

OREGON COASTAL MANAGEMENT PROGRAM



Coastal Zone Management Act §309 Assessment and Strategy 2016–2020

Prepared by the Oregon Coastal Management Program
For Federal CZMA §309 Enhancement Program
Office for Coastal Management,
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I. Introduction

The Coastal Zone Enhancement Program, established under Section 309 of the Coastal Zone Management Act (CZMA) of 1972, as amended, encourages state coastal management programs to strengthen and improve their federally approved coastal management programs. Section 309 establishes a voluntary grant program that provides funding for states and territories to develop and implement coastal management program changes in one or more of nine enhancement areas. These specific “enhancement areas” are:

- Wetlands;
- coastal hazards;
- public access;
- marine debris
- cumulative and secondary impacts;
- special area management plans;
- ocean resources;
- energy and government facility siting;
- aquaculture

Every five years, states and territories are encouraged to conduct self-assessments of their coastal management programs to identify issues and enhancement opportunities within each of the nine enhancement areas—and to assess the effectiveness of existing management efforts to address identified problems. Each coastal management program identifies high priority management issues as well as important needs and information gaps the program must fill to address these issues.

Through this self-assessment, each coastal management program identifies high priority needs for improvement within one or more of the nine areas. The coastal management program then develops strategies, in consultation with NOAA’s Office for Coastal Management (OCM), to address these management needs. The strategies provide a stepwise approach to reach a stated goal and lead to enhancement of the state’s or territory’s federally approved coastal management program.

OCM reviews and approves the Section 309 “assessment and strategy” document for each state and territory and, after approval, provides funding under Section 309 to help states carry out those strategies.

II. Summary of Recent Section 309 Achievements

Ocean Resources Planning

In 2013 the Oregon Coastal Management Program (OCMP) completed work on amendments to Oregon's Territorial Sea Plan (TSP) that were identified as a part of the 2011-2015 Section 309 Strategy. The Territorial Sea Plan was amended to add a chapter addressing marine renewable energy development. The amendment includes a spatial planning component addressing the siting of marine renewable energy development based on a comprehensive assessment of important marine resources and uses. This inventory of spatial data and maps has been incorporated into the TSP. These amendments to the TSP have created a comprehensive statewide spatial siting plan; resource inventory evaluation requirements; project review process; and a set of regulatory standards for marine renewable energy development to protect fisheries, ecological resources and marine habitat, recreation uses, aesthetic resources and other beneficial uses of the territorial sea.

OCMP formally submitted the ***Oregon Territorial Sea Plan Part Five: Use of the Territorial Sea for the Development of Renewable Energy Facilities or Other Related Structures, Equipment or Facilities*** as a program change to OCRM in accordance with the program change regulations at 15 CFR part 923, subpart H. The incorporation of these changes into the OCMP was approved by OCRM on April 10, 2014.

http://www.oregon.gov/LCD/OCMP/Pages/Ocean_TSP.aspx

Coastal Hazards Planning

Several important efforts identified the 2011-2015 Section 309 Strategy for Coastal Hazards were completed during the past five year assessment and strategy period. These achievements include:

- The OCMP completed work on a model code for chronic coastal hazards. Designed to be used with the latest generation coastal hazard risk zone maps produced by the Oregon Department of Geology and Mineral Industries (DOGAMI), the model code can be readily adapted for use by local jurisdictions. The model code includes a number of provisions to facilitate improved decision making in the local review process, including incorporating the latest guidelines for engineering geologic reports issued by the Oregon Board of Geologist Examiners. Elements of the model code have been adopted by three local government jurisdictions, and the OCMP is working with additional coastal cities and counties to initiate similar work.
<http://www.oregon.gov/LCD/OCMP/docs/Publications/ModelCoastalHazardsOverlayZone.pdf>
- Local adoption of the latest generation of coastal hazard risk zone maps was completed by the City of Newport, the City of Lincoln City and Tillamook County (for the unincorporated community of Neskowin). These local plan amendments also included new or amended implementing land use regulations based on the updated hazard maps and incorporating elements of the OCMP model code for coastal hazards. In each case, these local efforts were supported by technical assistance from the OCMP. It is anticipated that these locally adopted

program changes will be submitted to OCM as a part of a larger package of local plan-based Routine Program Changes in early 2015.

- ***Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities*** prepared by the Department of Land Conservation and Development (DLCD) was released on January 15, 2014. This tsunami land use guidance was developed by DLCD in partnership with an advisory committee comprised of representatives of local government and state agencies, and assisted by Cogan Owens Cogan, a multi-disciplinary consulting firm.

