Earthquakes are products of deep-seated faulting and subsequent release of large amounts of energy. Vibrations radiating from the fracture are felt or recorded at the Earth's surface as earthquakes. In some places, such as the San Andreas Fault in California, the fault producing the earthquake can be mapped at the surface, but usually the fault is buried~~

---

9 Ibid, p. 135.

(concealed) and cannot be observed at the surface. In Lincoln County, faults are numerous in the bedrock units. Snavely and others (1972 a, b, c) indicate a complex system of northwest- and northeast-trending normal faults, some of which have large vertical displacements. The age of faulting is not well established, but the youngest bedrock unit involved is late Miocene (15 m.y. [million years]). No faulting is present in the marine terrace deposits of late Pliocene to early Pleistocene, indicating that fault movement is at least older than 0.5 m.y. Although faulting is extensive in the County, no master earthquake-producing fault system is indicated.

"Earthquake summaries by Berg and Baker (1963) and Couch and Lowell (1971) provide historical earthquake data for Lincoln County. The data indicate that the recorded seismic history extends back only some 70 years to the late 1800's....During this period, seven earthquakes were reported: four at Newport with intensity ratings (Modified Mercalli) of IV; one at Waldport, intensity rating IV; one at Seal Rock, intensity rating III; and one at Alsea, intensity rating III..."[10] (See Table 1 on page 34.)

"These studies also indicate that distant earthquakes, such as in the Gorda Basin off the southwest Oregon coast, could produce intensities of between VI and VII. Ground motion during earthquakes, from nearby earthquake epicenters as well as distant earthquakes, can affect not only buildings, bridges, and similar structures but also areas of potential land subsidence and landslides. Granular soils, especially thick sections of loose, saturated sand and gravel, will consolidate and subside as a result of shaking ground motion. Because subsidence is usually uneven, buildings on such ground may be tipped or destroyed. In regions of moderate to high relief with unstable slopes and saturated ground conditions (such as most of Lincoln County during winter and spring months), earthquake vibrations could start massive slope failure. In addition, fluid response in saturated lowlands soils could result in liquefaction as downslope flow, even on gentle slopes."[11]

---

[10] Ibid, p. 124.

[11] Ibid, p. 125.

~~Table 1~~
~~City of Newport~~

~~Year~~	~~Date~~	~~Location~~	~~Intensity~~	~~Remarks~~
~~1897~~	~~Jan. 26~~	~~Newport~~	~~IV~~	
~~1902~~	~~June 14~~	~~Newport~~	~~IV~~	
~~1916~~	~~Jan. 14~~	~~Newport~~	~~IV~~	
~~1928~~	~~Sept. 4~~	~~Newport~~	~~IV~~	~~Felt for radius of 10 miles~~
~~1940~~	~~May 25~~	~~Waldport~~	~~IV~~	~~Felt at Toledo and Depoe Bay; small objects moved at Waldport.~~
~~1941~~	~~Oct. 19~~	~~Seal Rock~~	~~III~~	
~~1957~~	~~Mar. 22~~	~~Alsea~~	~~III~~	

The Pacific Northwest experienced a subduction zone earthquake estimated at magnitude 9 on January 26, 1700. The earthquake generated a tsunami that caused damage as far away as Japan. Cascadia subduction zone earthquakes and associated tsunamis have occurred on average every 500 years over the last 3,500 years in the Pacific Northwest. The time between events has been as short as 100 to 200 years and as long as 1000 years. The geologic record indicates that over the last 10,000 years approximately 42 tsunamis have been generated off the Oregon Coast in connection to ruptures of the CSZ (19 of the events were full-margin ruptures and arrived approximately 15-20 minutes after the earthquake).[10]

Earthquake-induced damages are difficult to predict, and depend on the size, type, and location of the earthquake, as well as site-specific building and soil characteristics. Presently it is not possible to accurately forecast the location or size of earthquakes, but it is possible to predict the behavior of soil at any particular site. In many major earthquakes, damages have primarily been caused by the behavior of the soil. The Department of Geology and Mineral Industries (DOGAMI) has developed maps for the City of Newport that show areas of higher risk (relative to other areas) during a damaging earthquake. Specifically, the maps display relative amplification hazards, relative liquefaction hazards, areas subject to earthquake-induced landslides, and hazards attributed to the combined effects of ground shaking. The maps are referenced as Figures NA-4 to NA-7 in the Newport Addendum to the Lincoln County Natural Hazard Mitigation Plan, dated July 2015.

Newport's concentrated population and resources, as well as the soil characteristics and relative earthquake hazards, as depicted on the referenced maps, are cause for further study and significant effort toward mitigating the earthquake hazards, including seismically upgrading essential facilities and ensuring new development adheres to modern, earthquake---resistant building codes.

[10] Oregon Natural Hazard Mitigation Plan. Department of Land Conservation and Development, 2015.

Tsunami's:

The Oregon coast is well known for its spectacular scenery and natural resources. However, because the coast lies at the interface between land and the Pacific Ocean, it also is a zone of great instability and vulnerability. Over time, we have gained a greater awareness of our coast's geologic hazards and its risks to people and property.

Coastal Oregon is not only vulnerable to chronic coastal hazards such as coast erosion from winter storms and sea level rise, but it is also subject to the potentially catastrophic effects of a Cascadia earthquake event and related tsunami. These types of powerful and devastating earthquakes of magnitude 9+ are generated at the Cascadia Subduction Zone (CSZ) where the eastward-moving Juan de Fuca tectonic plate dives under the westward-moving North American plate just off the Oregon coast. These large earthquakes will occur under the ocean just offshore of our coast and will produce extremely destructive tsunamis that can strike the coast 15 and 20 minutes after the earthquake, leaving devastation in their path. It is likely that in most Oregon coast communities, including [insert jurisdiction name], the only warning of an approaching tsunami will be the earthquake itself.

The geologic record shows that the largest of these large CSZ earthquakes and accompanying tsunamis occur about every 500 years, plus or minus 200 years. The last such earthquake and tsunami occurred over 300 years ago, on the evening of January 26th, 1700. This means that we are in the time window where a destructive CSZ earthquake and tsunami could occur and the probability of that occurrence will continue to increase over time. This time the stakes are much higher as the great earthquake and catastrophic tsunami could occur when tens of thousands of Oregonians and visitors are enjoying coastal beaches and towns. To address this increasing risk and substantially increase resilience within our community, the City of Newport is proactively addressing tsunami preparedness and mitigation within its land use program. Land use planning that addresses tsunami risk is an essential tool to help increase resilience to a potentially catastrophic tsunami event within Newport.

The Department of Geology and Mineral Industries (DOGAMI) have developed Tsunami Inundation Maps (TIMs) which provide the essential information for defining tsunami risk along the Oregon coast.[11A] The City of Newport, by this reference, has adopted the TIM's applicable to its corporate limits and urban growth boundary, as a part of its comprehensive plan hazard inventory. The TIMs are referenced in the tsunami related plan policies and land use regulations for purposes of differentiating between areas of higher versus lower risk, which inform the placement of essential and certain special occupancy facilities, evacuation route planning and the application of tsunami resistant building codes.

DOGAMI has further completed a study to provide local government with a quantitative assessment of the time, speed, and challenges affecting tsunami evacuation in Newport and nearby coastal communities for the worst case scenario identified with the TIM mapping.[11B] This "Beat the Wave" analysis and mapping is a resource the City may use to refine its tsunami resiliency planning efforts.

[11A] DOGAMI Tsunami Inundation Map Linc-06 and Linc-07, Tsunami Inundation Maps for Newport North-South, Lincoln County, Oregon, Plate 1

[11B] DOGAMI Open File Report O-19-05, Tsunami Evacuation Analysis of Newport, Lincoln County, Oregon

Staff: The lead sections of the Natural Features Section of the Newport Comprehensive Plan provide context for the policies that follow. The format is akin to an executive summary, with more detailed technical studies being referenced with citations or adopted as appendices. There are a number of components to this section that are dated and should be updated in the future. The amendments proposed are limited to the project at hand, which is to update the City's policy and regulatory documents related to tsunami hazards.

The earthquake provisions are being replaced in their entirety, as they are quite dated. This section of the document deals with earthquake risk generally, not just the Cascadia Event, and the new language has been pulled, in large part, from the City of Newport Addendum to the Lincoln County Natural Hazard Mitigation Plan, dated July 2015 (Adopted by the City Council with Resolution No. 3725). The resolution, and maps referenced in the new section, are enclosed for your review.

A new section has been added addressing tsunami's specifically. Much of the language is borrowed from model provisions contained in DLCD's publication titled "Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities" dated April of 2015. A copy of the relevant chapter is enclosed for reference.

Flood-prone Areas:

"Stream flooding: Flooding of the coastal lowlands in Lincoln County is an annual menace, occurring several times in some years. Major floods causing extensive damage have occurred at least ten times since 1921, generally in December or January, but some have been as early as November 20 or as late as March 31. The interval between major floods has been from 1 year to as long as 15 years, with the average just over 5 years.

"Floods are always associated with periods of heavy rainfall, especially after the ground has been soaked to near capacity or after the ground has been deeply frozen. Snow melt can add considerably to the flood intensity. Near the mouths of streams, flooding can be markedly increased by high tides resulting from strong onshore winds during severe winter storms.

"Destructive flooding by streams occurred in Lincoln County during the winters of 1921, 1931, 1964-65, and 1972. Summarized briefly here, the high water inundated the flood plains of all the major streams. Houses, barns, and livestock were lost; bridges, sections of railroad, and boat docks were swept away; logs and debris from inland were carried out to sea and lodged on distant beaches; residential and business areas of some communities were under water, as were also some resorts; highways throughout the County were blocked by floodwaters and landslides. During the 1964-65 floods, the entire County was isolated.

"Control of flooding in Lincoln County by construction of flood-control dams appears to be extremely unlikely due to the configuration of the stream valleys relative to the cost and effectiveness of a reservoir. Levees and dikes can offer some protection from floods in the lower reaches of the streams where the tidal effect is pronounced.

"The severity of floods in Lincoln County and Newport together with the infeasibility [sic] of adequate flood control structures points out that flood control measures must be in the form of flood-plain zoning regulations."[12]

The outline of flood-prone areas on the Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) should be adequate for determining flood prone areas. "Flood-plain zoning and strict construction criteria are imperative if the annual flood loss is to be reduced....It is essential that local government, the land developer, real estate agent, builder, and prospective lot-buyer become aware of areas of potential flooding before committing themselves to developing the property."[13]

"Ocean Flooding: Ocean flooding is unpredictable and can occur any time of the year. Its causes include storms at sea, strong westerly winds, tidal forces, and large unusual waves. Large unusual waves, although of short duration, can be very destructive. They include tsunamis caused by earthquakes on the sea floor and additive waves created when the crests of several in-phase waves are superimposed and reach the shore simultaneously.

"In the past 33 years [1940-1973], wind and high tides have twice caused excessive flood damage along Oregon's coast. A third destructive wave was a tsunami resulting from the Alaska 'Good Friday' earthquake of 1964; smaller seismic waves have occurred since that time. Although there is no accurate method of predicting the frequency and magnitude of ocean flooding, the occurrence of three damaging floods in 33 years suggests an average of about once every 10 years. Similar waves in the future will probably be even more destructive because of the greatly increased construction of residences, motels, and

---

12 Ibid, p. 125.

13 Ibid, 140.

condominiums at or just above the normal high-tide line. The presence of logs above normal high-tide level is clear evidence of the elevations the sea can reach."[14]

Again, the Flood Insurance Rate Maps have determined from past experience the maximum wave elevations for velocity flooding (V Zones) and areas of shallow marine flooding (AO Zones). The siting of future structures should be based on these maps.

Ocean Shorelands:

This section summarizes inventory information about the shorelands adjacent to the Pacific Ocean. Policy statements follow the inventory information. Identification of the shorelands boundary was based upon the consideration of several characteristics of the land. Resources and hazard areas within the ocean-related portion of the shorelands boundary are mapped on the Ocean Shorelands Map on page 50 (that map can be used by property owners and developers to help determine the level of review required before issuance of development permits). These include:

1.) Beaches, as identified in the Oregon Beach Law.

2.) Dunes, as identified in the 1980 Newport Comprehensive Plan by RNKR Associates.[15]

3.) Younger, stabilized dunes and open sand and wet interdunes as identified in the Soil Conservation Service (SCS) study Beaches and Dunes of the Oregon Coast (for areas not identified in the RNKR study).[16]

4.) Areas of 100-year coastal flood with wave action as identified on the Flood Insurance Rate Maps.

5.) Shoreland protection measures as mapped by RNKR Associates.[17]

6.) Significant shoreland and wetland biological habitat identified by Dr. D.W. Thomas and the U.S. Fish and Wildlife Service.[18]

7.) Coastal headlands.

---

14 Ibid, p. 141.

15 RNKR Associates, Environmental Hazard Inventory: Coastal Lincoln County, Oregon, 1979.

16 U.S. Soil Conservation Service, Beaches and Dunes of the Oregon Coast, 1975.

17 RNKR Associates, Environmental Hazard Inventory: Coastal Lincoln County, Oregon, 1979.

18 D.W. Thomas, Significant Shoreland and Wetland Biological Habitats and Riparian Vegetation, 1981.

8.) Areas necessary for water-dependent and water-related uses, specifically recreational uses and navigation facilities.

9.) Landslide areas as identified by RNKR Associates in 1979 (map numbers 13:25 through 16:25).

10.) Features of exceptional scenic quality.

11.) Riparian vegetation along streams is included within significant wildlife habitat areas.

12.) The conditionally stable dunes landward of the foredune.

13.) The older, stabilized dunes of the South Beach dune sheet.

14.) The deflation plain east of the foredune and the stabilized dunes.

Beaches and Dunes

Ocean Beaches

Formations: There are four stretches of ocean beach within the Newport urban growth boundary (UGB):

1.) Beverly Beach: The area from Yaquina Head to north of Schooner Creek.

2.) Agate Beach: The area from Yaquina Head south to Jump-Off Joe Rock.

3.) Nye Beach: The area from Jump-Off Joe Rock south to the north jetty.

4.) South Beach: The area south of the south jetty to the southern urban growth boundary.

The sand of the Newport beaches is similar to other Oregon beaches. Sea cliff erosion and marine deposition or erosion are the major factors affecting the supply of sand on the beach. The stability and movement of sand on the beach varies seasonally. The sand is generally eroded from beaches during winter storms. Gentler waves in summer deposit sand on the beach.

This on-and-off shore movement of sand is in addition to the transport of sand along the beach (littoral drift). There appears to be a seasonal reversal in the direction of sand transport along the beach. Waves from the south-west accompany the prevailing winds in the winter months and wind and waves from the northwest predominate during the summer. Sand movement appears to be essentially in balance when averaged over several years. This condition is known as "zero net littoral drift."

The impact of this zero net littoral drift and the extension of the jetties at the entrance to Yaquina Bay has been accretion of sand adjacent to the north and south jetties. The accumulation of sand by the jetties has resulted in some further erosion at greater distances from the jetty. The accumulation of sand on either side of the jetties at the mouth of Yaquina Bay led to dune formation when much of that sand blew inland.

Recreational Uses: The recreational values of the beaches have long been recognized by Oregonians. These beaches are important resources that have long held an attraction for residents and visitors. As the name implies, many agates have been found at Agate Beach. Agate Beach, Nye Beach, and South Beach have razor clams. The beaches, especially during the summer, are populated with beachcombers, surfers, sailboarders, runners, kite fliers, and many other recreation enthusiasts.

Oregon Beach Law: The 1967 Legislature passed the Oregon Beach Law (ORS 390.605-390.700) to codify the public's right to use the dry sand areas of the beaches. The Shoreland Boundary Line was established by that legislation to resolve the question of ownership and the right of the public to use the dry sand areas of the Oregon beaches. In the landmark court case of State Ex Rel Thronton v. Hay, the Oregon Supreme Court said that the state had effectively proven the public's right to use the land seaward of the shoreland boundary line even though the ownership may rest with a private land owner. (It should be noted that the wet sand areas are property of the state as determined by the 1899 Oregon legislature except where sold before 1947.)

The area between the mean high water and the vegetation line is an area where the public's right is paramount but where private ownership is recognized. The state legislature grappled with the question of erosion and the receding nature of the coast line in creating this in between area and in 1969 exempted these lands from taxation.

The Oregon Beach Law also regulates improvements, motor vehicle and aircraft use, pipelines, cable or conduit crossings, and removal of natural products on the ocean shore (ORS 390.635- 390.725). Implementation requirements of the Land Conservation and Development Commission's Beaches and Dunes Goal further restricted permits for beach front protective structures to where development existed before January 1, 1977. Pursuant to this requirement, the Oregon Transportation Commission adopted new Beach Improvement Standards on March 28, 1978.

In addition to the above law, Goal 18/"Beaches and Dunes" limits the issuance of permits for beach front protective structures to those areas where development existed on January 1, 1977. Development means houses, commercial and industrial buildings, and vacant subdivision lots that are physically improved through the construction of streets and the provision of utilities to the lot. Also included are areas where an exception to (2) of the implementation requirements of Goal 18 has been approved.

Dune Areas

The material underlying much of the area within the Newport UGB is sand. Most of this is marine terrace deposits, although these are sometimes difficult to distinguish from older sandstone bedrock or older stabilized dunes. Once the old town area of the city between Nye Beach and the bayfront had dunes, but the area is now largely developed and little remains of these dunes.

All of these areas have sandy soils of either the Netarts, Warrenton, or Yaquina series wherever the soil profile has begun to develop. These series have been mapped by the SCS, and the maps are on file at the Newport Planning Department. It is important to protect these lands from erosion that would create open sand area.

There is a small area with active hummock dunes between Yaquina Bay State Park and the north jetty that is not shown separately on the Ocean Shorelands map because it lies seaward of the beach zone line. The most significant dune area is in South Beach, which is discussed below.

South Beach Dune Complex

The information about dune forms summarized below is drawn from the Beaches and Dunes Handbook for the Oregon Coast[19] and the report and mapping of RNKR Associates in Environmental Hazard Inventory: Coastal Lincoln County, Oregon.[20] These are the most recent sources of information concerning the South Beach dunes.

The South Beach dune complex is the largest dune area in Newport. It was built up from the sand supply on the accretion beach next to the south jetty. RNKR Associates described several types of dune landforms within this South Beach dune sheet, which is the only dune complex identified within the Newport UGB. These dunes are shown on Sheet 4 of the Ocean Shorelands Map (beginning on page 50). The dune complex is located primarily within South Beach State Park, although it extends a short way north and south of the park.

---

19 U.S. Soil Conservation Service, Beaches and Dunes of the Oregon Coast, 1975.

20 RNKR Associates, Environmental Hazard Inventory: Coastal Lincoln County, Oregon, 1979.

The four dune landforms identified in this area are:

1.) Active foredunes: a ridge of sand adjacent to the swash zone of the beach extending south from the mouth of Yaquina Bay.

2.) Conditionally stable dunes: present on the landward side of the active foredunes.

3.) Older stabilized dunes: present in approximately the center of South Beach State Park.

4.) Deflation plain: present on the landward side of the other dune types.

Each of these dune types has different resource values, hazards, and development limitations.

The active foredune collects sand blown from the open beach. The foredune develops where European beach grass causes wind-blown sand to accumulate in a long ridge. These dunes need protection if they are to remain effective barriers to wind erosion and ocean storms. Foredunes are dynamic landforms subject to substantial growth in height and width on accretion beaches, and are vulnerable to rapid removal on eroding beaches. Therefore, buildings are not appropriate on active foredunes.

The conditionally stable dunes landward of the foredune have developed a denser vegetative cover, including more plant species. Although no longer subjected to wind erosion like foredunes, conditionally stable dunes have not had time for significant soil development. Conditionally stable dunes may be appropriate for development with special precautions in places that are not subject to hazards such as ocean flooding.

The older, stabilized dunes of the South Beach dune sheet exhibit soil development and tree cover. Since this dune area is entirely within a state park, no development is anticipated.

To the east of the foredune and the stabilized dunes is an extensive deflation plain. A deflation plain is created when the wind removes dry sand particles from areas landward of the foredune. The summer water table limits the depth of sand removal because groundwater moisture binds the sand together. Standing water is common during the winter when the water table is higher. Some deflation plains are subject to ocean flooding.

All of South Beach is known to have a groundwater aquifer, these dunes deposits are generally thin, and they cannot (as in other places on the Oregon coast) be relied on to supply large volumes of ground water. The dune sands rarely exceed 15 feet in thickness (except in a small area of South Beach) and are deposited directly on marine terrace material. The dune aquifer is not subject to significant development pressures because much of the aquifer is within South Beach State Park. Areas outside the park slated for development are or will be served by municipal water and sewer systems.

The primary value of the South Beach dune complex is recreational. Two deflation plain wetlands south of the old jetty railroad and open sand areas have been identified as significant habitat, as discussed below. The parcel of land between South Beach State Park and Yaquina Bay has been identified as being suited for tourist commercial uses subject to compliance with zoning regulations.

In addition to the dune forms in the South Beach Dune Complex described above, the following additional dune landforms are located within the Newport UGB:

1.) Open sand dunes areas, in the absence of vegetation, operate only in response to sand supply and wind. Open dune sand areas are defined as wind-drifted sand in the form of dunes and ridges which are essentially devoid of vegetation.