The purpose of the publication is to provide guidance to vulnerable communities for incorporating tsunami resilience measures into local land use programs. The land use guide is designed to be tailored by communities to address their individual tsunami risk and location, and provides comprehensive information focused on land use planning approaches for reducing tsunami hazard risk and implementing important land use resilience measures. The guidance is designed to be used with the new Department of Geology and Mineral Industries Tsunami Inundation Maps (TIMs). The guide is web based with links to other resources.

<http://www.oregon.gov/LCD/OCMP/docs/Publications/TsunamiGuide20140108.pdf>

The department began work to assist communities in efforts to implement the guidance in early 2014.

Estuary Planning

During the period since the last Section 309 Assessment and Strategy was completed, the OCMP has concluded several efforts to facilitate improvement in estuary management plans, consistent with the 2011-2015 Section 309 Strategy for estuary planning. Achievements in this enhancement area include:

- In 2014 the OCMP completed and published the ***Oregon Estuary and Shoreland Habitat Atlas***. The Oregon estuary and shorelands habitat project was a 24 month project to produce estuary and shorelands habitat map information, using the federally adopted Coastal and Marine Ecological Classification Standard (CMECS) version 4.0. With the completion of the CMECS habitat classification project, digital information products and data were generated and published to the OCMP's Oregon Coastal Atlas and the Estuary Planning Atlas Tool. These data sets and mapping tools are now available to all Oregon estuary planners and managers, and provide a fundamental resource inventory tool for the update of estuary management plans. <http://www.coastalatlantlas.net/cmecs>
- In 2014 the OCMP completed and published the ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***. This report was prepared as a component part of a multi-year effort by the Department of Land Conservation and Development to facilitate the modernization of local estuary management plans. The analysis provides a qualitative assessment of the current state regulatory framework for managing estuaries, including the provisions of and administrative rules for Statewide Planning Goal 16, Estuarine Resources, Statewide Planning Goal 17, Coastal Shorelands, and other program authorities, for the purpose of determining suitability to meet future needs for the management of Oregon's estuaries. The

conclusions of this report identify several key areas on which estuary management plan updates can be focused.

<http://www.oregon.gov/LCD/OCMP/docs/Publications/RegulatoryAssessment.pdf>

- Also in 2014, the OCMP completed and published the ***Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands***. Prepared for DLCD by Cogan Owens Cogan, and based on available information and extensive interviews, this investigation is intended to identify trends in the social and economic drivers for future estuary and shoreland uses and activities. It is designed to help develop a better understanding of the likely forces and actions affecting estuaries and shorelands that communities may need to plan for. While the project report refers to broad-scale coast-wide trends, the primary focus of the project was on the trends that may affect estuaries that Oregon has classified to accommodate some level of estuarine development. This assessment will help support local efforts to update economic opportunity analyses related to estuary and shoreland planning.
http://www.oregon.gov/LCD/OCMP/docs/Publications/AssessmentOfTrends_EstuariesAndShorelands.pdf
- Two estuary management plan update projects commenced during this time period. The first is an effort lead by the Partnership for Coastal Watersheds to update the Coos Bay estuary inventory. The OCMP has participated directly in this effort, providing both technical and financial support. It is anticipated that upon completion, this updated inventory will be incorporated into the Coos Bay Estuary Management Plan by local government jurisdictions.
<http://www.partnershipforcoastalwatersheds.org/coos-estuary-inventory-subcommittee-3/>
- The second plan update project is a recently launched effort by Coos County to update the Coquille River Estuary Management Plan. The OCMP is providing technical support for this effort. Both of these plan modernization efforts are anticipated to result in program changes in the form of amended local estuary management plans, though the final adoption of these changes will likely occur after 2015.

III. Assessment



Phase I Assessments



Wetlands

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated or saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR 328.3(b)]. See also pg. 17 of the CZMA Performance Measurement Guidance¹ for a more in-depth discussion of what should be considered a wetland.

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

The tables below indicate the extent, status, and trends of wetlands in the Oregon’s coastal counties.

Source: NOAA’s Land Cover Atlas² and C-CAP data³

Coastal Wetlands Status and Trends		
Current state of wetlands in 2010 (acres)	278,144	
Percent net change in total wetlands (% gained or lost)	from 1996-2010	from 2006-2010
	-0.45%	-0.53%
Percent net change in freshwater (palustrine wetlands) (% gained or lost)	from 1996-2010	from 2006-2010
	-0.16%	-0.93%
Percent net change in saltwater (estuarine) wetlands (% gained or lost)	from 1996-2010	from 2006-2010
	+0.11%	-0.06%

How Wetlands Are Changing		
Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2010 (Sq. Miles)	Area of Wetlands Transformed to Another Type of Land Cover between 2006-2010 (Sq. Miles)
Development	0.50	0.36
Agriculture	0.07	0.01

¹ <http://coastalmanagement.noaa.gov/backmatter/media/czmapmsguide11.pdf>

² <http://www.csc.noaa.gov/ccpatlas/>.

³ <http://www.csc.noaa.gov/digitalcoast/data/ccaphighres>

Barren Land	0.93	0.17
Water	1.03	0.47

1. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.

Management Characterization:

1. The table below indicates if there have been any significant changes at the state level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment.

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.
 - a. Several coastal communities completed local wetland inventories and adopted implementing land use regulations as authorized by Oregon statute and rule. Communities completing inventories since the last assessment were Newport, Yachats, Florence and Arch Cape (Clatsop County).
 - b. These local planning efforts were not specifically 309 driven changes, but the OCMP provides grant support and technical assistance to these projects.
 - c. The outcomes of these local planning efforts include accurate, locally accessible and maintained inventories of wetland resources, and the implementation of land use-based regulations for the conservation and management of wetlands. The results are improved levels certainty and predictability for both wetland conservation and local community development decisions.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High X
 Medium

Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

As finite, critical resources of fundamental ecological value, wetlands remain a high priority in Oregon. While the Department of State Lands plays a lead role in conserving the state's wetland resources through its permitting authority, Oregon's statewide planning program also fills a key role in managing and protecting wetlands at the local community planning level. Stakeholder responses expressed strong support for continued work to improve management and protection of Oregon's wetland resources through this advance planning approach. Although important advancements have been made in improved inventory data and regulatory standards, there are still significant needs and gaps at the land use planning level. Stakeholders engaged included local governments, state agency partners involved in wetland regulation and management, and NGOs with interests in coastal resource management and conservation.

Coastal Hazards

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea level rise; Great Lake level change; land subsidence; and saltwater intrusion.

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Flooding:

Source: NOAA's State of the Coast "Population in the Floodplain" viewer⁴ and summarized by coastal county through NOAA's Coastal County Snapshots for Flood Exposure.⁵

Population in the Coastal Floodplain			
	2000	2010	Percent Change from 2000-2010
No. of people in coastal floodplain ⁶	72,334	80,450	+10%
No. of people in coastal counties ⁷	611,645	653,112	+9.3%
Percentage of people in coastal counties in coastal floodplain	11.8%	12.3%	+.05%

2. Shoreline Erosion:

Source: NOAA's State of the Coast "Coastal Vulnerability Index."⁸

Vulnerability to Shoreline Erosion		
Vulnerability Ranking	Miles of Shoreline Vulnerable	Percent of Coastline
Very low (>2.0m/yr) accretion	10	1%
Low (1.0-2.0 m/yr) accretion	0	0%

⁴ <http://stateofthecoast.noaa.gov/pop100yr/welcome.html>.

⁵ www.csc.noaa.gov/digitalcoast/tools/snapshots

⁶ <http://stateofthecoast.noaa.gov/pop100yr/welcome.html>.

⁷ <http://www.csc.noaa.gov/digitalcoast/data/stics>.

⁸ <http://stateofthecoast.noaa.gov/vulnerability/welcome.html>

Moderate (-1.0 to 1.0 m/yr) stable	543	97%
High (-1.1 to -2.0 m/yr) erosion	6	1%
Very high (<-2.0 m/yr) erosion	0	0%

3. Sea Level Rise:

Source: NOAA's State of the Coast "Coastal Vulnerability Index".⁹

Coastal Vulnerability to Historic Sea Level Rise		
Vulnerability Ranking	Miles of Shoreline Vulnerable	Percent of Coastline
Very low	345	61%
Low	213	38%
Moderate	0	0%
High	0	0%
Very high	0	0%

4. Other Coastal Hazards:

Type of Hazard	General Level of Risk ¹⁰ (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	M
Geological hazards (e.g., tsunamis, earthquakes)	H
Shoreline erosion ¹¹	M
Sea level rise	M
Land subsidence	L
Saltwater intrusion	L
Other (please specify)	

5. If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or climate change risk assessment or plan may be a good resource to help respond to this question.