Active open dune sand areas are highly dynamic and may advance onto forest land, pasture land, crop land, roads, railroads, lakes, and stream channels, thereby endangering residential, commercial, and industrial property. Yet, at the same time, many open sand dunes have tremendous aesthetic and recreational importance.

2.) Interdunes include a broad range of geomorphic landforms varying from wet open dune sand forms to wet areas in recent and older stabilized dunes.

In general, broad areas that are both stable and wet were mapped as wet interdune, and the stabilized area was shown as being secondary. This arrangement points out the major unit to be managed. Most wet interdunes are principally wildlife habitat areas. However, many areas mapped as wet interdunes are old deflation plains or reexposed coastal terraces. A primary development limitation is the inability of some wet interdune areas to accommodate subsurface sewage disposal.

3.) Younger stabilized dunes are youthful, cross-bedded, windstable dune landforms that have weakly-developed sandy soils with little or no development of cemented nodules, lenses, or horizons. Vegetation on these dunes ranges from native grasses, European beachgrass, and shrubs such as scotch broom and tree lupine to woody species. The dominant tree is shore pine, but Sitka spruce, western hemlock, Douglas Fir, western red cedar, Oregon crabapple, and red alder also occur.

The younger stabilized dunes are differentiated from older stabilized dunes by differences in soil profile characteristics and the predominance of shore pine and other woody species. Texture and cementation are the primary criteria use for differentiation, although organic matter, depth, and distribution are also considered.

The younger stabilized dune mapping unit includes the stabilized dunes and transition forests. These areas contain many species of birds, mammals, amphibians, and reptiles. Occasional snags serve as nesting areas for a variety of birds.

Younger stabilized dunes offer opportunities for the placement of man-made facilities. Established vegetation provides shelter from the wind and a location from which to venture out into the open sand. However, on-site investigation is needed because building sites may be limited by slope, depth of water table, and horizontal and vertical permeability if septic- tanks are used. Some septic drain field failures have been reported in areas mapped as younger stabilized dunes. Surface or subsurface drainage that significantly reduces soil moisture in stable areas might result in the killing of low shrubs and should be avoided. Excavation and vegetation removal in stabilized dune areas needs to be well managed to prevent exposure of open sand to wind erosion and subsequent blow-outs.

Shoreland Hazards

Ocean Flooding

Ocean flooding is the inundation of lowland areas along the coast by salt water due to tidal action, storm surge, or tsunamis (seismic sea waves). Landforms in Newport subject to ocean flooding include beaches, the bases of sea cliffs, marshes and low-lying interdune areas. All areas shown on the Flood Insurance Rate Map in Zone V and areas below the 10 foot elevation south of and adjacent to the south jetty are considered to be areas subject to ocean flooding.

The National Flood Insurance Program (FIA) requires that all living areas or residences built or rebuilt within the floodplain be built so that the lowest habitable floor is at least one foot above the base flood level. In addition, buildings, foundations, and other structures must be built so that flood problems are not worsened in other areas. The City of Newport flood plain management regulations for coastal high hazard zones have been recognized as appropriate by FEMA.[21]

Shoreline Protection Measures

Ocean wave undercutting and consequent sea cliff erosion has been identified as a major source of beach sand. The following description of landslide areas also notes the role of ocean wave action. In an effort to protect property from cliff retreat, sand movement, and ocean flooding, several shoreline protection features have been built.

RNKR Associates mapped riprap armor along the shoreline in order to inventory these features. These are shown on the Ocean Shorelands map beginning on page 50. Control of shoreline protection features by local authorities is needed to prevent unexpected changes in beach equilibrium or aggravated erosion of adjacent lands. RNKR suggested several questions to be answered in the review of new shoreline protection structures which have been incorporated into ordinances controlling development along the shoreland.

In addition to city policies and regulations, beach areas within the vegetation line established by ORS 390 are under the jurisdiction of the Oregon State Parks and the Division of State Lands. A permit is required from those agencies prior to the construction of any beach front protective structures.

---

[21] Federal Emergency Management Agency, letter to the City of Newport, 1987.

Landslide and Coastal Erosion Areas

Landslide and Coastal Erosion areas were mapped within the Newport urban growth boundary in the 2004 document titled Evaluation of Coastal Erosion Hazard Zones Along Dune and Bluff Backed Shorelines In Lincoln County, Oregon: Cascade Head to Seal Rock, by the Oregon Department of Geology and Mineral Industries (OFR O-04-09). The document and maps are included here by reference. The report describes several types of mass movement (mud flow, slump, soil creep, and debris avalanche) and defines the mapped landslide areas:

Prehistoric Mass Movements: Generally speaking, these are very large landslide and slide blocks that predate historical observations on the Oregon coast (about 150 years) and are deeply eroded with no evidence of recent slide activity.

Potentially Active Mass Movements: These are areas of mass movements that are currently stable (no bowed trees or cracked soil and pavement) but with evidence of recurrent movement in the last 150 years. Unlike the prehistoric slides, these features are generally not extensively eroded and have well-preserved topography indicative of recent movement. Many show no evidence of movement since 1939 or 1967 aerial photography but are probably more likely to have movements than the prehistoric slide areas.

Active Mass Movements: These areas have evidence such as bowed trees and cracked soil or pavement that indicate ongoing down slope movement of large masses of soil or rock.

Quaternary Landslides: Quaternary landslides were mapped by Snavely and others (1976 and 1996). These landslides are shown in inland portions of the City and were not investigated in the 2004 DOGAMI report.

Landslide Terrain: Areas identified as landslide terrain were interpreted by Schlicker and others (1973) from aerial photos and reconnaissance-level fieldwork. The terrain may be landslide or just rolling topography similar to that produced by landslide processes and needs to be field checked.

Bluff and Dune-Backed Shoreline Hazard Areas: Coastal bluff and dune-backed shoreline areas characterized by existing, active erosion processes and three zones of potential future erosion (high, moderate, and low) that respectively depict decreasing risk of becoming active in the future as modeled in the DOGAMI report. The respective hazard zones are more particularly described as follows:

> *Active Erosion Hazard Zones* – For dune-backed shorelines, the active hazard zone encompasses the active beach to the top of the first vegetated foredune, and includes those areas subject to large morphological changes adjacent to the mouths of bays due to inlet migration. On bluff-backed shorelines the active hazard zone includes actively eroding coastal bluff escarpments and active or potentially active coastal landslides.

High Risk Erosion Hazard Zones – For dune backed shorelines, the high risk scenario is based on a large storm wave event (wave heights 47.6 ft high) occurring over the cycle of an above average high tide, coincident with a 3.3 ft storm surge. For bluff-backed shoreline areas, the high risk zone portrays bluff retreat that would occur if only gradual erosion at a relatively low mean rate were to occur over a 60-year period after the slope reaches and maintains its ideal angle of repose(for talus of the bluff material).

Moderate Risk Erosion Hazard Zones – For dune-backed shorelines, the moderate risk scenario is based on an extremely severe storm event (waves 52.5 ft high) coupled with a long term rise in sea level of 1.31 ft. For bluff-backed shoreline areas, the moderate risk zone portrays an average amount of bluff retreat that would occur from the combined processes of block failures, retreat to an angle of repose, and erosion for 60 to 100 years.

Low Risk Erosion Hazard Zones – For dune-backed shorelines, the low risk scenario is similar to the moderate risk approach but incorporates a 3.3 ft vertical lowering of the coast as a result of a Cascadia subduction zone earthquake. For bluff-backed shoreline areas, the low risk zone illustrates a worst case for bluff retreat in 60-100 years considering maximum bluff slope failure, erosion back to an ideal angle of repose, and gradual bluff retreat for 100 years.

Shoreland Resources

Significant Habitats

Significant material regarding shoreland and wetland biological habitats and riparian vegetation along the ocean shoreline in Lincoln County were compiled by Dr. D.W. Thomas in September 1981.[22] Recent aerial photographs and additional information from the Nature Conservancy, Oregon Department of Fish and Wildlife (ODFW), the U.S. Army Corps of Engineers, OCC&DC, and the U.S. Fish and Wildlife Service National Wetlands Inventory were obtained during that study. In July 1983, the City of Newport, in coordination with Lincoln County and the Oregon Department of Fish and Wildlife, reexamined the Thomas Study in the South Beach dune complex. The Ocean Shorelands Map (beginning on page 50) was amended to include only those areas considered by ODFW to be significant shoreland and wetland biological habitat (see the description of South Beach's significant habitat areas on the next page).

[22] D.W. Thomas, Significant Shoreland and Wetland Biological Habitat and Riparian Vegetation, 1981.

The City of Newport also amended the Ocean Shoreland map to exclude the Yaquina Estuary north and south jetties and existing jetty access roads as significant habitat.

The following significant shoreland and wetland biological habitats on Newport's ocean shorelands have been noted and are shown on the Ocean Shorelands map (beginning on page 50):

> Grant Creek west of Highway 101.

> An unnamed drainage east and west of Highway 101 just to the north of the Newport Municipal Airport property and south of South Beach State Park.

> South Beach dune complex.

> The cliffs and offshore rocks at Yaquina Head.

Coastal Headlands

There are two headlands within the Newport urban growth boundary, and one is the well-known Jump-Off Joe Rock. A prominent headland in the last century, only skeletal remains are left, and it is now a minor promontory of the marine terrace upon which most of the City of Newport is located. It has been subject to rapid and substantial marine erosion and seacliff retreat. (See the History and the Parks and Recreation sections of this plan.)

The remaining and more prominent coastal headland is Yaquina Head. This headland is formed by the Cape Foulweather basalt. The surficial extent of this geologic unit was mapped in 1973 by Schlicker.[23] The seaward exposure of this unit is included within the shorelands boundary as a major visual resource of the Newport area. Walker, Havens, and Reickson's Visual Resources Analysis of the Oregon Coastal Zone identified Yaquina Head as an area with potential for an exceptional coastal experience. Congress designated about 100 acres of the Head as an Outstanding Natural Area (ONA) on March 5, 1979, in Section 119 of Public Law 96-199. The act also provided for wind energy research within the ONA. The boundary of the Yaquina Head ONA established by this act is shown on the Ocean Shorelands map.

Once the site of a privately-owned commercial quarry, the primary developed land uses on this headland now are the Yaquina Head Lighthouse and a few residences.

[23] State of Oregon, Bulletin 81: Environmental Geology of Lincoln County, Oregon, 1973.

Recreation Associated with the Pacific Ocean

Yaquina Head, city and state parks, and several public rights-of-way to the ocean beaches provide for recreational opportunities along the ocean shorelands. The designation of the beaches as a special recreational area by the State of Oregon and the acquisition and development of Agate Beach, South Beach, and Yaquina Bay State parks encompass all of the area that is especially suited for recreation along the ocean shorelands within the Newport UGB. Public access to the beach outside of state parks occurs over public rights-of-way or specially acquired parcels. Major public access points are noted on the Ocean Shorelands map and the Inventory Of Oregon Coastal Beach Access Sites, published by Benkendorf and Associates,[24] hereby included within this plan by reference.

Navigation Facilities

Navigation facilities are important uses in the ocean shorelands area. Navigation facilities currently consist of the jetties at the mouth of Yaquina Bay, the Yaquina Bay Lighthouse, and the Yaquina Head Lighthouse.

****

GOALS/POLICIES
NATURAL FEATURES

Goal 1: To protect life and property, to reduce costs to the public, and to minimize damage to the natural resources of the coastal zone that might result from inappropriate development in environmentally hazardous areas.

Policy 1: In areas of known hazards, the City of Newport shall require a site evaluation of the potential dangers posed by environmental hazards prior to city review and approval of a proposed development. It shall be the applicant's burden to show that construction in an environmentally hazardous area is feasible and safe. Site investigations in geologic hazardous areas shall be prepared by a registered geologist or engineer.

Policy 2: The city shall maintain and, where necessary, update ordinances that control development in an environmentally hazardous area.

Policy 3: Where hazardous areas are not specifically identified but a potential hazard may exist, the City should establish procedures within its land use regulations to require a site-specific analysis tool, such as a geologic report.

Policy 4: The city shall continue its participation in the Flood Insurance Program administered by the Federal Emergency Management Agency.

[24] Benkendorf and Associates, Inventory of Oregon Coastal Beach Access Sites, 1989.

Policy 5: Development within the Ocean Shorelands Boundary, as identified on the Ocean Shorelands Map, shall comply with development criteria established within the Zoning Ordinance, except to the extent development is permitted in accordance with the variance procedures of the Zoning Ordinance. The city shall, from time to time, evaluate those regulations to assure compliance with city goals.

Policy 6: Nonstructural solutions to problems of erosion or flooding shall be preferred to structural solutions. Where flood and erosion control structures are shown to be necessary, they shall be designed to minimize adverse impacts on water currents, erosion, and accretion patterns.

Policy 7: Engineering solutions or other measures to provide appropriate safeguards shall be required prior to issuance of building permits in identified hazardous areas if required by a geological report.

Policy 8: The City of Newport will utilize DOGAMI's Tsunami Inundation Maps as the basis of a zoning overlay to guide the placement of new essential and special occupancy structures and develop related tsunami hazard resiliency measures.

Policy 9: Enact building codes to enhance resiliency of structures within tsunami inundation areas, with an emphasis on those serving high-risk populations or that are necessary for post tsunami recovery.

Policy 10: Provide for the development of vertical evacuation structures in areas where reaching high ground is impractical.

Staff: The three policies being added commit the City to (a) put in place a tsunami overlay zone limits certain uses within inundation areas and (b) adopt tsunami resilient building code requirements for high risk structures. The third policy, relating to vertical evacuation structures, has already been implemented in the zoning ordinance. The policy requiring a tsunami hazard and disclosure statement for new development in hazard areas has been dropped. If the Commission believes that it is an essential item, then a City legal review would be needed, in addition to outreach to affected property owners and the real estate community.

A number of DLCD's model policies are not included as they are either redundant or call for the city to take additional steps that may or may not be viable, or would require further review and analysis before they could be implemented. A copy of the full package of policies, presented at the August 26, 2019 Commission work session is enclosed.

Goal 2: Promote public education of known hazards, and facilitate orderly and expedient evacuation of residents and visitors in response to a catastrophic event.

Policy 1: Periodically update, implement, and refine natural hazard mitigation and emergency operations plans, and ensure city ordinance and regulations respond to plan recommendations.

Policy 2: Encourage and support hazard education, outreach, training and practice.

Policy 3: Develop robust and redundant evacuation routes that are well signed and integrated with evacuation assembly areas, shelters and supply caches.

Policy 4: Collaborate with local, state, and federal partners to effectively leverage resources, and establish a culture of preparedness supporting evacuation route planning to minimize risk and maximize hazard resiliency.

Staff: This new goal encapsulates the education and outreach needed to effectively plan for hazard events. It has been tailored to address "all hazards," not just tsunami's, and speaks to both the City's internal and external constituencies. It is intended to address, in summary form, like type concepts presented at the August 26, 2019 work session.

Goal 23: To protect and, where practical, enhance identified environmentally sensitive areas.

Policy 1: Identified environmentally sensitive areas shall be mapped on the Ocean Shorelands Map.

Policy 2: Residential development and commercial and industrial buildings shall be prohibited on active foredunes, conditionally stable foredunes that are subject to ocean undercutting or wave overtopping, and beaches and deflation plains that are subject to ocean flooding. Other development in these areas shall be permitted only if the findings required in Policy 8, below, are met and it is demonstrated that the proposed development:

> Is adequately protected from any geologic hazards, wind erosion, undercutting, ocean flooding and storm waves; and

> Is designed to minimize adverse environmental effects.

Policy 3: Foredunes shall not be breached by non-natural causes except in an emergency and shall be restored after the emergency by the party causing the breach.

Policy 4: The city shall cooperate with federal and state agencies, private individuals, and others in the determination of natural areas.

Policy 5: The city will complete the Goal 5 process for wetlands identified on the U.S. Fish and Wildlife Service Wetland Inventory maps by the next regularly scheduled periodic review.

Policy 6: The criteria for review of all shore and beach front protective structures shall provide that:

> Visual impacts are minimized;

> Necessary access to the beach is maintained;

> Negative impacts on adjacent property are minimized; and

> Long-term or recurring costs to the public are avoided.

Policy 7: Significant shoreland and wetland biological habitats and coastal headlands shall be protected. Uses in these areas shall be consistent with the protection of natural values.

Policy 8: Development in beach and dune areas other than older, stabilized dunes shall only be permitted if the following issues are examined and appropriate findings are made:

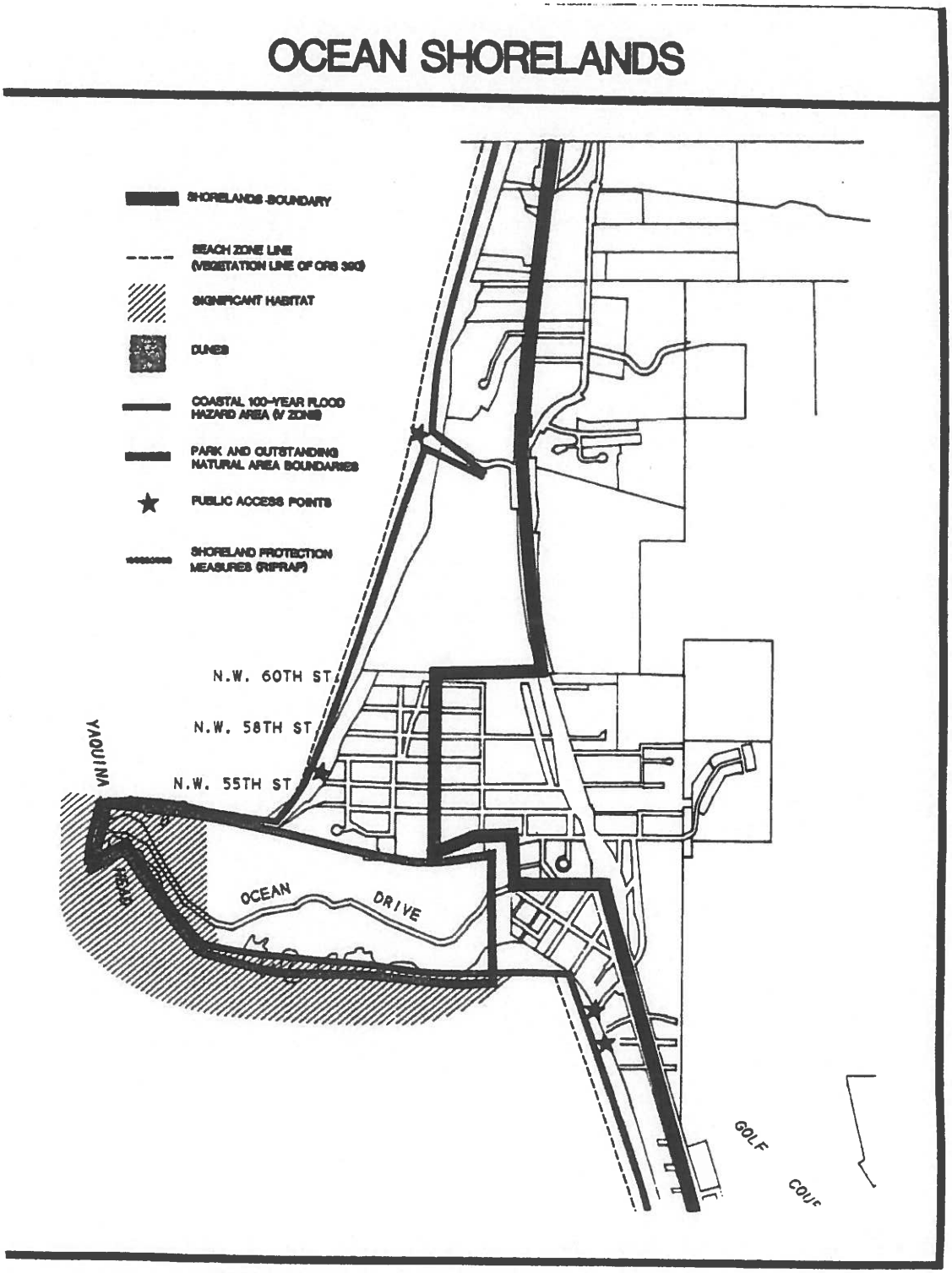
> The type of use proposed and the adverse effects it might have on the site and adjacent areas;

> Temporary and permanent stabilization programs and the planned maintenance of new and existing vegetation;