Oregon Resilience Plan

Directed by the Oregon Legislative Assembly, ***The Oregon Resilience Plan*** was completed and published in February, 2013. The plan reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing

⁹ <http://stateofthecoast.noaa.gov/vulnerability/welcome.html>

¹⁰ Risk is defined as "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

¹¹ NOAA State of the Coastal Vulnerability to Sea Level Rise Tool <http://stateofthecoast.noaa.gov/vulnerability/welcome.html>.

during and after a Cascadia earthquake and tsunami. The plan includes a specific section addressing the unique risks faced by Oregon’s coast.

http://www.oregon.gov/OMD/OEM/osspace/docs/Oregon_Resilience_Plan_Final.pdf

Climate Change Adaptation Framework

Developed through the collaborative effort of the directors of several state agencies, universities, research institutions and extension services, the **Climate Change Adaptation Framework** provides a framework for state agencies to identify authorities, actions, research, and resources needed to increase Oregon’s capacity to address the likely effects of a changing climate. The plan identifies a broad range of expected changes to Oregon’s climate in the coming decades. It identifies risks, lays out short-term priorities, and provides momentum and direction for Oregon to prepare for future climate change. The framework plan was developed in parallel with the Oregon Climate Assessment Report (OCAR) by the Oregon Climate Change Research Institute (OCCRI).

http://www.oregon.gov/energy/GBLWRM/docs/Framework_Final_DLCD.pdf

Management Characterization:

1. The table below indicates management approaches employed by Oregon and if significant state-level changes (positive or negative) have occurred that could impact the OCMP’s ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these that address:			
<i>elimination of development/redevelopment in high-hazard areas</i>	Y	Y	N
<i>management of development/redevelopment in other hazard areas</i>	Y	Y	N
<i>climate change impacts, including sea level rise or Great Lake level change</i>	Y	Y	N
Hazards planning programs or initiatives that address:			
<i>hazard mitigation</i>	Y	Y	Y
<i>climate change impacts, including sea level rise</i>	Y	Y	Y
Hazards mapping or modeling programs or initiatives for:			
<i>sea level rise</i>	N	Y	N
<i>other hazards (coastal erosion; tsunami)</i>	Y	Y	Y

2. Briefly state how “high-hazard areas” are defined in your coastal zone.

The OCMP does not employ a singular definition of “high hazard areas”. In general, the following hazard areas are subject to mandatory land use limitations and/or development standards for reducing risk:

- Floodplains (1% probability, both river and ocean);
 - Beaches, active and conditionally stable foredunes, and interdune areas subject to ocean flooding;
 - Other areas of geologic instability, including areas subject to chronic coastal erosion and landslides;
 - Areas subject to tsunami inundation.
3. For any management categories with significant changes briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Hazard Mitigation Planning

Neskowin Coastal Erosion Adaptation Plan

- a. Tillamook County and the unincorporated community of Neskowin, in collaboration with the OCMP, recently completed the adoption process for the ***Neskowin Coastal Erosion Adaptation Plan***. The plan and implementing regulations provide some innovative concepts for hazard management that have potentially broad application on the Oregon coast.
- b. These changes in local hazard management and regulation were not specifically 309 driven, but were leveraged by the OCMP’s current 309 strategy. The OCMP provided both financial and technical support for these efforts.
- c. The success of this planning effort has generated widespread interest on the coast, and the process provides a blueprint for the success of similar efforts in other communities.
<http://www.co.tillamook.or.us/gov/ComDev/documents/planning/Website%20Forms/Revised%20Neskowin%20Adaptation%20Plan%2025Jun14.pdf>

Oregon Resilience Plan

- a. Directed by the Oregon Legislative Assembly, ***The Oregon Resilience Plan*** was completed and published in February, 2013. The plan reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing during and after a Cascadia earthquake and tsunami. The plan includes a specific section addressing the unique risks faced by Oregon’s coast.
- b. ***The Oregon Resilience Plan*** was a statewide effort and was not 309 or CZM driven.