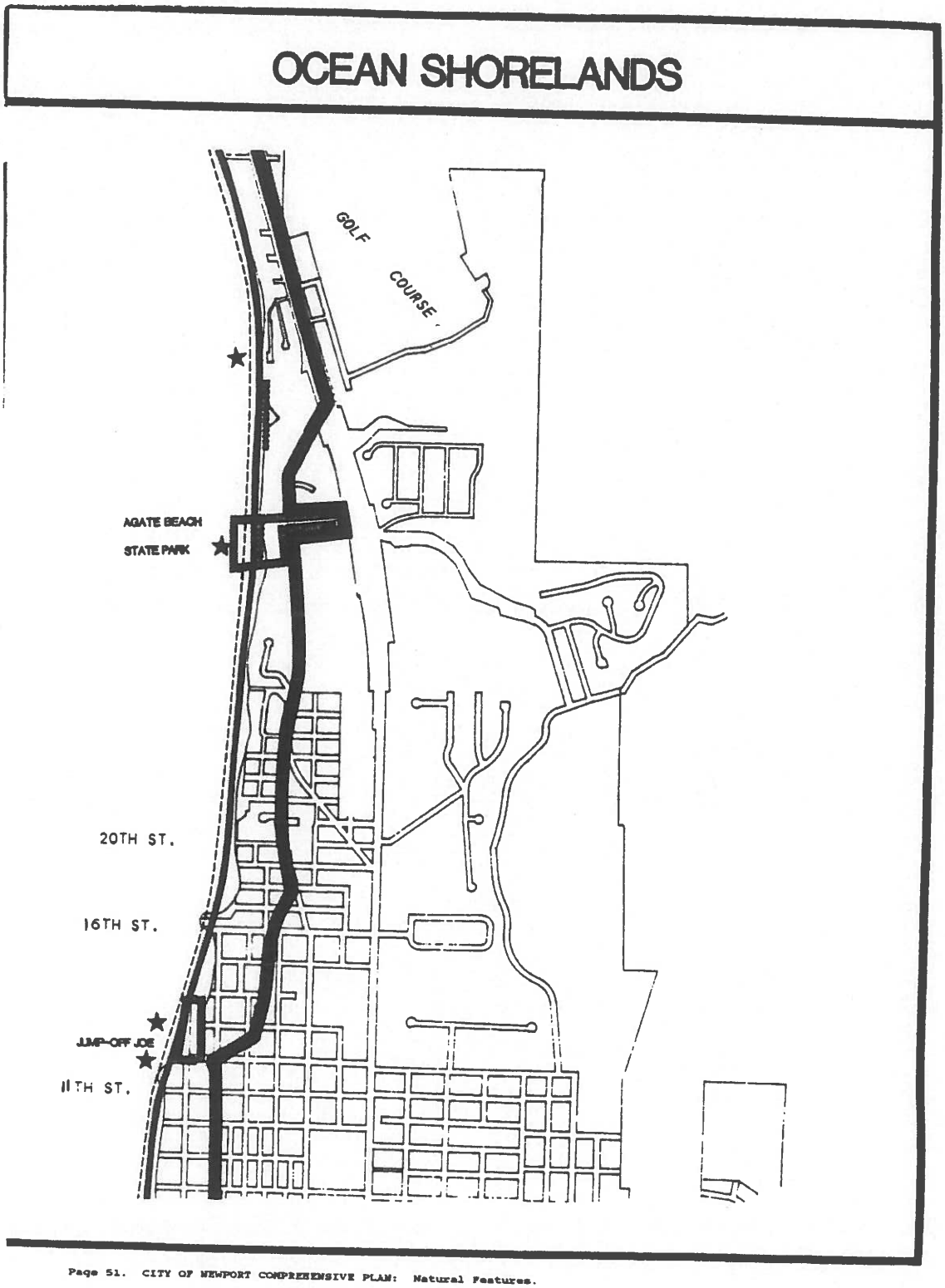
> Methods for protecting the surrounding area from any adverse effects of the development; and

> Hazards to life, public and private property, and the natural environment that may be caused by the proposed use.

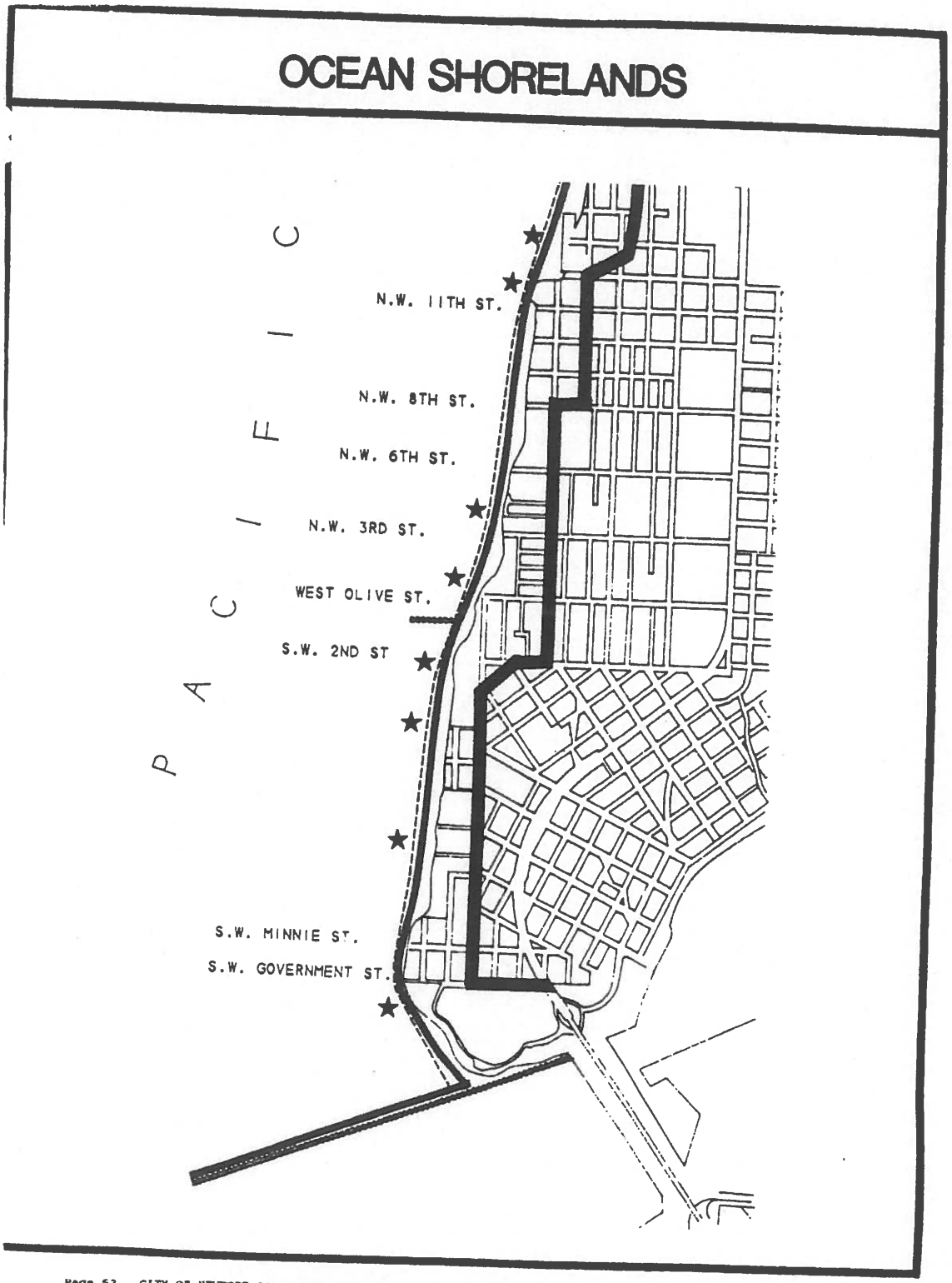
Policy 9: Excavations and fill shall be limited to those minimal areas where alteration is necessary to accommodate allowed development. Cleared areas, where vegetation is removed during construction, shall be revegetated or landscaped to prevent surface erosion and sedimentation of near shore ocean waters.



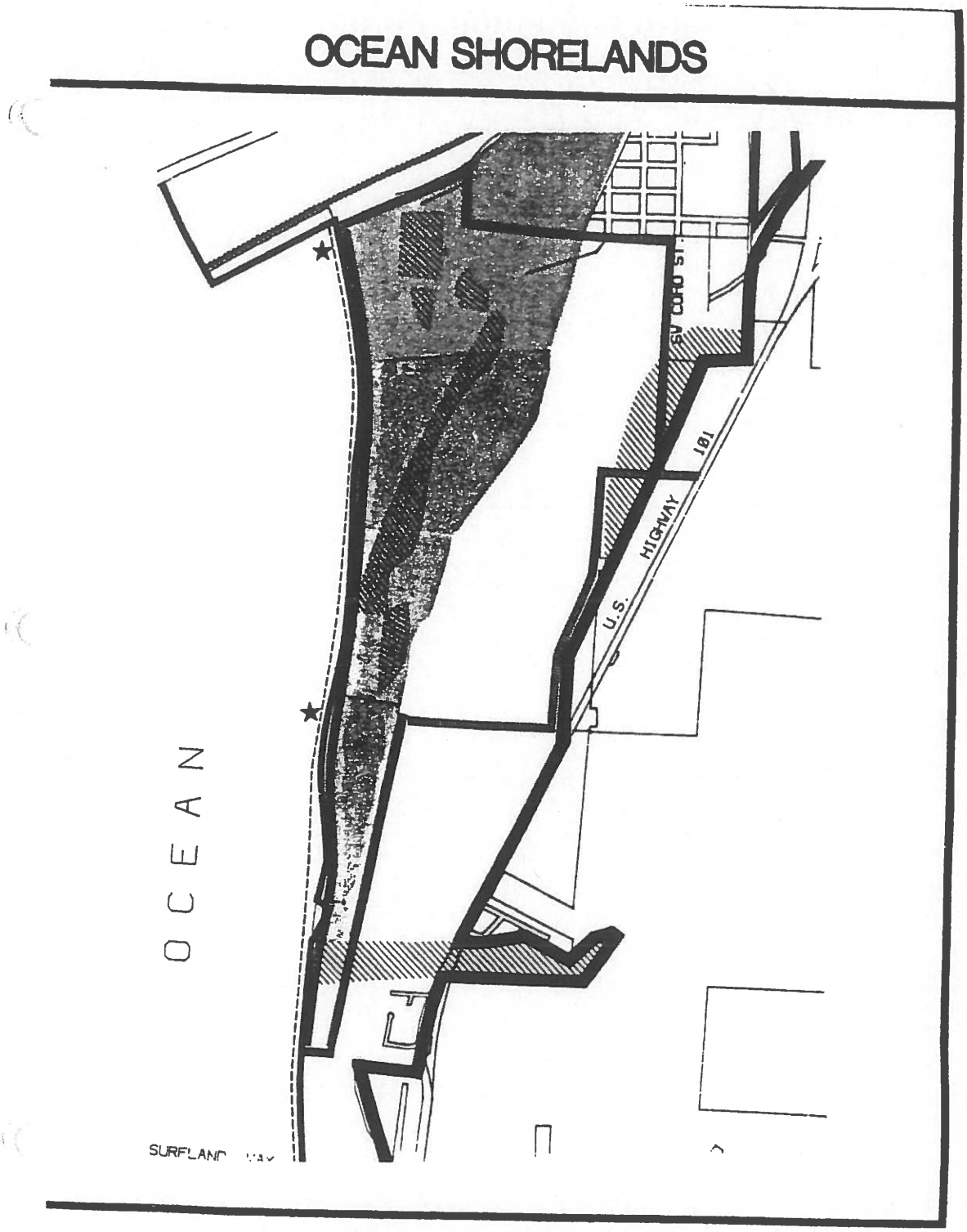
Page 50. CITY OF NEWPORT COMPREHENSIVE PLAN: Natural Features.



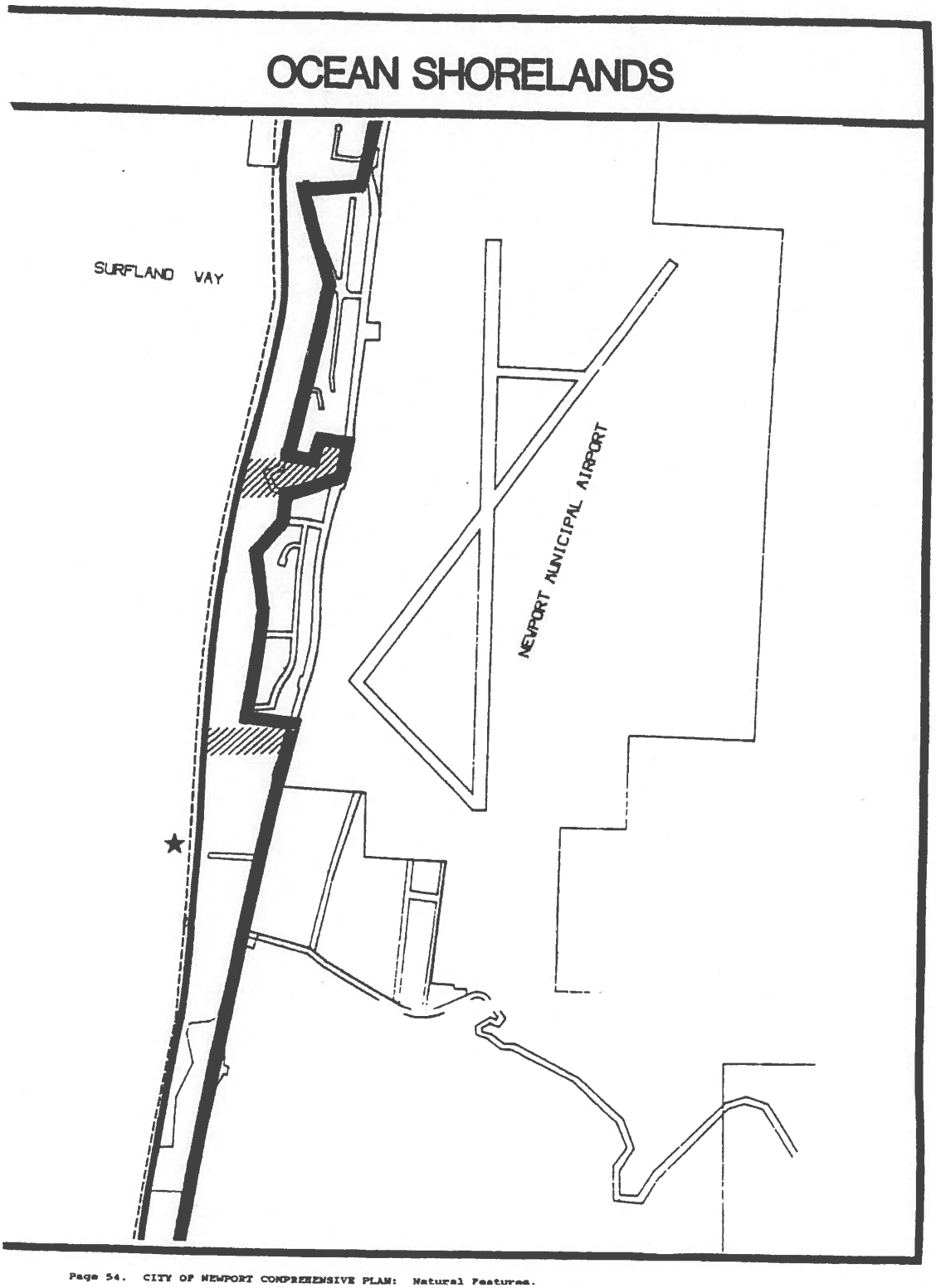
Page 51. CITY OF NEWPORT COMPREHENSIVE PLAN: Natural Features.



Page 52. CITY OF NEWPORT COMPREHENSIVE PLAN: Natural Features.



Page 53. CITY OF NEWPORT COMPREHENSIVE PLAN: Natural Features.



Page 54. CITY OF NEWPORT COMPREHENSIVE PLAN: Natural Features.

(Staff comments, in *italics,* are provided for context and are not a part of the code.)

CHAPTER 14.46 TSUNAMI HAZARDS OVERLAY ZONE

14.46.010 Purpose

The purpose of this section is to promote the public health, safety, and general welfare to minimize risks to essential facilities, and special occupancy structures serving high risk populations within a tsunami inundation area, consistent with Statewide Planning Goals 7 and 18, and the Natural Features Section of the Newport Comprehensive Plan.

Staff: The purpose section is more abbreviated than what the Commission reviewed at its August 26th work session, with cross references to the appropriate Statewide Planning Goals and Natural Features Section of the Comprehensive Plan, which provide context and policy direction for development of the regulations.

14.46.020 Definitions

As used in this chapter:

A. 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. Such facilities are subject to a high hazard (Group H) occupancy classification by the Oregon Structural Specialty Code.

B. Tsunami inundation area means those portions of the City of Newport within the "XXL" tsunami inundation area boundary, as depicted on the maps titled "Local Source (Cascadia Subduction Zone) Tsunami Inundation Map Newport North, Oregon" and "Local Source (Cascadia Subduction Zone) Tsunami Inundation Map Newport South, Oregon" produced by the Oregon Department of Geology and Mineral Industries (DOGAMI), dated February 8, 2013.

C. Vertical evacuation structure means a stand-alone structure, portion of a building or constructed earthen mound designed for vertical evacuation from a tsunami that is accessible to evacuees, has sufficient height to place evacuees above the design level of tsunami

inundation, and is designed and constructed with the strength and resiliency needed to withstand the effects of tsunami waves.

Staff: This is a truncated version of the4 list of definitions the Commission previously reviewed. Definitions for Child Care Facility, Day Care Facility, and Substantial Improvement already exist in NMC 14.01.020, Definitions, so they need not be replicated in this chapter. Definitions for Essential Facility, School, and Special Occupancy Structures are not needed as the uses that fall within these definitions are addressed directly in the code.

14.46.030 Overlay Zone Established

A Tsunami Hazards Overlay Zone District shall be indicated on the Zoning Map of the City of Newport with the letters of THOZ, the boundaries of which encompass and conform to the tsunami inundation area.

Staff: This is required language to establish an overlay zone and tie it to the City's official zoning map.

14.46.040 Relationship to Underlying Zone Districts

Except for the prohibited uses set forth in section 14.46.050, all uses permitted pursuant to the provisions of the underlying zone may be permitted, subject to the additional requirements and limitations of this chapter.

Staff: This section is as presented at the August 26, 2019 work session.

14.46.050 Prohibited Uses

A. Unless authorized in accordance with section 14.46.060, the following uses are prohibited in the Tsunami Hazard Overlay Zone:

1. Hospitals and other medical facilities having surgery and emergency treatment areas;

2. Fire and police stations;

3. Emergency vehicle shelters and garages;

4. Structures and equipment in emergency preparedness centers;

5. Standby power generating equipment for essential facilities;

6. Structures and equipment in government communication centers and other facilities required for emergency response;

7. Medical, assisted, and senior living facilities with resident incapacitated patients. This includes residential facilities, but not residential care homes, as defined in ORS 443.400;

8. Jails and detention facilities;

9. Day care facilities;

10. Hazardous facilities; and

11. Tanks or other structures containing, housing or supporting water or fire- suppression materials or equipment required for the protection of uses listed in this section.

B. Unless authorized in accordance with section 14.46.060, the following uses are prohibited in the portions of the Tsunami Hazard Overlay Zone subject to inundation from a Small (S) or Medium (M) magnitude local source tsunami event:

1. Buildings with a capacity greater than 250 individuals for every public, private or parochial school through secondary level;

2. Child care facilities;

3. Buildings for colleges or adult education schools with a capacity greater than 500 persons; and

4. Tanks or other structures containing, housing or supporting water or fire- suppression materials or equipment required for the protection of uses listed in this sub-section.

C. The provisions of this section do not apply to water-dependent and water-related facilities, including but not limited to docks, wharves, piers and marinas.

Staff: The list of uses is very similar to what the Commission reviewed at the August 26, 2019 work session. References to assisted and senior living were added and the number of incapacitated residents staying at such facilities, including medical facilities, has been removed. A carve out is included for residential care homes, which serve 5 or fewer individuals in a residential setting. Residential facilities are included. These can be licensed for up to 15 individuals. Both terms are defined in NMC 14.01.020, Definitions. Note that not all residential care homes or facilities house incapacitated individuals. The threshold between a child care facility and day care facility is 12 children.

14.46.060 Use Exceptions

A use listed in section 14.46.050 may be permitted upon authorization of a Use Exception issued in accordance with a Type III decision-making procedure as outlined in Chapter 14.52, Procedural Requirements, provided the following requirements are satisfied:

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. Uses otherwise prohibited, such as child or day care facilities, are allowed when accessory to a permitted use, provided a plan is submitted outlining the steps that will be taken to evacuate occupants to designated assembly areas.

D. Other uses prohibited section 14.46.050 may be permitted upon the following findings:

1. There are no reasonable, lower-risk alternative sites available for the proposed use; and

2. Adequate evacuation measures will be provided such that life safety risk to building occupants is minimized; and

3. The structures will be designed and constructed in a manner to minimize the risk of structural failure during the design earthquake and tsunami event.

Staff: This section is as presented at the August 26, 2019 work session.

14.46.070 Vertical Evacuation Structures

All vertical evacuation structures, irrespective of their height, shall adhere to the provisions set forth in NMC 14.10.020(D)(1-4).

Staff: This section is as presented at the August 26, 2019 work session.

14.46.080 Evacuation Route Improvement Requirements

All new, or substantial improvements to, multifamily residential, commercial, industrial or institutional development on existing lots and parcels and land divisions in the Tsunami Hazard Overlay Zone shall:

A. Provide all-weather pedestrian access from the building(s) to adjacent public rights-of-way or City designated evacuation routes; and

B. Install wayfinding signage, in a format and location approved by the City, indicating the direction and location of the closest evacuation routes; and

C. Post emergency evacuation information in public areas, meeting rooms, or common areas, alerting residents, visitors, and employees to the tsunami threat. Such information shall include a map indicating the direction and location of the closest evacuation route.

Staff: This section has been revised to list the types of route improvements the City can reasonably expect to require at this time.

MINUTES
City of Newport Planning Commission
Work Session
Newport City Hall Conference Room A
August 26, 2019
6:00 p.m.

Planning Commissioners Present: Jim Patrick, Lee Hardy, Bob Berman, Jim Hanselman, and Mike Franklin.

Planning Commissioners by Phone: Bill Branigan

PC Citizens Advisory Committee Members Present: Dustin Capri

Public Members Present: Madeline Shannon, and Mona Linstromberg.

City Staff Present: Community Development Director (CDD) Derrick Tokos; Associate Planner, Rachel Cotton; and Executive Assistant, Sherri Marineau.

1. **Call to Order.** Chair Patrick called the Planning Commission work session to order at 6:00 p.m.

2. **Unfinished Business.**

A. **Continued Review of the Framework for a New Tsunami Hazard Overlay Zone.** Cotton reviewed the changes that had happened from the previous Planning Commission meeting discussion. She asked for the Commission's thoughts on the Hazard Acknowledgement and Disclosure Statement and if it should be included. Hanselman questioned what the benefit to the City would be. Cotton explained it was an educational tool. Hanselman thought there were better ways to educate without having to sign a document. Hardy thought the disclosure was important and should be acknowledged. Hanselman thought it should be acknowledged by all residents. After a discussion, Cotton noted that apart from Hanselman, the Commission was in general agreement to include the statement.

Cotton reviewed the tsunami evacuation facilities improvement plan. Berman thought the plan should be incorporated into the Transportation System Plan (TSP) and Park System Master Plan (PSMP). Cotton explained that the PSMP was essentially done and TSP was already scoped and didn't necessary include evacuation. Tokos noted that there were a few projects in TSP the City needed to make sure was vetted enough in order to engage new development projects to incorporate trails or signage for evacuations. Berman was concerned that a large portion of the pages would be duplicates on each of the plans. Tokos explained they would create something like a technical memo that was 6-8 pages that explained what the projects were and the rationale. Cotton asked if the Commission thought it was useful to establish technical projects connected to "Beat the Wave". The Commission was in general agreement that it should.

Cotton reviewed the DLCD Model Code changes. She explained that she added back in the Evacuation Policy Concepts Section #3. Capri asked what the lighting conditions were. Cotton explained this section was about how the signs would be lit at night and noted she could share the standards on this with the Commission. Capri thought this was vague in the code. Cotton would clarify this.

Cotton explained that the language for the rationale for the policies related to reducing development risk in high tsunami risk areas. This was meant to cover both XXL and M general policies. Cotton reported that the Newport High School had a capacity of 662 students. Berman asked why in Section 8.viii. "incapacitated" needed to be included. He felt the distinction wasn't necessary. Hanselman thought medical didn't cover senior living and assisted living facilities. He thought the term "daycare" should be mentioned in this list. Tokos said the reason it wasn't included was that "daycare" picked up smaller facilities while the term "child care" was broader. Hanselman thought it should be included. Berman reminded that there were elderly daycare facilities and felt it should be included. Capri suggested adding a line item for any facility with incapacitated persons. Tokos suggested it say assisted living or nursing homes. Berman thought the number for medical facilities should be changed from 50 down to 20, or taken out. The Commission was in general

agreement to take out the number for medical facilities. Tokos suggested looking into residential facilities and how they tie back to State licensing for group homes to see how to weave them into the code. Cotton noted there seemed to be a consensus to include these in the XXL. Franklin asked if temporary structures should be included in the special occupancy structures. Cotton explained that if they were included in this section it would limit event locations for things such as the Seafood and Wine Festival.

Cotton reviewed the evacuation route improvement requirements next. Berman asked if there were any other categories other than low density residential. Cotton said there wasn't. Branigan asked what the definition of "substantial improvement" was. Cotton explained it was anything 50 percent or more of the real market value. Cotton asked the Commission if they wanted to include Section 6.a.iii. A discussion ensued regarding what the posting requirements should be. Tokos thought it should be geared to a well thought out plan centered around lodging. Capri was concerned that the code referenced the TSP and TEFIP when they weren't in place yet. Cotton said until they were in place, the City wouldn't have to do the requirements, and placed importance on figuring out how extensive the TEFIP needed to be. Cotton said they could leave the section out and wait until the TEFIP was adopted. Tokos suggested adding a statement that these provisions did not apply to special events. Cotton noted the items that were taken out for the evacuation route improvements in Section 6.c. Capri thought wayfinding was important. Berman thought there needed to be consistency. Cotton explained that the design standards would address this.

Cotton covered the vertical evacuation structures next. Patrick noted that the numbers in this section jumped from 7 to 9 and 8 had been left out. Cotton would fix the numbering. Tokos reviewed the next steps. He thought there would be another work session meeting with the Commission and suggested Meg Reed with the DLCD be present to answer questions.

3. **New Business.**

A. **Update on the Short-Term Rental Ordinance Implementation.** Tokos reviewed the update on the short-term rental (STR) implementation. He noted that the work group had already met on August 20th. The materials given to the Commission were the same that was shared with the work group. LodgingRevs had been hired to manage a 24/7 hotline for complaints. Staff training would be held on Aug 29th for the hotline. There would be a community roll out once the staff training was done. The City would order signs with the hotline information for all the rentals to post. Tokos noted that there was a cushion in the LodgingRevs contract that would help pay for the signs.

Tokos reported there had been an initial advertising sweep for unlicensed STRs and the Community Service Officer (CSO) would be working on notifying them. Berman asked that the CSO be educated on the occupancy limits rules. Tokos covered the number of STR licenses that had renewed, the incomplete renewals, and the units that didn't renew. The STRs that didn't renew would have to submit new applications. Because they were nonconforming they had a right to submit a new license application.

Tokos noted that the STR waitlist wouldn't be touched until after November 1st when the deadline for the applications in process was over. The STR Work Group would meet in late October/early November again. There would be a focus on the centralized complaint system at this meeting. Hanselman asked if the applications that were incomplete were because the applicants didn't supply the materials requested from the letter. Tokos reported it was. He reminded that the ordinance stated that applicants would have 30 days from August 15th to provide the additional information for their incomplete applications.

Adjourned at 6:59 p.m.

Respectfully submitted,

Sherri Marineau

Sherri Marineau,
Executive Assistant

CITY OF NEWPORT
RESOLUTION NO. 3725

A Resolution Adopting the City of Newport Representation in the Updates to the Lincoln County Multi-Jurisdictional Natural Hazards Mitigation Plan

WHEREAS, the City of Newport recognizes the threat that natural hazards pose to people, property and infrastructure within our community; and

WHEREAS, undertaking hazard mitigation actions will reduce the potential for harm to people, property and infrastructure from future hazard occurrences; and

WHEREAS, an adopted Natural Hazards Mitigation Plan is required as a condition of future funding for mitigation projects under multiple FEMA pre- and post-disaster mitigation grant programs; and

WHEREAS, the City of Newport has fully participated in the FEMA prescribed mitigation planning process to prepare the *Lincoln County, Multi-Jurisdictional Natural Hazard Mitigation Plan*, which has established a comprehensive, coordinated planning process to eliminate or minimize these vulnerabilities; and

WHEREAS, the City of Newport has identified natural hazard risks and prioritized a number of proposed actions and programs needed to mitigate the vulnerabilities of the City of Newport to the impacts of future disasters within the *Lincoln County, Multi-Jurisdictional Natural Hazard Mitigation Plan*; and

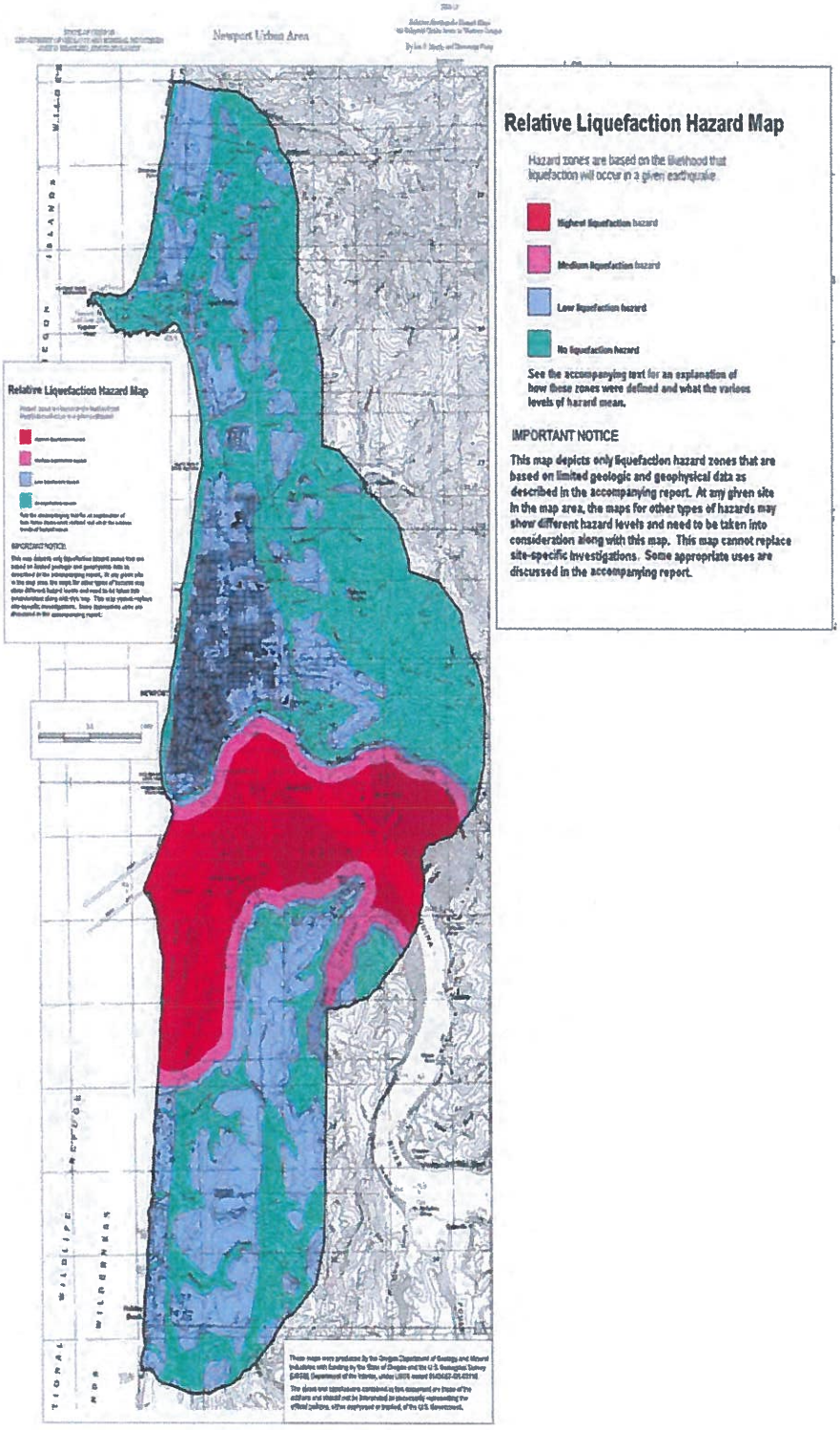
WHEREAS, these proposed projects and programs have been incorporated into the *Lincoln County, Multi-Jurisdictional Natural Hazard Mitigation Plan* that has been prepared and promulgated for consideration and implementation by the cities of Lincoln County; and

WHEREAS, the Oregon Office of Emergency Management and Federal Emergency Management Agency, Region X officials have reviewed the *Lincoln County, Multi-Jurisdictional Natural Hazard Mitigation Plan* and pre-approved it (dated, August 19, 2015) contingent upon this official adoption of the participating governments and entities;

WHEREAS, the NHMP is comprised of four main elements: Basic Plan, Hazard Annex, City Addenda, and Mitigation Resources, collectively referred to herein as the NHMP; and

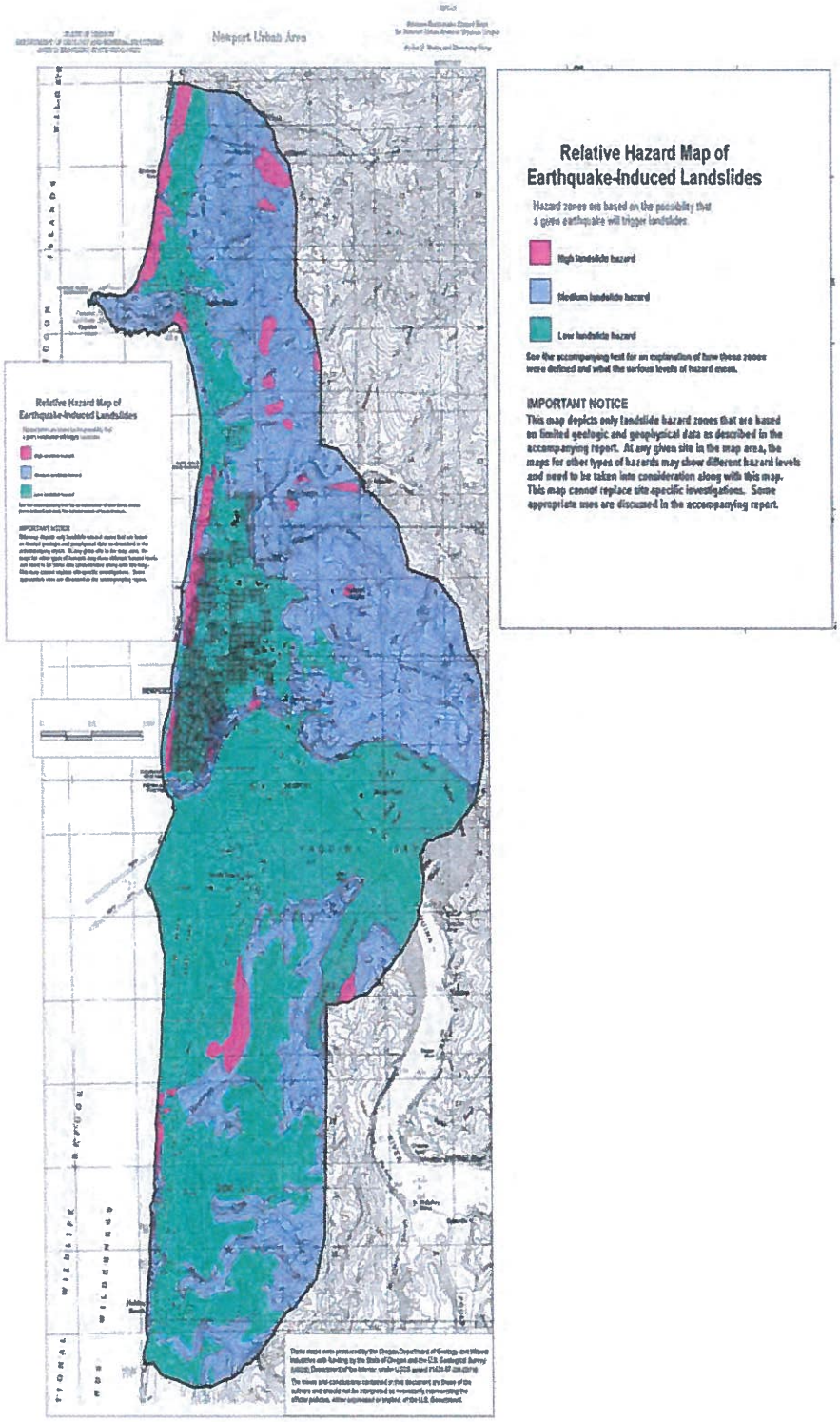
WHEREAS, the NHMP is in an on-going cycle of development and revision to improve its effectiveness; and