- c. The plan has received widespread notice in the media and in Oregon’s coastal communities. As a result, recognition of the need to plan for the impacts of a Cascadia event tsunami has increased substantially in many at-risk coastal communities.

http://www.oregon.gov/OMD/OEM/ossnac/docs/Oregon_Resilience_Plan_Final.pdf

Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities

- a. This tsunami land use guidance manual was developed by DLCD in partnership with an advisory committee comprised of representatives of local government and state agencies, and assisted by Cogan Owens Cogan, a multi-disciplinary consulting firm. The purpose of the publication is to provide guidance to vulnerable communities for incorporating tsunami resilience measures into local land use programs. It provides comprehensive information focused on land use planning approaches for reducing tsunami hazard risk and implementing important land use resilience measures.
<http://www.oregon.gov/LCD/OCMP/docs/Publications/TsunamiGuide20140108.pdf>
- b. The tsunami land use guidance document was developed in accordance with the OCMP’s Section 309 strategy for 2011-2015.
- c. The department began work to assist communities in efforts to implement the guidance in early 2014. It is anticipated that this work will result in up to date local planning policies and regulations addressing tsunami hazard risk reduction.

South Clatsop County Resilience Guide: Guidelines for Achieving Community Resilience

- a. This is a pilot project supported by NOAA’s Crest program to foster networks for coastal community resilience. This project seeks to provide a more cohesive context to local planning for natural hazards. It includes guidance that can be implemented in other coastal communities for assessing and improving community resilience to natural hazards.
- b. This project is not specifically 309 driven or supported, but the OCMP is playing a lead role in this planning effort.
- c. This CRest supported planning effort has the potential to significantly change the model used in planning for natural hazards in small communities, by including such considerations as continuity and recovery planning, that have not typically been addressed in current plans. This additional focus on post-disaster recovery could direct and influence future planning efforts for land use and infrastructure development.

Climate Change Impact Planning

Regional Framework for Climate Adaptation—Clatsop and Tillamook Counties

- a. The department is currently working with Oregon Sea Grant on a “proof of concept” project in Clatsop and Tillamook counties intended to align all local efforts related to planning for future climate conditions. Completion is expected in the spring of 2015.
- b. This project is not specifically 309 driven or supported, but the OCMP is playing a lead role in this planning effort.
- c. This project will provide a prototype of a broad planning framework that integrates climate change, hazards planning, natural resources, and watershed management practices. It is designed to step down Oregon’s Climate Change Adaptation Framework to a local planning

scale. It is anticipated that this will provide a replicable approach to climate change adaptation planning at the local level.

Hazard Mapping and Modeling

Coastal Erosion Hazard Risk Zone Mapping

- a. The Oregon Department of Geology and Mineral Industries (DOGAMI), completed a series of technical reports, including digital mapping, documenting the risks associated with shoreline erosion on Oregon’s coast. These reports cover the majority of Oregon’s ocean shore, including those areas with the most at-risk development. An example of these reports can be reviewed here: http://newportoregon.gov/dept/pln/documents/DOGAMI_Report.pdf
- b. The last of these technical reports were completed as a part of and funded through OCMP’s 2011-2015 Section 309 Strategy.
- c. Incorporation of these maps into local land use plans and implementing regulations was accomplished by several coastal communities during the last assessment period, and it is anticipated that additional communities can benefit from the adoption and use of these products.

Tsunami Inundation Maps

- a. The Oregon Department of Geology and Mineral Industries (DOGAMI) recently completed publication of the ***Tsunami Inundation Maps (TIM series)***; see [TIM map publication overview](#) (PDF). These maps provide Oregon coastal communities with greatly improved information on the level and extent of risk from both distant and local (Cascadia) tsunami events.
- b. The development of these map products was not 309 or CZM driven; however, the OCMP assisted DOGAMI in coordinating with local governments during the publication process.
- c. The OCMP has produced guidance for the use of these maps by local governments for land use planning and evacuation facility planning. It is anticipated that these map products used in conjunction with the guidance will facilitate improved local planning for tsunami risk reduction.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	<u> X </u>
Medium	<u> </u>
Low	<u> </u>

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The OCMP has placed a priority on and devoted significant effort to improving management of coastal hazards. Substantial work has been completed during the present (2011-2015) 309 cycle, including the completion of a local coastal hazard adaption plan in Tillamook County (which included both financial and technical support from the OCMP), the development of land use guidance for local tsunami resilience efforts, and the completion of a pilot project to provide enhanced mapping of coastal shore hazard risk zones. In addition, the OCMP has provided technical support for a number of local efforts to improve coastal hazards management. These efforts have made it clear that there is much additional work to be done to provide technical tools and support for improved local, on the ground, management efforts. Stakeholder responses solicited for this assessment consistently ranked coastal hazards as a high priority for continued program improvements. Stakeholders engaged included local governments, state agency partners and NGOs with interests in coastal land use and development issues.