Figure NA-5 Relative Liquefaction Hazard Map



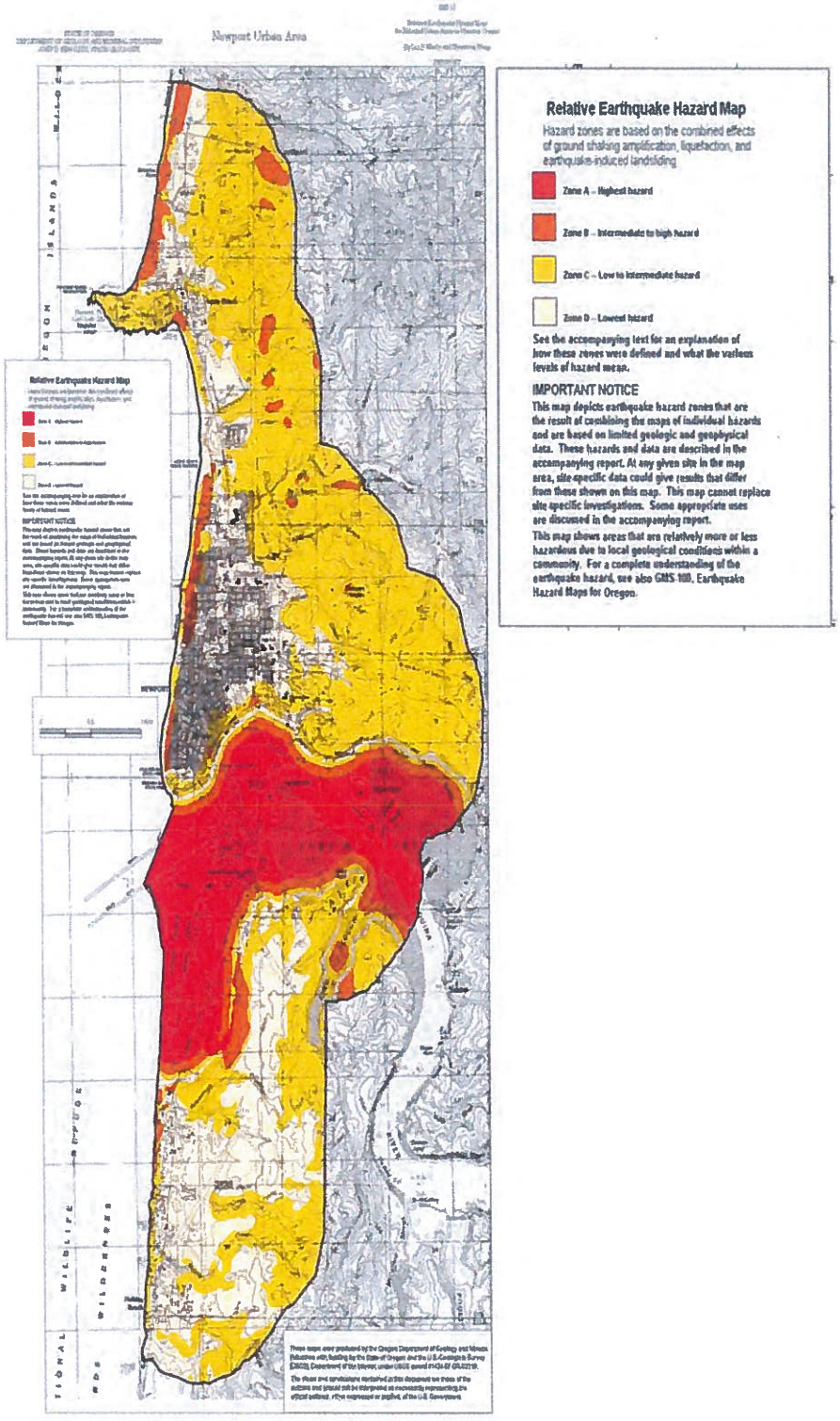
Source: DOGAMI

Figure NA-6 Earthquake Induced Landslides

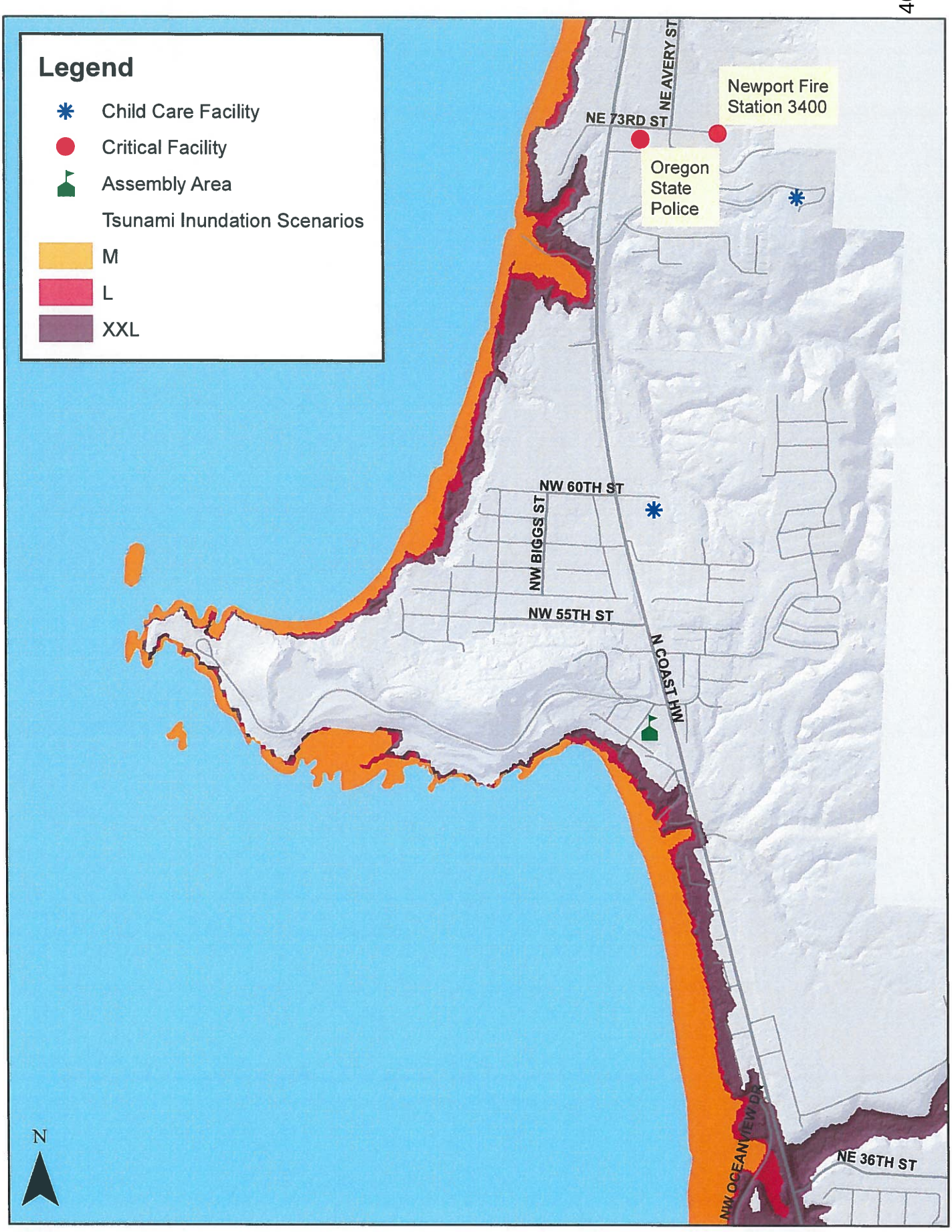


Source: DOGAMI

Figure NA-7 Relative Earthquake Hazard



Source: DOGAMI

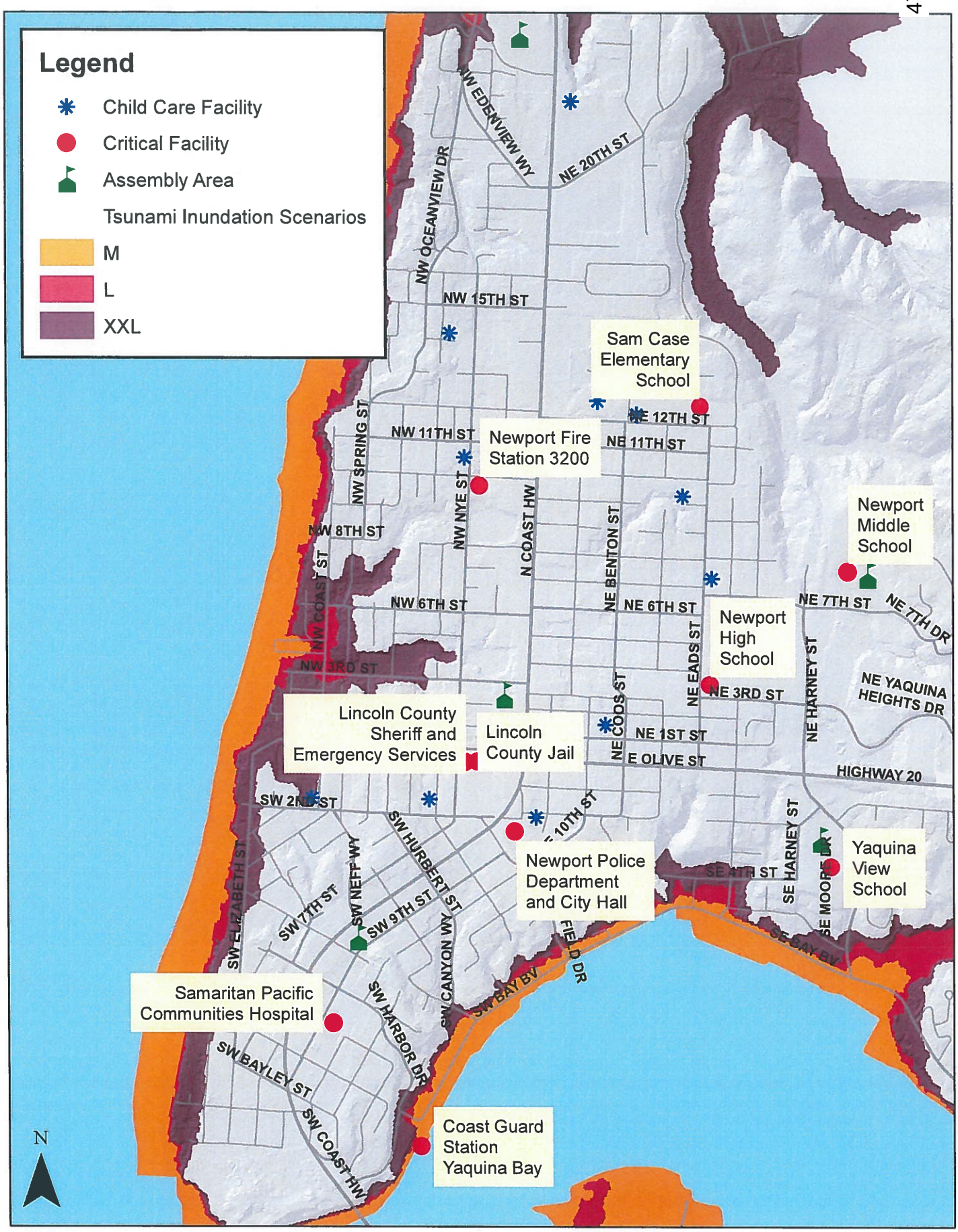


City of Newport
Community Development Department
169 SW Coast Highway
Newport, OR 97365
Phone:1.541.574.0629
Fax:1.541.574.0644

North Newport
Critical Facilities and Tsunami Inundation Scenarios

Image Taken July 2018
4-inch, 4-band Digital Orthophotos
Quantum Spatial, Inc. Corvallis, OR

0 0.25 0.5 Miles

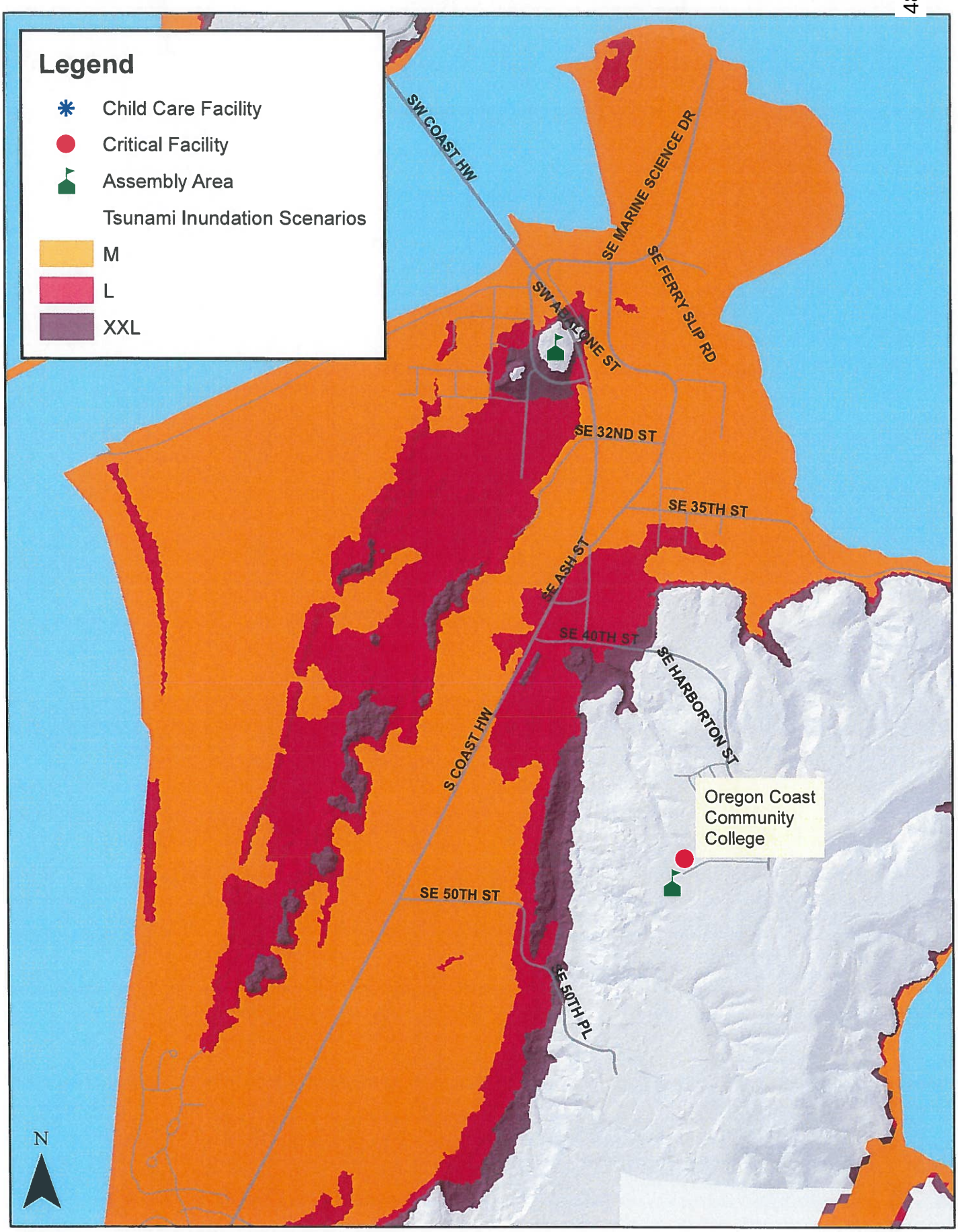


City of Newport
Community Development Department
169 SW Coast Highway
Newport, OR 97365
Phone:1.541.574.0629
Fax:1.541.574.0644

Central Newport
Critical Facilities and Tsunami Inundation Scenarios

Image Taken July 2018
4-inch, 4-band Digital Orthophotos
Quantum Spatial, Inc. Corvallis, OR

0 0.25 0.5 Miles

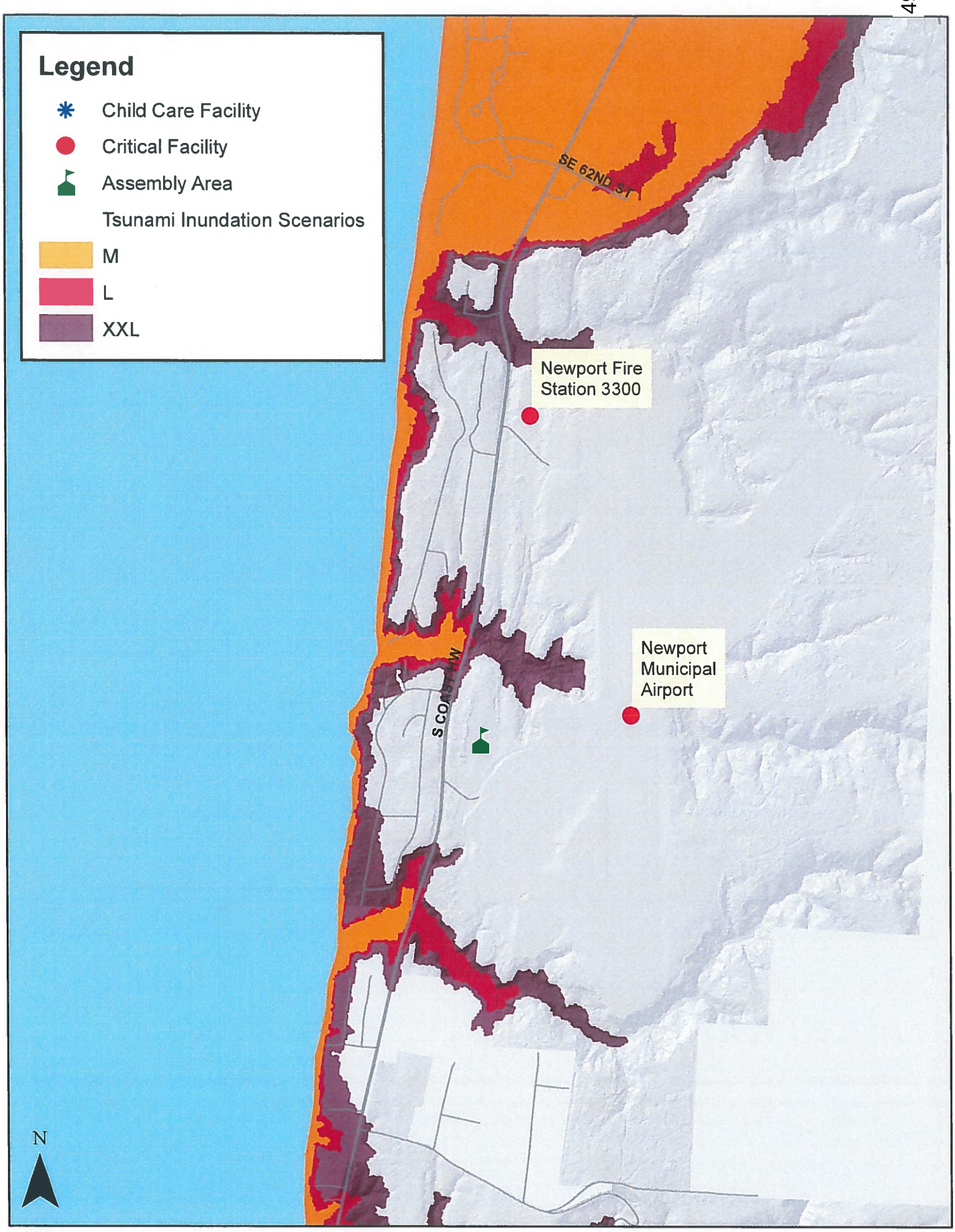


City of Newport
Community Development Department
169 SW Coast Highway
Newport, OR 97365
Phone:1.541.574.0629
Fax:1.541.574.0644

South Beach
Critical Facilities and Tsunami Inundation Scenarios

Image Taken July 2018
4-inch, 4-band Digital Orthophotos
Quantum Spatial, Inc. Corvallis, OR

0 0.25 0.5 Miles



City of Newport
Community Development Department
169 SW Coast Highway
Newport, OR 97365
Phone:1.541.574.0629
Fax:1.541.574.0644

Newport Airport Neighborhood
Critical Facilities and Tsunami Inundation Scenarios

Image Taken July 2018
4-inch, 4-band Digital Orthophotos
Quantum Spatial, Inc. Corvallis, OR

0 0.25 0.5 Miles

day care during religious functions shall be classified as part of the primary occupancy.

305.2.2 Five or fewer children. A facility having five or fewer children receiving such day care shall be classified as part of the primary occupancy.

305.2.3 Five or fewer children in a dwelling unit. A facility such as the above within a *dwelling unit* and having five or fewer children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the *Residential Code*.

SECTION 306
FACTORY GROUP F

306.1 Factory Industrial Group F. Factory Industrial Group F occupancy includes, among others, the use of a building or structure, or a portion thereof, for assembling, disassembling, fabricating, finishing, manufacturing, packaging, repair or processing operations that are not classified as a Group H hazardous or Group S storage occupancy.

306.2 Moderate-hazard factory industrial, Group F-1. Factory industrial uses that are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:

Aircraft (manufacturing, not to include repair)
Appliances
Athletic equipment
Automobiles and other motor vehicles
Bakeries
Beverages: over 16-percent alcohol content
Bicycles
Boats
Brooms or brushes
Business machines
Cameras and photo equipment
Canvas or similar fabric
Carpets and rugs (includes cleaning)
Clothing
Construction and agricultural machinery
Disinfectants
Dry cleaning and dyeing
Electric generation plants
Electronics
Engines (including rebuilding)
Food processing establishments and commercial kitchens not associated with restaurants, cafeterias and similar dining facilities more than 2,500 square feet (232 m^2) in area.
Furniture
Hemp products
Jute products
Laundries
Leather products
Machinery
Metals
Millwork (sash and door)
Motion pictures and television filming (without spectators)
Musical instruments
Optical goods
Paper mills or products
Photographic film
Plastic products
Printing or publishing
Recreational vehicles
Refuse incineration
Shoes
Soaps and detergents
Textiles
Tobacco
Trailers
Upholstering
Wood; distillation
Woodworking (cabinet)

306.3 Low-hazard factory industrial, Group F-2. Factory industrial uses that involve the fabrication or manufacturing of noncombustible materials that during finishing, packing or processing do not involve a significant fire hazard shall be classified as F-2 occupancies and shall include, but not be limited to, the following:

Beverages: up to and including 16-percent alcohol content
Brick and masonry
Ceramic products
Foundries
Glass products
Gypsum
Ice
Metal products (fabrication and assembly)
Wood barrel and bottled wine aging facilities in *wineries*

SECTION 307
HIGH-HAZARD GROUP H

307.1 High-hazard Group H. High-hazard Group H occupancy includes, among others, the use of a building or structure, or a portion thereof, that involves the manufacturing, processing, generation or storage of materials that constitute a physical or health hazard in quantities in excess of those allowed in *control areas* complying with Section 414, based on the maximum allowable quantity limits for *control areas* set forth in Tables 307.1(1) and 307.1(2). Hazardous occupancies are classified in Groups H-1, H-2, H-3, H-4 and H-5 and shall be in accordance with this section and the requirements of Section 415. *Hazardous materials* stored, or used on top of roofs or canopies, shall comply with this code.

307.1.1 Uses other than Group H. An occupancy that stores, uses or handles *hazardous materials* as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.

1. Buildings and structures occupied for the application of flammable finishes, provided that such buildings or areas conform to the requirements of Section 416.

2. Wholesale and retail sales and storage of flammable and combustible liquids in mercantile occupancies conforming to this code.
3. Closed piping system containing flammable or combustible liquids or gases utilized for the operation of machinery or equipment.
4. Cleaning establishments that utilize combustible liquid solvents having a flash point of 140°F (60°C) or higher in closed systems employing equipment *listed* by an *approved* testing agency, provided that this occupancy is separated from all other areas of the building by 1-hour *fire barriers* constructed in accordance with Section 707 or 1-hour *horizontal assemblies* constructed in accordance with Section 711, or both.
5. Cleaning establishments that utilize a liquid solvent having a flash point at or above 200°F (93°C).
6. Liquor stores and distributors without bulk storage.
7. Refrigeration systems.
8. The storage or utilization of materials for agricultural purposes on the premises.
9. *Stationary storage battery systems* installed in accordance with this code and the *Mechanical Code*.
10. Corrosive personal or household products in their original packaging used in retail display.
11. Commonly used corrosive building materials.
12. Buildings and structures occupied for aerosol product storage shall be classified as Group S-1, provided that such buildings conform to the requirements of this code.
13. Display and storage of nonflammable solid and nonflammable or noncombustible liquid *hazardous materials* in quantities not exceeding the maximum allowable quantity per *control area* in Group M or S occupancies complying with Section 414.2.5.
14. The storage of black powder, smokeless propellant and small arms primers in Groups M and R-3 and special industrial explosive devices in Groups B, F, M and S, provided such storage conforms to the quantity limits and requirements prescribed in this code.