Public Access

Section 309 Enhancement Objective: Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below provides data on public access availability within the coastal zone.

Public Access Status and Trends			
Type of Access	Current number	Changes or Trends Since Last Assessment (↑, ↓, -, unkwn)	Cite data source
Beach access sites	627	unkwn	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Shoreline (other than beach) access sites	318	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Recreational boat (power or nonmotorized) access sites	163	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Number of designated scenic vistas or overlook points	235	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Number of fishing access points (i.e. piers, jetties)	5	unkwn	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010
Coastal trails/ boardwalks	No. of Trails/ boardwalks 843	↑	Public Access Site Metrics for the Oregon Coastal Zone, OCMP, 2010 (this is a point data set, so no length calculations are possible)
	Miles of Trails/boardwalks		
	N/A		
Number of acres parkland/open	Total sites	↑	

Public Access Status and Trends			
Type of Access	Current number	Changes or Trends Since Last Assessment (↑, ↓, -, unkwn)	Cite data source
space	Sites per miles of shoreline 0.24		
Other (please specify)			

2. Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties.¹²

The population within Oregon’s coastal shoreline counties is projected to increase by nine percent between 2010 and 2020. It is anticipated that demand for coastal public access will follow a similar trend of modest but steady increases. The primary management authority for coastal public access is the Oregon Parks and Recreation Department; assessment of demand and management of public access resources is accomplished primarily through the Oregon Ocean Shore Management Plan.

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

N/A

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Operation/maintenance of existing facilities	Y	N	N

¹² Source: NOAA’s Coastal Population Report: 1970-2020 (Table 5, pg. 9): <http://stateofthecoast.noaa.gov/coastal-population-report.pdf>

Acquisition/enhancement programs	Y	N	N
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2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

3. Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	N	Y	In progress
Web address (if applicable)	NA	http://www.coastalatlant.net/coastalaccess/	In progress
Date of last update	NA	2010	2015
Frequency of update	NA	Decade	2020

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low X

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Oregon is one of just a few states with explicit statutory protections guaranteeing free and uninterrupted public use of all ocean beaches. In addition, the state has an extensive parks system that provides beach access, camping and other recreational opportunities along the entire coastline.

The OCMP incorporates strong regulatory provisions requiring the retention of existing coastal public access points. The OCMP's Coastal Atlas provides both substantive and qualitative data on existing access points, scenic viewpoints and other coastal recreational opportunities. Together, these program elements provide a successful and sustainable system of public access to Oregon's coastal beaches and waters. There are no identified needs for program enhancement at this time.

Marine Debris

Section 309 Enhancement Objective: Reducing marine debris entering the nation’s coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below characterizes the existing status and trends of marine debris in Oregon’s coastal zone based on the best available data.

Source of Marine Debris	Existing Status and Trends of Marine Debris in Coastal Zone		
	Significance of Source (H, M, L, unknwn)	Type of Impact (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknwn)
<i>Land-based</i>			
Beach/shore litter	L	Aesthetic/User Conflict/Public Safety	-
Dumping	L	Aesthetic/Public Safety	-
Storm drains and runoff	L	Aesthetic/Resource Effects	-
Fishing (e.g., fishing line, gear)	L	Aesthetic/Resource Effects	-
Other (please specify)			-
<i>Ocean or Great Lake-based</i>			
Fishing (e.g., derelict fishing gear)	M	Resource Effects/User Conflicts	↓
Derelict vessels	M	Aesthetic/Resource Effects	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	L	Aesthetic/Public Safety	-
Hurricane/Storm	L	Aesthetic/Public Safety	-
Tsunami	M	Aesthetic/Public Safety/Resource Effects	↑
Other (please specify)			

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

N/A

Management Characterization:

1. The table below indicates whether the approach is employed by Oregon and if there have been any significant state level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	N
Marine debris removal programs	Y	N	Y

2. The information below briefly describes significant changes in marine debris removal programs since the last 309 assessment:

- a. Describe the significance of the changes

In response to the arrival on Oregon’s coast of debris from the Tohoku tsunami, in 2012 Oregon Governor John Kitzhaber directed Oregon’s Office of Emergency Management to lead the Oregon Tsunami Debris Task Force. The task force in turn created the Japan Tsunami Marine Debris Plan, which sets forth a comprehensive strategy for coordinating timely, comprehensive and effective response to marine debris incidents on Oregon’s coast. http://www.oregon.gov/OMD/OEM/public_information/jtmd_plan.pdf

- b. Specify if they were 309 or other CZM-driven changes:

The creation of the Oregon Tsunami Debris Task Force and the Japan Tsunami Marine Debris Plan was not 309 or CZM driven.