TABLE 307.1(1)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	NA	H-2	See Note q	NA	NA	See Note q	NA	NA	See Note q	NA
Combustible fiber[q]	Loose Baled[o]	H-3	(100) (1,000)	NA	NA	(100) (1,000)	NA	NA	(20) (200)	NA
Combustible liquid[c, i]	II IIIA IIIB	H-2 or H-3 H-2 or H-3 NA	NA	120[d, e] 330[d, e] 13,200[e, f]	NA	NA	120[d] 330[d] 13,200[f]	NA	NA	30[d] 80[d] 3,300[f]
Cryogenic flammable	NA	H-2	NA	45[d]	NA	NA	45[d]	NA	NA	10[d]
Cryogenic inert	NA	NA	NA	NA	NL	NA	NA	NL	NA	NA
Cryogenic oxidizing	NA	H-3	NA	45[d]	NA	NA	45[d]	NA	NA	10[d]
Explosives	Division 1.1 Division 1.2 Division 1.3 Division 1.4 Division 1.4G Division 1.5 Division 1.6	H-1 H-1 H-1 or H-2 H-3 H-3 H-1 H-1	1[e, g] 1[e, g] 5[e, g] 50[e, g] 125[e, l] 1[e, g] 1[e, g]	(1)[e, g] (1)[e, g] (5)[e, g] (50)[e, g] NA (1)[e, g] NA	NA	0.25[g] 0.25[g] 1[g] 50[g] NA 0.25[g] NA	(0.25)[g] (0.25)[g] (1)[g] (50)[g] NA (0.25)[g] NA	NA	0.25[g] 0.25[g] 1[g] NA NA 0.25[g] NA	(0.25)[g] (0.25)[g] (1)[g] NA NA (0.25)[g] NA
Flammable gas	Gaseous Liquefied	H-2	NA	NA (150)[d, e]	1,000[d, e] NA	NA	NA (150)[d, e]	1,000[d, e] NA	NA	NA
Flammable liquid[c]	IA IB and IC	H-2 or H-3	NA	30[d, e] 120[d, e]	NA	NA	30[d] 120[d]	NA	NA	10[d] 30[d]
Flammable liquid, combination (IA, IB, IC)	NA	H-2 or H-3	NA	120[d, e, h]	NA	NA	120[d, h]	NA	NA	30[d, h]

(continued)

TABLE 307.1(1)—continued
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD[a, j, m, n, p]

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas cubic feet at NTP	Solid pounds (cubic feet)	Liquid gallons (pounds)
Flammable solid	NA	H-3	125[d, e]	NA	NA	125[d]	NA	NA	25[d]	NA
Inert gas	Gaseous Liquefied	NA NA	NA NA	NA NA	NL NL	NA NA	NA NA	NL NL	NA NA	NA NA
Organic peroxide	UD I II III IV V	H-1 H-2 H-3 H-3 NA NA	1[e, g] 5[d, e] 50[d, e] 125[d, e] NL NL	(1)[e, g] (5)[d, e] (50)[d, e] (125)[d, e] NL NL	NA	0.25[g] 1[d] 50[d] 125[d] NL NL	(0.25)[g] (1)[d] (50)[d] (125)[d] NL NL	NA	0.25[g] 1[d] 10[d] 25[d] NL NL	(0.25)[g] (1)[d] (10)[d] (25)[d] NL NL
Oxidizer	4 3[k] 2 1	H-1 H-2 or H-3 H-3 NA	1[g] 10[d, e] 250[d, e] 4,000[e, f]	(1)[e, g] (10)[d, e] (250)[d, e] (4,000)[e, f]	NA	0.25[g] 2[d] 250[d] 4,000[f]	(0.25)[g] (2)[d] (250)[d] (4,000)[f]	NA	0.25[g] 2[d] 50[d] 1,000[f]	(0.25)[g] (2)[d] (50)[d] (1,000)[f]
Oxidizing gas	Gaseous Liquefied	H-3	NA	NA (150)[d, e]	1,500[d, e] NA	NA	NA (150)[d, e]	1,500[d, e] NA	NA	NA
Pyrophoric	NA	H-2	4[e, g]	(4)[e, g]	50[e, g]	1[g]	(1)[g]	10[e, g]	0	0
Unstable (reactive)	4 3 2 1	H-1 H-1 or H-2 H-3 NA	1[e, g] 5[d, e] 50[d, e] NL	(1)[e, g] (5)[d, e] (50)[d, e] NL	10[e, g] 50[d, e] 750[d, e] NL	0.25[g] 1[d] 50[d] NL	(0.25)[g] (1)[d] (50)[d] NL	2[e, g] 10[d, e] 750[d, e] NL	0.25[g] 1[d] 10[d] NL	(0.25)[g] (1)[d] (10)[d] NL
Water reactive	3 2 1	H-2 H-3 NA	5[d, e] 50[d, e] NL	(5)[d, e] (50)[d, e] NL	NA	5[d] 50[d] NL	(5)[d] (50)[d] NL	NA	1[d] 10[d] NL	(1)[d] (10)[d] NL

For SI: 1 cubic foot = 0.028 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

NL = Not Limited; NA = Not Applicable; UD = Unclassified Detonable.

a. For use of control areas, see Section 414.2.

b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

c. The quantities of alcoholic beverages in retail and wholesale sales occupancies shall not be limited provided the liquids are packaged in individual containers not exceeding 1.3 gallons. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

e. Maximum allowable quantities shall be increased 100 percent when stored in approved storage cabinets, day boxes, gas cabinets, gas rooms or exhausted enclosures or in listed safety cans in accordance with Section 414.18. Where Note d also applies, the increase for both notes shall be applied accumulatively.

f. Quantities shall not be limited in a building equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

g. Allowed only in buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1.

h. Containing not more than the maximum allowable quantity per control area of Class IA, IB or IC flammable liquids.

i. The maximum allowable quantity shall not apply to fuel oil storage complying with Section 2802.

j. Quantities in parentheses indicate quantity units in parentheses at the head of each column.

k. A maximum quantity of 220 pounds of solid or 22 gallons of liquid Class 3 oxidizers is allowed when such materials are necessary for maintenance purposes, operation or sanitation of equipment when the storage containers and the manner of storage are approved.

l. Net weight of the pyrotechnic composition of the fireworks. Where the net weight of the pyrotechnic composition of the fireworks is not known, 25 percent of the gross weight of the fireworks, including packaging, shall be used.

m. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 414.1.5.1.

n. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).

o. Densely packed baled cotton that complies with the packing requirements of ISO 8115 shall not be included in this material class.

p. The following shall not be included in determining the maximum allowable quantities:
   1. Liquid or gaseous fuel in fuel tanks on vehicles.
   2. Liquid or gaseous fuel in fuel tanks on motorized equipment operated in accordance with this code.
   3. Gaseous fuels in piping systems and fixed appliances regulated by the *Fuel Gas Code*.
   4. Liquid fuels in piping systems and fixed appliances regulated by the *Mechanical Code*.

q. Where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.

TABLE 307.1(2)
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A HEALTH HAZARD[a, c, f, h, i]

MATERIAL	STORAGE[b]			USE-CLOSED SYSTEMS[b]			USE-OPEN SYSTEMS[b]	
	Solid pounds[d, e]	Liquid gallons (pounds)[d, e]	Gas cubic feet at NTP (pounds)[d]	Solid pounds[d]	Liquid gallons (pounds)[d]	Gas cubic feet at NTP (pounds)[d]	Solid pounds[d]	Liquid gallons (pounds)[d]
Corrosives	5,000	500	Gaseous 810[e] Liquefied (150)	5,000	500	Gaseous 810[e] Liquefied (150)	1,000	100
Highly Toxic	10	(10)	Gaseous 20[g] Liquefied (4)[g]	10	(10)	Gaseous 20[g] Liquefied (4)[g]	3	(3)
Toxic	500	(500)	Gaseous 810[e] Liquefied (150)[e]	500	(500)	Gaseous 810[e] Liquefied (150)[e]	125	(125)

For SI: 1 cubic foot = 0.028 m^3, 1 pound = 0.454 kg, 1 gallon = 3.785 L.

a. For use of control areas, see Section 414.2.

b. The aggregate quantity in use and storage shall not exceed the quantity listed for storage.

c. In retail and wholesale sales occupancies, the quantities of medicines, foodstuffs or consumer products, and cosmetics containing not more than 50 percent by volume of water-miscible liquids and with the remainder of the solutions not being flammable, shall not be limited, provided that such materials are packaged in individual containers not exceeding 1.3 gallons.

d. Maximum allowable quantities shall be increased 100 percent in buildings equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1. Where Note e also applies, the increase for both notes shall be applied accumulatively.

e. Maximum allowable quantities shall be increased 100 percent where stored in approved storage cabinets, gas cabinets or exhausted enclosures as specified in this code. Where Note d also applies, the increase for both notes shall be applied accumulatively.

f. For storage and display quantities in Group M and storage quantities in Group S occupancies complying with Section 414.2.5, see Tables 414.2.5(1) and 414.2.5(2).

g. Allowed only where stored in approved exhausted gas cabinets or exhausted enclosures as specified in this code.

h. Quantities in parentheses indicate quantity units in parentheses at the head of each column.

i. For gallons of liquids, divide the amount in pounds by 10 in accordance with Section 414.1.5.1.

15. *Stationary fuel cell power systems* installed in accordance with this code and the *Mechanical Code*.
16. *Capacitor energy storage systems* in accordance with this code.
17. Group B *higher education laboratory* occupancies complying with Section 428.

307.2 Hazardous materials. *Hazardous materials* in any quantity shall conform to the requirements of this code, including Section 414.

307.2.1 Storage of Class 1.4G (Class C, Common) fireworks. A permanent building used for the temporary storage of 1.4G (Class C) fireworks, as authorized by a retail sales permit under ORS 480.127, may be classified as either a Group M, Group S-1 or a detached Group U occupancy, provided:

1. The total amount of 1.4G retail fireworks is less than 5,000 pounds (2268 kg) gross weight; or
2. Where the building is protected by an *approved automatic sprinkler system* and the amount of 1.4G retail fireworks is less than 10,000 pounds (4536 kg) gross weight.

307.3 High-hazard Group H-1. Buildings and structures containing materials that pose a detonation hazard shall be classified as Group H-1. Such materials shall include, but not be limited to, the following:

Detonable pyrophoric materials

Explosives:

Division 1.1
Division 1.2
Division 1.3
Division 1.4
Division 1.5
Division 1.6

Organic peroxides, unclassified detonable

Oxidizers, Class 4

Unstable (reactive) materials, Class 3 detonable and Class 4

307.3.1 Occupancies containing explosives not classified as H-1. The following occupancies containing explosive materials shall be classified as follows:

1. Division 1.3 explosive materials that are used and maintained in a form where either confinement or configuration will not elevate the hazard from a mass fire to mass explosion hazard shall be allowed in H-2 occupancies.
2. Articles, including articles packaged for shipment, that are not regulated as a Division 1.4 explosive under Bureau of Alcohol, Tobacco, Firearms and Explosives regulations, or unpackaged articles used in process operations that do not propagate a detonation or deflagration between articles shall be allowed in H-3 occupancies.

307.4 High-hazard Group H-2. Buildings and structures containing materials that pose a deflagration hazard or a hazard from accelerated burning shall be classified as Group H-2. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103.4 kPa).

Combustible dusts where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.
Cryogenic fluids, flammable.
Flammable gases.
Organic peroxides, Class I.
Oxidizers, Class 3, that are used or stored in normally open containers or systems, or in closed containers or systems pressurized at more than 15 pounds per square inch gauge (103 kPa).
Pyrophoric liquids, solids and gases, nondetonable.
Unstable (reactive) materials, Class 3, nondetonable.
Water-reactive materials, Class 3.

307.5 High-hazard Group H-3. Buildings and structures containing materials that readily support combustion or that pose a physical hazard shall be classified as Group H-3. Such materials shall include, but not be limited to, the following:

Class I, II or IIIA flammable or combustible liquids that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103.4 kPa) or less.
Combustible fibers, other than densely packed baled cotton, where manufactured, generated or used in such a manner that the concentration and conditions create a fire or explosion hazard based on information prepared in accordance with Section 414.1.3.
Consumer fireworks, 1.4G (Class C, Common)
Cryogenic fluids, oxidizing
Flammable solids
Organic peroxides, Class II and III
Oxidizers, Class 2
Oxidizers, Class 3, that are used or stored in normally closed containers or systems pressurized at 15 pounds per square inch gauge (103 kPa) or less
Oxidizing gases
Unstable (reactive) materials, Class 2
Water-reactive materials, Class 2

307.6 High-hazard Group H-4. Buildings and structures containing materials that are health hazards shall be classified as Group H-4. Such materials shall include, but not be limited to, the following:

Corrosives
Highly toxic materials
Toxic materials

307.7 High-hazard Group H-5. Semiconductor fabrication facilities and comparable research and development areas in which hazardous production materials (HPM) are used and the aggregate quantity of materials is in excess of those listed in Tables 307.1(1) and 307.1(2) shall be classified as Group H-5. Such facilities and areas shall be designed and constructed in accordance with Section 415.11.

307.8 Multiple hazards. Buildings and structures containing a material or materials representing hazards that are classified in one or more of Groups H-1, H-2, H-3 and H-4 shall conform to the code requirements for each of the occupancies so classified.

SECTION 308
INSTITUTIONAL GROUP I

308.1 Institutional Group I. Institutional Group I occupancy includes, among others, the use of a building or structure, or a portion thereof, in which care or supervision is provided to persons who are or are not capable of self-preservation without physical assistance or in which persons are detained for penal or correctional purposes or in which the liberty of the occupants is restricted. Institutional occupancies shall be classified as Group I-1, I-2, I-3 or I-4.

308.2 Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised environment and receive custodial care. Buildings of Group I-1 shall be classified as one of the occupancy conditions specified in Section 308.2.1 or 308.2.2.

308.2.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

This group shall include, but not be limited to, the following:

Congregate living facilities
Halfway houses
Social rehabilitation facilities

308.2.2 Condition 2. This occupancy condition shall include buildings subject to licensure by the Oregon Department of Human Services in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation. This group shall include, but not be limited to, the following:

Alcohol and drug centers
Assisted living facilities with or without a Memory Care Endorsement
Residential care facilities with or without a Memory Care Endorsement
Residential treatment facilities
Group homes and facilities

308.2.3 Six to 16 persons receiving custodial care. A facility housing not fewer than six and not more than 16 persons receiving custodial care shall be classified as Group R-4.

308.2.4 Five or fewer persons receiving custodial care. A facility with five or fewer persons receiving custodial care shall be classified as Group R-3 or shall comply with the *Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Appendix T of the *Residential Code*.

308.3 Institutional Group I-2. Institutional Group I-2 occupancy shall include buildings and structures used for *medical care* on a 24-hour basis for more than five persons who are *incapable of self-preservation*. This group shall include, but not be limited to, the following:

Foster care facilities
Detoxification facilities

Hospitals
Nursing homes
Psychiatric hospitals

308.3.1 Occupancy conditions. Buildings of Group I-2 shall be classified as one of the occupancy conditions specified in Section 308.3.1.1 or 308.3.1.2.

308.3.1.1 Condition 1. This occupancy condition shall include facilities that provide nursing and medical care but do not provide emergency care, surgery, obstetrics or in-patient stabilization units for psychiatric or detoxification, including but not limited to nursing homes and foster care facilities.

308.3.1.2 Condition 2. This occupancy condition shall include facilities that provide nursing and medical care and could provide emergency care, surgery, obstetrics or in-patient stabilization units for psychiatric or detoxification, including but not limited to hospitals.

308.3.2 Five or fewer persons receiving medical care. A facility with five or fewer persons receiving medical care shall be classified as Group R-3 or shall comply with the *Residential Code* provided an *automatic sprinkler system* is installed in accordance with Section 903.3.1.3 or with Appendix T of the *Residential Code*.

308.4 Institutional Group I-3. Institutional Group I-3 occupancy shall include buildings and structures that are inhabited by more than five persons who are under restraint or security. A Group I-3 facility is occupied by persons who are generally *incapable of self-preservation* due to security measures not under the occupants' control. This group shall include, but not be limited to, the following:

Correctional centers
Detention centers
Jails
Prerelease centers
Prisons
Reformatories

Buildings of Group I-3 shall be classified as one of the occupancy conditions specified in Sections 308.4.1 through 308.4.5 (see Section 408.1).

308.4.1 Condition 1. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas, and other spaces where access or occupancy is permitted, to the exterior via *means of egress* without restraint. A Condition 1 facility is permitted to be constructed as Group R.

308.4.2 Condition 2. This occupancy condition shall include buildings in which free movement is allowed from sleeping areas and any other occupied *smoke compartment* to one or more other *smoke compartments*. Egress to the exterior is impeded by locked *exits*.

308.4.3 Condition 3. This occupancy condition shall include buildings in which free movement is allowed within individual *smoke compartments*, such as within a residential unit comprised of individual *sleeping units* and group activity spaces, where egress is impeded by remote-controlled release of *means of egress* from such a *smoke compartment* to another *smoke compartment*.

308.4.4 Condition 4. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Remote-controlled release is provided to permit movement from *sleeping units*, activity spaces and other occupied areas within the *smoke compartment* to other *smoke compartments*.

308.4.5 Condition 5. This occupancy condition shall include buildings in which free movement is restricted from an occupied space. Staff-controlled manual release is provided to permit movement from *sleeping units*, activity spaces and other occupied areas within the *smoke compartment* to other *smoke compartments*.

308.5 Institutional Group I-4, day care facilities. Institutional Group I-4 occupancy shall include buildings and structures occupied by more than five persons of any age who receive *custodial care* for fewer than 24 hours per day by persons other than parents or guardians, relatives by blood, marriage or adoption, and in a place other than the home of the person cared for. This group shall include, but not be limited to, the following:

Adult day care
Child day care

308.5.1 Classification as Group E. A child day care facility that provides care for more than five but not more than 100 children $2^1/_2$ years or less of age, where the rooms in which the children are cared for are located on a *level of exit discharge* serving such rooms and each of these child care rooms has an *exit* door directly to the exterior, shall be classified as Group E.

308.5.2 Within a place of religious worship. Rooms and spaces within *places of religious worship* providing such care during religious functions shall be classified as part of the primary occupancy.

308.5.3 Five or fewer persons receiving care. A facility having five or fewer persons receiving *custodial care* shall be classified as part of the primary occupancy.

308.5.4 Five or fewer persons receiving care in a dwelling unit. A facility such as the above within a *dwelling unit* and having five or fewer persons receiving *custodial care* shall be classified as a Group R-3 occupancy or shall comply with the *Residential Code*.

SECTION 309
MERCANTILE GROUP M

309.1 Mercantile Group M. Mercantile Group M occupancy includes, among others, the use of a building or structure or a portion thereof for the display and sale of merchandise, and involves stocks of goods, wares or merchandise incidental to such purposes and accessible to the public. Mercantile occupancies shall include, but not be limited to, the following:

Department stores
Drug stores
Markets
Greenhouses for display and sale of plants that provide public access.

HB 4119 A STAFF MEASURE SUMMARY

Carrier: Rep. Gomberg, Rep. Smith DB

House Committee On Natural Resources

Action Date:	02/13/20
Action:	Do pass with amendments. (Printed A-Eng.)
Vote:	6-1-0-0
Yeas:	6 - Barreto, Lively, Reardon, Smith DB, Sprenger, Witt
Nays:	1 - Gorsek
Fiscal:	Has minimal fiscal impact
Revenue:	No revenue impact
Prepared By:	Laura Kentnesse, LPRO Analyst
Meeting Dates:	2/6, 2/13

WHAT THE MEASURE DOES:

Imposes American Society of Civil Engineers 7-16 (ASCE 7-16) tsunami design standards on Risk Category III and IV buildings and structures. Allows local government to impose vertical evacuation standards for new or existing buildings and structures as part of a local tsunami evacuation plan. Allows the Department of Consumer and Business Services to require that sites for new structures be evaluated for vulnerability to seismic geologic hazards if the structures are designated as Risk Category III or IV under ASCE 7-16. Requires a developer of a proposed Risk Category III or IV public building to obtain a tsunami impact determination and risk mitigation suggestions from the State Department of Geology and Mineral Industries (DOGAMI). Requires DOGAMI to respond to the developer within 45 days of receiving the request, and to report to the Legislative Assembly annually regarding requests, determinations, and suggestions. Makes the ASCE 7-16 tsunami design standard requirement and the DOGAMI consultation requirement applicable to buildings receiving an initial building permit on or after July 1, 2021.

ISSUES DISCUSSED:

- House Bill 3309 (2019), which allowed for development of essential facilities and special occupancy facilities in tsunami inundation zones
- American Society of Civil Engineers 7-16 (ASCE 7-16) standards have been adopted by California, Washington, Alaska, and Hawaii
- Some coastal communities do not have upland options for development
- Local government choice whether to construct these facilities in tsunami inundation zones
- ASCE 7-16 design standards for vertical evacuation refuge structures are not required under this measure

EFFECT OF AMENDMENT:

Replaces structural specialty code "contrary standard" with "other standards" in the notwithstanding clause for tsunami design standard requirements.

BACKGROUND:

The American Society of Civil Engineers 7-16 (ASCE 7-16) is a publication jointly produced by ASCE and the Structural Engineering Institute that describes minimum tsunami and earthquake design standards for certain buildings and structures. Under the ASCE 7-16, Risk Category III buildings include buildings that would pose a substantial hazard to human life in the event of failure, such as public assembly buildings, education institutions, residential care facilities, power-generating stations, water and wastewater treatment facilities, certain public utility facilities, and any building with more than 5,000 people. Risk Category IV buildings are essential facilities such as surgery or emergency treatment facilities; fire, rescue, ambulance, and police stations; emergency vehicle garages; designated earthquake, hurricane, or other emergency shelters; designated emergency preparedness,

communications, and operations centers for emergency response; power-generating stations; buildings containing quantities of highly toxic materials; aviation control towers, air traffic control centers, and emergency aircraft hangars; buildings with critical national defense functions; and water storage facilities and pump structures for fire suppression.

In 1995, the legislature established a moratorium on constructing new essential buildings, like schools and hospitals, in the tsunami inundation zone. In 2019, the legislature adopted House Bill 3309, which repealed that prohibition, effective January 1, 2020. The State Building Code does not currently include tsunami resilient design provisions for new facilities that may be built in the tsunami inundation zone in 2020 and beyond.