- c. Characterize the outcomes and likely future outcomes of the changes:

The outcome of the creation of the Tsunami Debris Task Force is a standing interagency team charged with incident preparedness and response, public safety, cleanup, and public outreach to address marine debris affecting Oregon's coastline.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____
Low	<u> X </u>

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

While marine debris is an important issue in Oregon, the state has established an effective partnership of agencies and non-profits to address and manage the issue. Stakeholder input received did not identify any major gaps in current management efforts; stakeholders engaged included both agencies and NGOs currently involved in marine debris management efforts.

Cumulative and Secondary Impacts

Section 309 Enhancement Objective: Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below indicates the change in population and housing units in Oregon’s coastal counties between 2012 and 2007.

Source: National Ocean Economics Program Data on population and housing.¹³

Trends in Coastal Population and Housing Units				
Year	Population		Housing	
	Total (# of people)	% Change (compared to 2002)	Total (# of housing units)	% Change (compared to 2002)
2007	690,246	+2.07	324,485	+4.77
2012	704,513		339,950	

2. The table below indicates the status and trends for various land uses in Oregon’s coastal counties between 2006 and 2011.

Source: NOAA’s Land Cover Atlas¹⁴ and high-resolution C-CAP data.¹⁵

Distribution of Land Cover Types in Coastal Counties		
Land Cover Type	Land Area Coverage in 2011 (Acres)	Gain/Loss Since 2006 (Acres)
Developed, High Intensity	43,424	+1,184
Developed, Low Intensity	85,6238	+1,082
Developed, Open Space	30,285	+2,445
Grassland	576,275	+50,509
Scrub/Shrub	1,643,962	+267,462
Barren Land	144,499	-104,761
Open Water	942,336	+4,397
Agriculture	421,338	-2,771

¹³ www.oceaneconomics.org/.

¹⁴ www.csc.noaa.gov/ccapatlas/.

¹⁵ www.csc.noaa.gov/digitalcoast/data/ccaphighres.

Distribution of Land Cover Types in Coastal Counties		
Land Cover Type	Land Area Coverage in 2011 (Acres)	Gain/Loss Since 2006 (Acres)
Forested	6,923,354	-238,554
Woody Wetland	133,062	-845
Emergent Wetland	100,838	+1,542

3. The two tables below indicate the status and trends for developed areas in the Oregon's coastal counties between 2006 and 2011.

Source: NOAA's Land Cover Atlas¹⁶ and high-resolution C-CAP data¹⁷

Development Status and Trends for Coastal Counties			
	2006	2011	Percent Net Change
Percent land area developed	1.41	1.45	+0.04
Percent impervious surface area	0.50	0.51	+0.01

How Land Use Is Changing in Coastal Counties	
Land Cover Type	Areas Lost to Development Between 2006-2011 (Acres)
Barren Land	588.8
Emergent Wetland	204.8
Woody Wetland	179.2
Open Water	0
Agriculture	1,593.6
Scrub/Shrub	428.8
Grassland	1,158.4
Forested	716.8

4. The table below indicates the percent of Oregon's shoreline that falls into each shoreline type.¹⁸

Source: NOAA's State of the Coast "Shoreline Type" viewer.¹⁹

Shoreline Types	
Surveyed Shoreline Type	Percent of Shoreline
Armored	4
Beaches	37
Flats	15
Rocky	12
Vegetated	33

¹⁶ www.csc.noaa.gov/ccapatlas/.

¹⁷ www.csc.noaa.gov/digitalcoast/data/ccaphighres.

¹⁸ Note: Data are from NOAA's Environmental Sensitivity Index (ESI) Maps.

¹⁹ <http://stateofthecoast.noaa.gov/shoreline/welcome.html>

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality and habitat fragmentation, since the last assessment to augment the national data sets.

N/A

Management Characterization:

1. The table below indicates if the management approach is employed by Oregon and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	Y	N
Guidance documents	Y	Y	N
Management plans (including SAMPs)	Y	Y	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Neskowin Coastal Erosion Adaptation Plan

- a. Tillamook County and the unincorporated community of Neskowin, in collaboration with the OCMP, recently completed the adoption process for the ***Neskowin Coastal Erosion Adaptation Plan***. This special area management plan and implementing regulations provide some innovative concepts for hazard management that have potentially broad application on the Oregon coast.