House Bill 4119-A would impose ASCE 7-16 tsunami design standards on certain buildings and structures, allow the Department of Consumer and Business Services to require that sites for certain new structures be evaluated for seismic vulnerability, and require a developer of a proposed high-risk public building to obtain a tsunami impact determination and risk mitigation suggestions from DOGAMI, effective July 1, 2021.

80th OREGON LEGISLATIVE ASSEMBLY--2020 Regular Session

A-Engrossed
House Bill 4119

Ordered by the House February 17
Including House Amendments dated February 17

Sponsored by Representative GOMBERG, Senator ROBLAN, Representative SMITH DB; Representatives EVANS, MITCHELL (Presession filed.)

SUMMARY

The following summary is not prepared by the sponsors of the measure and is not a part of the body thereof subject to consideration by the Legislative Assembly. It is an editor's brief statement of the essential features of the measure.

Imposes tsunami design standards for certain buildings and other structures. Allows local government to impose vertical evacuation standards for new or existing buildings and other structures as part of local tsunami evacuation plan.

Requires that sites for new structures be evaluated for vulnerability to seismic geologic hazards if structures are essential facilities, hazardous facilities, major structures or special occupancy structures or are designated as having specified tsunami risk for design.

Requires developer of building owned by public body and designated as having specified tsunami risk for design to obtain determination and suggestions from State Department of Geology and Mineral Industries. Requires department to report annually regarding requests, determinations and suggestions.

Makes tsunami design standards, site review requirement and department determination and suggestion requirement applicable to buildings receiving initial building permit on or after July 1, 2021.

A BILL FOR AN ACT

Relating to tsunami risk; creating new provisions; and amending ORS 455.447.

Be It Enacted by the People of the State of Oregon:

SECTION 1. (1) As used in this section:

(a) "ASCE" means the American Society of Civil Engineers.

(b) "ASCE 7-16" means ASCE Minimum Design Loads and Associated Criteria for Buildings and Other Structures (2016 Edition).

(2) Notwithstanding any other standards under the structural specialty code, the following must be designed to meet or exceed the tsunami loads and effects design standards applicable under chapter 6 of ASCE 7-16:

(a) Risk Category III buildings and structures, as defined in chapter 1, section 1.5.1 of ASCE 7-16. Buildings and other structures described in this paragraph must be designated as Tsunami Risk Category III for design.

(b) Risk Category IV buildings and structures, as defined in chapter 1, section 1.5.1 of ASCE 7-16. Buildings and other structures described in this paragraph must be designated as Tsunami Risk Category IV for design.

(3) This section does not make any buildings or other structures subject under the state building code to ASCE 7-16 standards for refuge structures for vertical evacuation.

SECTION 2. (1) As used in this section:

(a) "ASCE" means the American Society of Civil Engineers.

(b) "ASCE 7-16" means ASCE Minimum Design Loads and Associated Criteria for

NOTE: Matter in **boldfaced** type in an amended section is new; matter [*italic and bracketed*] is existing law to be omitted. New sections are in **boldfaced** type.

Buildings and Other Structures (2016 Edition).

(2) The state building code does not impose, or apply to, vertical evacuation planning and design requirements. A local government may adopt ASCE 7-16 standards for refuge structures for vertical evacuation for buildings or other structures as part of a local tsunami plan. A local government may apply standards adopted as provided in this subsection to all or part of new or existing buildings or structures within the jurisdiction of the local government.

SECTION 3. ORS 455.447 is amended to read:

455.447. (1) As used in this section, unless the context requires otherwise:

(a) "Essential facility" 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;

(D) Emergency vehicle shelters and garages;

(E) Structures and equipment in emergency-preparedness centers;

(F) Standby power generating equipment for essential facilities; and

(G) Structures and equipment in government communication centers and other facilities required for emergency response.

(b) "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.

(c) "Major structure" means a building over six stories in height with an aggregate floor area of 60,000 square feet or more, every building over 10 stories in height and parking structures as determined by Department of Consumer and Business Services rule.

(d) "Seismic hazard" means a geologic condition that is a potential danger to life and property that includes but is not limited to earthquake, landslide, liquefaction, tsunami inundation, fault displacement, and subsidence.

(e) "Special occupancy structure" means:

(A) Covered structures whose primary occupancy is public assembly with a capacity greater than 300 persons;

(B) Buildings with a capacity 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 greater than 500 persons;

(D) Medical facilities with 50 or more resident, incapacitated patients not included in subparagraphs (A) to (C) of this paragraph;

(E) Jails and detention facilities; and

(F) All structures and occupancies with a capacity greater than 5,000 persons.

(2) The Department of Consumer and Business Services shall consult with the Seismic Safety Policy Advisory Commission and the State Department of Geology and Mineral Industries prior to adopting rules. Thereafter, the Department of Consumer and Business Services may adopt rules as set forth in ORS 183.325 to 183.410 to amend the state building code to:

(a) Require new building sites [*for essential facilities, hazardous facilities, major structures and special occupancy structures*] to be evaluated on a site specific basis for vulnerability to seismic geologic hazards **if the sites are for structures that are:**

(A) Essential facilities, hazardous facilities, major structures or special occupancy

structures; or

(B) Designated under section 1 of this 2020 Act as Tsunami Risk Category III or IV for design.

(b) Require a program for the installation of strong motions accelerographs in or near selected major buildings.

(c) Provide for the review of geologic and engineering reports for seismic design of new buildings of large size, high occupancy or critical use.

(d) Provide for filing of noninterpretive seismic data from site evaluation in a manner accessible to the public.

(3) For the purpose of defraying the cost of applying the regulations in subsection (2) of this section, there is hereby imposed a surcharge in the amount of one percent of the total fees collected under the structural and mechanical specialty codes for essential facilities, hazardous facilities, major structures and special occupancy structures, which fees are retained by the jurisdiction enforcing the particular specialty code as provided in ORS 455.150 or enforcing a building inspection program under ORS 455.148.

[*(4) Developers of new essential facilities, hazardous facilities, major structures and special occupancy structures that are located in an identified tsunami inundation zone, as described in ORS 455.446 (2), shall consult with the State Department of Geology and Mineral Industries for assistance in determining the impact of possible tsunamis on the proposed development and for assistance in preparing methods to mitigate risk at the site of a potential tsunami. Consultation must take place prior to submittal of design plans to the building official for final approval.*]

(4) A developer of a proposed building owned by a public body as defined in ORS 174.109 and designated under section 1 of this 2020 Act as Tsunami Risk Category III or IV for design shall request that the State Department of Geology and Mineral Industries determine the impact of possible tsunamis on the proposed building and suggest methods to mitigate risk at the building site of a potential tsunami. The developer must make the request for the determination and suggestions prior to submitting the building design plans to the building official for final approval. The State Department of Geology and Mineral Industries shall send the determination and suggestions to a developer no later than 45 days after receiving a request.

SECTION 4. The State Department of Geology and Mineral Industries shall report regarding requests, determinations and suggestions made under ORS 455.447 (4), to an interim committee of the Legislative Assembly related to general government in the manner provided by ORS 192.245, no later than September 15 of each year.

SECTION 5. Section 1 of this 2020 Act, and the amendments to ORS 455.447 by section 3 of this 2020 Act, apply to buildings for which a building permit is initially issued on or after July 1, 2021.

CHAPTER 3:
Comprehensive Plan Provisions

Chapter 3: Comprehensive Plan Provisions

This Chapter includes a set of sample (model) plan policies (Section 3.1) related to this effort and a sample (model) tsunami related text section that can be included within the Goal 7 (Natural Hazards) section of the community's comprehensive plan. The comprehensive plan text section can be used as it is or modified and tailored to better meet the needs of a specific community. The comprehensive set of draft plan policies can be reviewed, tailored, and used to support development code provisions identified for community use.

Tip: In preparing for tsunami resilience, update the Natural Hazards (Statewide Goal 7) section of your Comprehensive Plan. Goal 7 indicates that local governments shall adopt comprehensive plans (inventories, policies and implementing measures) to reduce risk to people and property from natural hazards. Natural hazards for purposes of this goal are: floods (coastal and riverine), landslides, earthquakes and related hazards, tsunamis, coastal erosion, and wildfires.

3.1 Sample Comprehensive Plan Natural Hazards Chapter Text

This section includes sample tsunami related text that can be included as a tsunami-oriented subsection within the Goal 7 (Natural Hazards) section of the local comprehensive plan. Its intent is to provide general information related to community tsunami risk, preface the applicable tsunami plan policies, and support the community's land use resilience program. This sample comprehensive plan text subsection can be used as it is or modified and tailored to meet the needs of a specific community. Sample text follows.

0.0 Tsunami

0.01 Description of the Hazard: The Oregon coast is well known for its spectacular scenery and natural resources. However, because the coast lies at the interface between land and the Pacific Ocean, it also is a zone of great instability and vulnerability. Over time, we have gained a greater awareness of our coast's geologic hazards and its risks to people and property.

Coastal Oregon is not only vulnerable to chronic coastal hazards such as coast erosion from winter storms and sea level rise, but it is also subject to the potentially catastrophic effects of a Cascadia earthquake event and related tsunami. These types of powerful and devastating earthquakes of magnitude 9+ are generated at the Cascadia Subduction Zone where the eastward-moving Juan de Fuca tectonic plate dives under the westward-moving North American plate just off the Oregon coast. These large earthquakes will occur under the ocean just offshore of our coast and will produce extremely destructive tsunamis that can strike the coast 15 and 20 minutes after the earthquake, leaving devastation in their path. It is likely that in most Oregon coast communities, including [insert jurisdiction name], the only warning of an approaching tsunami will be the earthquake itself.

The geologic record shows that the largest of these large Cascadia Subduction Zone earthquakes and accompanying tsunamis occur about every 500 years, plus or minus 200 years. The last such earthquake and tsunami occurred over 300 years ago, on the evening of January 26th, 1700. This means that we are in the time window where a destructive Cascadia earthquake and tsunami could occur and the probability of that occurrence will continue to increase over time. This time the stakes are much higher as the great earthquake and catastrophic tsunami could

occur when tens of thousands of Oregonians and visitors are enjoying coastal beaches and towns. To address this increasing risk and substantially increase resilience within our community, the [city/county] is proactively addressing tsunami preparedness and mitigation within its land use program. Land use planning that addresses tsunami risk is an essential tool to help increase resilience to a potentially catastrophic tsunami event within [City/County].

0.02 Tsunami Hazard Maps: The Department of Geology and Mineral Industries (DOGAMI) have developed Tsunami Inundation Maps (TIMs) which provide the essential information for defining tsunami risk along the Oregon coast. The [name of city of county] has adopted the TIM's applicable to the [city/county], and its urban growth boundary, as a part of its comprehensive plan hazard inventory. These maps are also referenced within this natural hazards element of the comprehensive plan and are the basis for establishing the boundaries of the [City's/County's] Tsunami Hazard Overlay zone. The TIMs are referenced in the tsunami related plan policies and within the overlay zone for purposes of differentiating between areas of higher versus lower risk.

0.03 Tsunami Related Policies: The [City/County] has adopted a set of comprehensive plan policies related to tsunami preparedness and recovery that are included within this and other applicable sections of the comprehensive plan. These policies have been developed to address the resilience goals of the [city/county]. They are designed to support the [city's/county's] resilience efforts within the comprehensive plan and implementing codes.

0.04 Zoning: Tsunami Hazard Overlay Zone (THO): [City/County] has adopted an overlay zone which utilizes the applicable DOGAMI Tsunami Inundation Maps (TIMs). The overlay zone includes all areas identified as subject to inundation by the largest (XXL) local source tsunami event which ensures that life/safely and evacuation route planning and development are adequately addressed. Other land use resilience strategies and requirements included within the overlay zone, which are not life safety or evacuation related, are applied within a subset of the overlay to smaller inundation scenario areas. These measures are included within the overlay zone provisions and reflect the community's risk tolerance, application of mitigation measures, and ORS 455.446-447 requirements. The overlay zone boundary has been adopted as an amendment to the official zoning map for the [City/County].

Tip: Sample policies should be easily adjusted to fit your community's plan.

0.05 Evacuation Route Plan Maps: The [City/County], as part of its land use program for tsunami preparedness has also adopted a comprehensive evacuation route plan. The evacuation route plan identifies designated evacuation routes, assembly areas and other components of the local evacuation system. The plan is a key component of the [city's/county's] efforts to reduce risk to life safety by planning for a comprehensive evacuation system and developing the detailed information necessary to establish land use requirements to implement evacuation measures and improvements. This plan and associated map(s) have been incorporated into the [City/County] [comprehensive plan natural hazard element/transportation system plan].

3.2 Sample Comprehensive Plan Tsunami Related Policies

This section includes a set of sample comprehensive plan policies related to tsunami preparedness and recovery that can be included within the Goal 7 (Natural Hazards) section, and other applicable sections of the community's comprehensive plan. The sample comprehensive plan policies should be used and tailored to meet the needs of a specific community. They are designed to be used with and support the sample development code provisions and/or other strategies within this Land Use Guide. The sample policies are as indicated below.

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, the [City/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 [City/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. Require a tsunami hazard acknowledgement and disclosure statement for new development in tsunami hazard areas.
9. Identify and secure the use of appropriate land above a tsunami inundation zone for temporary housing, business and community functions post event
10. As part of a comprehensive pre-disaster land use planning effort, consistent with applicable statewide planning goals, identify appropriate locations above the tsunami inundation for relocation of housing, business and community functions post event. (Note: Section 7.2 of this guide addresses this type of comprehensive pre-disaster land use planning effort.)

Evacuation Policy Concepts

To facilitate the orderly and expedient evacuation of residents and visitors in a tsunami event, the [City/County] will:

1. Adopt a tsunami evacuation route 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 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 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.

Tip: ORS 455.446-447 identifies minimum restrictions. Jurisdictions should consider limiting other uses and/or extending restrictions for some uses to other risk zones.

Policies Related to Reducing Development Risk in High Tsunami Risk Areas

The [City/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 tsunami inundation area as determined by the community] tsunami inundation area.

Note: Currently, the area within which the limitation on the placement of new essential facilities and special occupancy structures is defined by the inundation line specified in ORS 455.446. The adoption of a new line for purposes of ORS 455.446 and ORS 455.447, based on the new TIMs, is being considered by the DOGAMI governing board. The jurisdiction can be more restrictive if it chooses.

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.

Tip: Dune protection is a coastal best practice and may aid long- term resiliency, but should not be relied on to protect against locally generated tsunami events.

Hazard Mitigation Planning

The [City/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

The [City/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. See also Chapter 6.10.
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

The [City/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

The [City/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.

Goal 11: Public Facility and Services

The [City/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

The [City/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.

Goal 14: Urbanization

The [City/County] will:

1. Limit the allowable uses on property in the tsunami hazard area vacated as the result of an urban growth boundary expansion to relocate existing development. 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.
4. Include pre- and post-tsunami disaster planning as part of urban reserve planning processes.

Tip: A DOGAMI advisory committee may recommend the adoption of the "Large" scenario for application of the ORS 455 development restrictions. This recommendation will be considered by the DOGAMI Governing Board who will make the final determination.

3.3 Map Amendments

The comprehensive plan and development code text amendments developed using this Land Use Guide will need to be accompanied by associated map amendments. The following maps should be adopted or otherwise incorporated into the appropriate elements of the local comprehensive plan and implementing regulations:

a. DOGAMI Tsunami Inundation Map (TIM): Communities should adopt the map, or maps in the DOGAMI Tsunami Inundation Map (TIM) Series applicable to their jurisdiction as a part of the comprehensive plan inventory, as they provide the essential information for defining tsunami risk. The TIMs include five inundation scenario areas including small,

medium, large, extra-large, and extra extra-large tsunami events. The TIMs will typically be referenced in the natural hazards element of the comprehensive plan, and will also be used as the basis for establishing the boundaries of a Tsunami Hazard Overlay zone. The TIMs may also be referenced in plan policies and/or the overlay zone for purposes of differentiating between areas of higher versus lower risk. For example, the official ORS 455 tsunami inundation zone (which is currently being considered for updating based on the current TIMs), will identify the area to which ORS 455 development restrictions will apply.

Tip: In adopting the applicable TIMs, communities should identify and make reference to the specific number and publication date of the map for their community.

b. Tsunami Hazard Overlay Zone Map (THO): The overlay zone map(s) should be developed using the applicable DOGAMI Tsunami Inundation Maps or TIMs. In developing the overlay map it is recommended that the overlay area include all five inundation scenarios identified on the TIMs (S, M, L, XL, and XXL) which would ensure that life/safety and evacuation route planning and development are adequately addressed. Other land use resilience strategies and requirements included within the overlay zone, which are not life safety or evacuation related, may be applied within a subset of the overlay to smaller inundation scenario areas subject to the community's risk tolerance, application of mitigation measures, and ORS 455.446-447 requirements. The map(s) should be adopted in the form of an amendment to the official zoning map for the community.

   A community may also coordinate with DOGAMI to develop water depth mapping associated with various tsunami inundation scenarios found on the TIMs which could be used to further define or clarify areas where land use provisions would apply.

c. Evacuation Route Plan Maps: The Evacuation Route Plan will typically include a map or maps that identify designated evacuation routes, assembly areas and other components of the local evacuation system. This map would be included in the adoption of the overall Evacuation Route Plan. The Evacuation Route Plan should, in turn, be incorporated into the community's comprehensive plan or transportation system plan, as appropriate.

City of Newport

Community Development Department

Memorandum

To: Planning Commission/Commission Advisory Committee

From: Derrick I. Tokos, AICP, Community Development Director

Cc: Tim Gross, City Engineer

Date: February 20, 2020

Re: Draft Amendments to the Storm Drainage Element of the Newport Comprehensive Plan

---

Enclosed is a final draft of proposed changes to the Storm Drainage Element of the Newport Comprehensive Plan. Statewide Planning Goal 11 addresses public facilities planning, and that goal is implemented in OAR Chapter 660, Division 11. The administrative rule calls for certain elements of public facilities plans to be adopted into a Comprehensive Plan, namely a list of the identified projects (OAR 660-011-0045). System Development Charge eligible capital projects should also be identified in the project list. The consulting firm, Civil West Engineering Services, completed a Stormwater Master Plan for the City of Newport in October of 2016, and we are belatedly adding its projects and recommendations into the Comprehensive Plan.

The Planning Commission reviewed key elements of the master plan at a February 26, 2018 work session and provided comment on an initial draft of the Comprehensive Plan Element, and recommended policies, on March 12, 2018. A copy of the minutes from the March 2018 work session are enclosed. This current draft responds to issues raised by Commission and Advisory Committee members at the time. Language has been clarified and a new Policy 5 has been added under Goal 1 related to the management of stormwater in geologically hazardous areas.

If the Planning Commission is comfortable with the revisions, then staff will initiate the required 35-day DLCD notice prior to the first evidentiary hearing. A motion will be needed from the Commission to formally initiate the legislative process. That can happen at the next regular meeting scheduled for March 9, 2020.

A full copy of the Stormwater Master Plan can be viewed on the Community development Department webpage, under "Current Projects" at: https://newportoregon.gov/dept/cdd/default.asp.

Attachments
Draft Stormwater Element of the Newport Comprehensive Plan, dated 2-24-20
Minutes from the March 12, 2018 Commission Work Session

STORM DRAINAGE FACILITIES

The City of Newport (City) provides stormwater collection services for more than 10,000 people and businesses across 43 separate drainage basins. Stormwater collected from within the City is typically piped in developed areas and discharged into the nearest natural water body (i.e. local streams, the bay or sloughs, etc.) In many cases, existing storm drains have been designed and constructed with the intent to serve only specific developing areas within the City, without consideration of future improvements that might occur upstream.

The characteristics of the City's storm drainage system in areas north of the Yaquina Bay are different from what exists to the south. Areas north of the bay are more steeply sloped, with ravines and hilly areas that were excavated and filled to create level areas for development. Within these areas the storm drain system normally was large diameter pipe conveying runoff at the natural elevation and along the original alignment of whichever creek/stream or waterway that was being covered. In many cases, the cover (i.e. fill) was over 25 feet deep.

As the alignment of these systems was not dictated by lot lines, or typical planning parameters, many of these pipes currently run under existing structures. The second type of system is those that were put in place within areas that maintained a similar topography to the natural landscape. The storm drain systems in these areas are typically small diameter pipe networks that follow natural grading flow paths to the nearest hillside, or ravine draining to a nearby creek or stream.

Beginning in the 1970's, the City annexed areas south of Yaquina Bay, commonly referred to as "South Beach." This area extended approximately 5 miles South of Yaquina Bay, and as much as 2.5 miles inland. Significant portions of South Beach are undeveloped, with storm drainage following whatever path the natural ground would dictate to get to Yaquina Bay, or the Pacific Ocean. Given that this area is relatively flat, and that the natural terrain affords many areas for water storage, (wetlands) it can be difficult to model how the storm water flows through these undeveloped areas. The majority of the storm drain system within South Beach is comprised of roadside ditches, culverts along HWY. 101, a piped system which outfalls east of SW 32nd St., and pipes which convey storm runoff under the Airport.

Detailed information on the historical, functional, and environmental factors relevant to the City's stormwater system can be found in the document entitled, "Stormwater Master Plan, City of Newport, Lincoln County Oregon," by Civil West Engineering, dated October 2016 (hereinafter, the "Stormwater Master Plan").

Existing Stormwater System:
The existing storm drain system within the 43 basins includes approximately 32 miles of gravity piping in a range of sizes from 6-inches to 144-inches diameter and consisting of a variety of materials including concrete, corrugated steel, polyvinyl chloride (PVC), high density polyethylene (HDPE), and others. Detailed information is provided in the Stormwater Master Plan regarding the specific amounts of the various sizes of pipe in the various basins. Systems within the basins are typically one of three types, as listed below:

1. Large diameter pipes following the elevation and alignment of natural drainage ways with significant fill above the pipe.
2. Small diameter pipes which drain straight to a nearby creeks, or streams.
3. Natural topography draining to creeks, and streams which are conveyed under HWY. 101 by means of a large culvert.

The downtown area is mixture of system types 1 and 2, while much of the far north and south are a mixture of system types 2 &3.

Study Area

Page 2. City of Newport Comprehensive Plan: Stormwater Facilities.

Planning Period:
The timeframe for preparation of this Master Plan was 2013/2014, but due to numerous updates and review periods, the final Master Plan is dated October 2016. The planning period for this Storm Water Master Plan is 20 years. The period must be short enough for current users to benefit from system improvements, yet long enough to provide reserve capacity for future growth and increased demand. Existing residents should not pay an unfair portion for improvements sized for future growth, yet it is not economical to build improvements that will be undersized in a relatively short period of time. Thus, it is appropriate to calculate the storm water flow increase caused by development over the next 20 years, which is a typical planning period for storm water master plans. The end of the planning period is the year 2035.

Identification of Deficiencies and Development of Improvement Alternatives:
All of the existing storm drain system components were analyzed for deficiencies that exist presently. Facilities also have been evaluated for deficiencies that are expected to occur within the 20-year planning period. Deficiencies were identified related to the age of infrastructure, anticipated development, and capacity.

As part of this planning effort, calculations were made to estimate the peak stormwater flows that could be expected from each basin under existing and future development conditions. Runoff calculations for the various storm drainage basins were performed using a method developed by the Soil Conservation Service (SCS) now called the National Resources Conservation Service (NRCS) for relating rainfall to runoff. The method is described in length in Technical Release 20 (TR-20) published by the SCS. The TR-20 method is based upon unit hydrograph theory and the runoff curve number method of calculating direct runoff from the rainfall occurring over specified areas. It considers an entire watershed with a variety of land uses and soil types. The TR-20 method also allows watershed areas (basins) to be divided into sub-basins for analysis purposes, with drainage routes of one or more sub-basins running through other sub-basins downstream. This provides for the calculation of an overall peak discharge from a basin that may or may not equal the sum of the peak discharges from the individual sub-basins.

Recommended Stormwater Projects:
The table on the next page identifies a number of projects to address deficiencies within the storm drainage system over the next 20-years. Individual projects are grouped into three priority classifications. Each classification group is loosely defined as follows:

Group A: These are the highest priority projects that should be undertaken as soon as adequate funding is available. These projects should be undertaken within the next 5 years.

Group B: These projects, while not of the highest priority, should be on the City's capital improvement planning window beyond the 5-year horizon. As Group A projects are completed, Group B projects should be moved to Group A status. System degradation or failures, project coordination, or other occurrence may require the movement of Group B projects to Group A status ahead of schedule. New projects that are developed that are not critical, should be grouped in Group B until funding is available.

Group C: Group C projects are either of low priority or are dependent on development. If development in an area necessitates the implementation of a Group C improvement, the project should be moved to Group A. Some projects may remain in Group C indefinitely if the need for the project or the development requiring it never arises.

	Project Rating	Project Number	Project Description	Improvement Conditions: Overflow	Under Structures	Future Develop.	Total Project Cost
A	1	X1	1456' of 12", and 18" SD pipe along SW 9th St.	X			$526,162
	2	X2	571' of 18", and 24" pipe along SW 10th St.	X			$213,816
	3	X3	1663' of 12", 24", 30", and 36" SD pipe along SW Minnie St.	X			$793,155
	4	U4	Re-alingment of Pipe under Cash and Carry	X	X		$2,710,875
	5	U2	739' of 54" SD pipe along NW 3RD Street & NW Coast St.	X			$612,539
	6	T2	921' of 36" SD pipe along NW Coast St.	X			$490,012
	7	T4	Re-alignment of Pipe under Sunwest Honda/Mazda building		X		$1,109,013
	8	AL1	170' of 36" SD pipe crossing Hwy. 101 (Jack and Bore)	X			$102,117
	9	N1	1200' of 12", 24", 30", and 35" SD Pipe along Hwy. 101	X			$553,428
B	10	Q1	890' of 12", 18" , and 24" SD pipe along NW Nye St.	X			$291,848
	11	T6	Re-alignment of Pipe under Church of the Nazarine building		X		$598,801
	12	T5	Re-alignment of Pipe under Ford Dealership building		X		$271,188
	13	U5	Re-alignment of Pipe under local residence	X	X		$79,355
	14	C1	525' of 24" along NE 73rd St.	X		X	$229,316
	15	AA1	675' of 18", and 24" SD pipe along SE Avery St.	X			$212,022
	16	AF1	1515' of 12", 18", and 24" pipe along SW 29th and SW Brant St.			X	$640,902
	17	F1	124' of 30" SD pipe North of NW 60th St.	X		X	$67,398
	18	T3	665' of 12", 18", and 24" SD pipe along NW Spring St.	X			$264,614
	19	U3	1699' of 18", and 24" pipe along SW Cliff Street	X			$664,079
	20	U6	553' of 12", and 18" SD pipe along SW 2nd St.	X	X		$169,797
	21	AJ1	55' of culvert crossing SE 35th St.	X			$37,156
	22	U1	753' of 18", and 24" SD pipe along NE Douglas Street	X			$304,978
	23	R1	675' of 12", and 18" SD pipe along NW Spring St.	X			$227,522
	24	Y1	497' of 12" SD pipe along SW 13th St.	X			$163,653
	25	V1	533' of 18" and 24" SD pipe along SW Fall St.	X			$308,322
C	26	AG1	Drainage ditch development and Rehabilitation	X		X	$1,693,568
	27	K1	270' of 12" & 18" SD pipe along NE Lucky Gap St.	X			$102,214
	28	H1	305' of 12" and 18" SD pipe along NW 54th St.	X			$103,677
	29	N2	240' of 18" SD pipe along NE Iler St.	X			$86,500
	30	T1	161' of 12" SD pipe along NW Nye St.	X			$50,766
	31	AC1	655' of Culverts crossing Yaquina Bay Blvd.			X	$208,698
	32	AG2	1551' of 15", 18", and 24" SD pipe along SW 35th St.			X	$459,808
		Total					$14,347,295

Project Prioritization:

When considering stormwater conveyance projects, priority should be given to the following:

1. Areas where there is an identified lack of capacity within the system to handle flows attributed to existing and future conditions.
2. Components of the storm drainage system run-off (controlled or otherwise) has repeatedly caused problems for the City and for residents.
3. Opportunities to relocate public storm drainage components from underneath existing structures.
4. Age related deficiencies that could result in structural failure of piping sections.
5. The extent to which a project aligns with available funding.
6. Coordination with other planned improvements (water, sewer, streets, etc.).

Although all of these factors were taken into account when formulating the priority of projects, three carried the most weight in the development of priorities. These three dominant influences were listed as 1 through 3, and were weighed so heavily because flooding and large pipe failures under structures will have the largest impact on public safety and welfare.

Financing:

There are a number of potential sources of funding. The City has a monthly 'Stormwater Utility' fee that is designated to pay for stormwater services, including the operation, maintenance, repair, necessary replacement, and improvement of the system. That fee is based upon the amount of impervious surface on a given property. Federal, state and local gas taxes can also be used to improve stormwater facilities when such wok is in conjunction with street projects. The current fees do not have the capacity to pay for all of the capital improvements outlined above.

Additionally, grant and non-grant sources of funding are potentially available, including but not limited to FEMA Pre-Disaster Mitigation Program, FEMA Flood Mitigation Assistance Program, Clean Water State Revolving Loan Fund, general obligation bonds, revenue bonds, and system development charges (SDCs). Although grant programs exist, there is no way to guarantee that grant funding will be available to fund needed projects. Revenue bonds supported by user fees and complimented by SDCs are a more reliable means of programming needed funding over a series of years.

(Note: Recommended changes to existing comprehensive plan policies are shown in red, with new language being indicted in underline and deleted language in ~~strikethrough~~.

GOALS AND POLICIES
PUBLIC FACILITIES ELEMENT

Storm Water Drainage

~~Goal: To provide a storm water drainage system with sufficient capacity to meet the present and future needs of the Newport urbanizable area.~~

~~Policy 1: The city will comply with state and federal laws concerning water quality.~~

~~Policy 2: The city will use existing, natural drainage systems to the greatest extent possible.~~

Goal 1: Provide a storm water drainage system with sufficient capacity to meet the present and future needs of the Newport urbanizable area.

Policy 1: Assess the condition of the City's stormwater drainage system and identify needed capacity improvements for a 20-year planning period through periodic updates to the City's Stormwater Master Plan.

Policy 2: Maintain and implement a Capital Improvement Plan to address deficiencies in the storm drainage system.

Policy 3: Address deficiencies in storm drainage conveyance system when reconstructing existing streets.

Policy 4: Require that new development projects manage storm run-off from new impervious surfaces to minimize impacts to the downstream drainage system.

Policy 5: Provide that storm run-off attributed to new development in geologically hazardous areas is evaluated by qualified professionals to minimize impacts to the subject, or nearby properties.

Policy 6: Pursue a range of options for financing priority storm drainage improvement projects, including (a) revenue bonds that leverage utility fees; (b) general obligation bonds; (c) clean water state revolving loan funds; (d) FEMA hazard and flood mitigation grants (e) urban renewal funds; and (f) system development charges.

Goal 2: Develop a stormwater regulatory framework that emulates DEQ Phase II permitting standards, so that the City is positioned to comply with such requirements when required.

Policy 1: Amend the City's ordinances to require drainage analysis for development with new impervious surfaces that demonstrates run-off can be managed on-site, or that the downstream conveyance system has capacity for the volume and velocity of stormwater attributed to a 25-year, 24-hr storm event.

Policy 2: Develop boilerplate storm drainage management options for small scale development projects to alleviate the need for site specific hydraulic analysis.

Policy 3: Adopt pre and post development erosion control requirements.

Policy 4: Encourage the use of pervious surfaces as a method of managing storm run-off, such as porous pavement/concrete, porous pavers, retention/detention facilities, and infiltration trenches.

Policy 5: Establish a set of "good housekeeping" policies for City property and facilities that limit pesticide, herbicide, and fertilizer use.

Goal 3: Collaborate with local and regional partners to establish water quality standards that meet State and Federal requirements.

Policy 1: Support efforts to develop a mid-coast Total Daily Maximum Load (TMDL) Implementation Plan.

Policy 2: Coordinate with stakeholder groups to detect and eliminate illicit discharges into drainage ways, Yaquina Bay, and the Pacific Ocean.

MINUTES
City of Newport Planning Commission
Work Session
Newport City Hall Conference Room A
March 12, 2018
6:00 p.m.

Planning Commissioners Present: Jim Patrick, Lee Hardy, Bob Berman, Rod Croteau, and Jim Hanselman.

Planning Commissioners Absent: Bill Branigan, and Mike Franklin (*excused*)

PC Citizens Advisory Committee Members Present: Karmen Vanderbeck & Dustin Capri.

City Staff Present: Community Development Director (CDD) Derrick Tokos; and Executive Assistant, Sherri Marineau.

1. **Call to Order.** Chair Patrick called the Planning Commission work session to order at 6:00 p.m.

2. **Unfinished Business.** No unfinished business.

3. **New Business.**

A. **Review Draft Amendments to the Storm Drainage Element of the Newport Comprehensive Plan.** Tokos reviewed the prioritizing of Phase 3 projects and how the draft amendments were laid out. Berman noted that on Page three there was a paragraph return where it shouldn't be. Tokos would correct this. Berman also noted that on Page five the prioritization should have consistent bullets and questions that were appropriate. Tokos would correct this as well.

Hanselman said the prioritization section didn't appear to have areas without stormwater control and didn't see them in the Master Plan report. He wondered if they did this based purely on outfalls known and located. He didn't think there was any stormwater control on the west side so many properties had to deal with runoff from neighboring properties and all other surfaces. He thought any area that didn't have stormwater facilitates needed to be a part of the project. Berman thought the erosion potential at that location was huge. Hanselman thought neighborhoods without any stormwater control needed to be listed as a significant priority. He said because pump stations had problems and when they couldn't handle excess water, they flood out to the beach and onto people's properties. He didn't like that these areas were being overlooked. Tokos said he would talk to Tim Gross about it. He thought some of it would be picked up on the Transportation System Plan but didn't know if it would be a full analysis. Tokos said what they could do was identify where targeted additional improvements were needed. Hanselman described the areas that needed improvements. Patrick said the City needed to deal with ODOT not taking responsibility on runoff from the highway. A discussion ensued regarding areas that needed improvements. Tokos said we could put in a policy recommendation for some additional analysis to be done in the area. Capri asked who paid for these things. Tokos said the analysis would come out of Stormwater, and the construction costs would depend on the nature of the improvements. He said that the Agate Beach construction had some Urban Renewal funds potentially available and that analysis would come out of utility fees for storm drainage. Hanselman wanted see the lack of some the areas being covered added to the report.

Berman said the criteria didn't include projects to create infrastructure where there was none at that time. Tokos said there was a lacking of capacity in the system. He said there was limited infrastructure, not no infrastructure, and it was more on the rural scale. Patrick said there needed to be a line in the report about onsite water disposal about where the City allowed and didn't allowed it. He was worried about projects being placed in areas that would create slides and thought it needed a mechanism. Patrick asked if they had identified most of the blocks yet. Tokos said under Goal 1 they could add a policy to recognize geo-technical limitations. Croteau asked if the DOGAMI maps were helpful in this regard. Tokos felt they were more generalized. Hardy said it was easy to research. Patrick said they could define areas. Tokos said there was limited information the further you were from the coast line. Berman asked if DOGAMI had done LIDAR. Tokos said they had and there was some terrain modeling that showed where there was ancient landslides. He said just because they had the information on ancient landslides, they would still need to do additional analysis of the area.

Tokos covered Goal 1 for Stormwater Drainage. Capri asked what happened when a project went over budget when building a street. Tokos said you wouldn't be able to not do it and would have time to assess when digging into the street. He said an existing deficient storm system would be factored into the budget. Patrick said Policy 4 should say "and to the underlying geology." Capri thought it would be interesting to have an option for a geologist to sign off on stormwater mitigation, but he didn't think any of them would do it. Tokos thought the policy was spot on but needed to

be cognizant of approving and adding new development. He said this would be done by the developer and something to think about. Capri said he wasn't opposed to Policy 4. Tokos said to be clear it wouldn't be a geologist who would be doing the analysis, it would be a civil engineer. Berman noted that he didn't like the way the policies were listed on the report and thought revenue bonds should be put at the bottom.

Tokos covered Goal 2. Hanselman asked if the framework was hit at a population size. Tokos said the threshold was closer to the Corvallis size of 50,000. Berman noted that the comma close to the third line should be taken out. Tokos noted that small scale development was not in the Master Plan. Berman asked where the options came from. Tokos said the boilerplate was a lot of common options that came from what different jurisdictions were using. Capri thought there should be an option to waive the standards to hire an expert to prove what the site required. Tokos said they should always have the option. He said the City wasn't experts in geological permits but the they could make sure that the project was proceeding according to the recommendations of the geologist or drainage analysis. Capri was concerned about having to stick to boilerplates. Tokos said it was more of an option rather than a mandate. He did say the 25 year was a mandate with a threshold. Berman suggested adding the word "optional" after "development" in Policy 2. Tokos said he would clarify that it would be optional.

Croteau said at some point they would have to determine what small scale was. Capri asked if it was square footage. Tokos said it was tricky. He said they were talking about development areas which meant they were talking about redevelopment. He said the City had a reasonably good handle on the conditions of the conveyance system. He said they would be tying into it and working on improving the condition of the system. Capri asked if this was what Tim Gross was already doing. Tokos said when Gross was making a decision, it was about adding a significant amount of impervious surface. He didn't know if a city with small incremental development would do much of anything to try to stay on top of incremental additions to the overall impervious surface and drainage. Capri said he thought that water and sewer bills didn't pay for infrastructure improvements. Tokos said the storm drainage infrastructure fee was intended to help the City chip away at the existing deficiency but didn't have the resources to pay for it all. He said the remainder would be paid for by revenue bonds.

Tokos reviewed Goal 2, Policy 3. Capri asked for an example. Tokos said it was things like silk fences, bio bags, and erosion control blankets. Tokos reviewed Policy 4 and impervious surfaces. Hanselman asked if they were including parking lots. Tokos said pervious payment or concrete could be done for a parking lot that was used on a continuous basis. The challenge was that it was a different mix and they would end up using different materials to patch. Patrick asked if Nye Beach was pervious. Tokos said the pavers weren't pervious. Berman asked if it was appropriate to have examples in the policy. Tokos said it wasn't uncommon to call them out. He said he would add "or similar measures" to the policy. Tokos reminded the PC that they could use, up to a point, the road to hold water.

Tokos reviewed Policy 5. Berman asked why it was limited to City properties. Tokos said the City had control over these properties and could readily ensure that they're followed. Hanselman asked if it covered schools because he didn't like the idea of pesticides near children. Tokos said the City would discourage this but there were areas they would still use it. Hanselman assumed City staff would be trained to apply pesticides. Capri asked if rainwater catchment was a possibility for irrigation. Tokos said it could be used to irrigate but it couldn't be run back into the house and flushed back into the public system.

Tokos reviewed Goal 3 Policies next. He asked the PC if there was anything missing or anything they wanted added. None were heard. He said he planned to bring the plan back to the PC on the March 26th meeting.

B. **Discuss Draft Major Amendment 13 to the South Beach Urban Renewal Plan.** Tokos reviewed his presentation on Draft Major Amendment 13 to the South Beach Urban Renewal Plan. He explained the process and noted that the City talked to the County to engage them. Tokos said the date was extended to 2025 to complete the final round of projects. Berman questioned how it would work if a new project could be initiated in 2025 but the district had to close in 2027. Tokos said it meant there would be an agreement that would shift the funding from the project back to the City as an intergovernmental agreement. Berman asked what would happen if there was money left over. Tokos said it would be kicked back to the taxing districts. Croteau asked for the final date. Tokos said the last borrowing would be in 2019-2020 and debt retirement would accelerate over in the last few years. Berman asked what was the big contributors to the two million. Tokos said South Shore, the Rogue Brewery, and anything since the 1980's. He explained that real properties were taxed and Government properties weren't. Tokos noted that the Wilder development was outside of the Urban Renewal area.

Tokos asked for the PC's thoughts on prioritizing Phase 3 projects. He covered the priorities. Croteau asked for the location on the redundant bay under-crossing pipeline. Tokos explained where the location was. He noted that new projects couldn't be added to the plan. Berman asked if the intent was to get everything done by 2027. Tokos said no, the high priority projects were what they wanted to complete. Croteau asked if the 35th Street sidewalks were inevitable,

was it something the City could begin on now to prevent future encroachment in the area. Tokos said the City wanted to give people a heads up and it was most of the development on the north side. Capri asked about the easements noted on page 41. Tokos said if it was needed it would be a targeted easement. Vanderbeck asked about outside funding options. Tokos said there would be funding for 40th Street and Highway 101 because there would be commercial partners to help fund it. He noted that the redundant bay under-crossing pipeline might have Federal dollars for resiliency there.

C. **Updated Tentative Planning Commission Work Program.** Tokos reviewed the updated work schedule with the PC. Patrick asked to add a discussion on height adjustments to get some rules in place. Tokos said if the PC didn't like the current rules they could change them, say they couldn't be done, or change them to variances to show hardships. Hardy thought there should be some rational parameters that were clearly stated and accurate. She didn't think simplistic definitions were sufficient. Tokos reiterated that they could be changed and said he didn't know that the standards were problematic. Patrick said standards had worked for setbacks, but not for height. He wanted to know why there were height restrictions. Tokos said heights had to do with fire and safety for commercial structures. Hardy thought the way that heights were measured needed clarification. Tokos said there could be a conversation on this. He said to keep in mind that when dealing with height the existing residential neighborhoods had fixed development patterns. Tokos said when changing the height definition, it would apply across the board and to keep in mind the existing development pattern when doing it. A discussion ensued regarding the history of height adjustments in the City. Patrick wanted some rationale presented to the PC to base things on. Croteau asked to see how other jurisdictions did their calculations. Tokos said he would add this to the work program.

Tokos reminded the PC that they would be having a discussion on the Nye Beach Design Review later in the year. He said they weren't addressing it at this time so it didn't get convoluted with the Vacation Rental process.

4. **Director's Comments.** No Director comments.

5. **Adjournment.** Having no further discussion, the meeting adjourned at 7:22 p.m.

Respectfully submitted,

Sherri Marineau

Sherri Marineau,
Executive Assistant