- b. These changes in local hazard management and regulation were not specifically 309 driven, but were leveraged by the OCMP’s current 309 strategy. The OCMP provided both financial and technical support for these efforts.
- c. The success of this planning effort has generated widespread interest on the coast, and the process provides a blueprint for the success of similar efforts in other communities.
<http://www.co.tillamook.or.us/gov/ComDev/documents/planning/Website%20Forms/Revised%20Neskowin%20Adaptation%20Plan%2025Jun14.pdf>

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	X
Low	

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The OCMP is based in large part on the state’s strong comprehensive land use planning laws. These laws mandate the local development of coordinated, long range comprehensive plans implemented by specific land use regulations. These plans anticipate and address a variety of cumulative and secondary effects of growth and development, and incorporate strong growth management controls to minimize significant adverse effects. Likewise, the state’s regulatory framework for water, wetlands, fish and wildlife habitat and endangered species provides substantial mechanisms to avoid and mitigate adverse effects. Stakeholder input received did not identify any major gaps in current management efforts; stakeholders engaged included both agencies and NGOs currently involved in a variety of local planning and resource management efforts in Oregon’s coastal zone.

Special Area Management Planning

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a Special Area Management Plan (SAMP) as “a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making.”

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below identifies geographic areas in Oregon’s coastal zone subject to use conflicts that may be able to be addressed through a special area management plan (SAMP). This includes areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans
	Major conflicts/issues
Ocean shore	Need for coastal hazard adaptation planning (addressing sea level rise and climate change); need for tsunami hazard area resilience planning.
Estuaries and shorelands	Need to incorporate updated resource information into existing management plans; need for improved coordination between existing local management plans with current state and federal regulatory processes.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

Assessment of Oregon’s Regulatory Framework for Managing Estuaries

This report was prepared as a component part of a multi-year effort by the Department of Land Conservation and Development to facilitate the modernization of local estuary management plans. The analysis provides a qualitative assessment of the current state regulatory framework for managing estuaries, including the provisions of and administrative rules for Statewide Planning Goal 16, Estuarine Resources, Statewide Planning Goal 17, Coastal Shorelands, and other program authorities, for the purpose of determining suitability to meet future needs for the management of Oregon’s estuaries. The report identifies several priorities for improving estuary plans, and provides recommendations for future work.

http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_RegulatoryAssessment.aspx

Assessment of Trends Affecting Planning for Oregon’s Estuaries and Shorelands

Prepared for DLCD by Cogan Owens Cogan, and based on available information and extensive interviews, this investigation identifies trends in the social and economic drivers for future estuary and shoreland uses and activities. It is designed to help develop a better understanding of the likely forces and actions affecting estuaries and shorelands that communities may need to plan for. While the project report refers to broad-scale coast-wide trends, the primary focus of the project was on the trends that may affect estuaries that Oregon has classified to accommodate some level of estuarine development. This assessment will help support local efforts to update economic opportunity analyses related to estuary and shoreland planning.

http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_TrendsAssessment.aspx

Management Characterization:

- 1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP policies, or case law interpreting these	Y	Y	N
SAMP plans	Y	Y	Y

- 2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;

- b. Specify if they were 309 or other CZM-driven changes;
- c. Characterize the outcomes or likely future outcomes of the changes.

Oregon Territorial Sea Plan

- a. Oregon’s Territorial Sea Plan was amended to add a chapter addressing marine renewable energy development. The amendment includes a spatial planning component addressing the siting of marine renewable energy development based on a comprehensive assessment of important marine resources and uses. This inventory of spatial data and maps has been incorporated into the TSP. In addition, the Department of State Lands developed and adopted administrative rules to regulate marine renewable energy development in accordance with the amended provisions of the TSP.
- b. Yes, the policy changes were developed pursuant to the OCMP’s 309 Assessment and Strategy for 2011-2015.
- c. The 2013 changes to the TSP have created a comprehensive statewide spatial siting plan; resource inventory evaluation requirements; project review process; and a set of regulatory standards for marine renewable energy development to protect fisheries, ecological resources and marine habitat, recreation uses, aesthetic resources and other beneficial uses of the territorial sea.
http://www.oregon.gov/LCD/OCMP/Pages/Ocean_TSP.aspx

Neskowin Coastal Erosion Adaptation Plan

- a. Tillamook County and the unincorporated community of Neskowin, in collaboration with the OCMP, recently completed the adoption process for the ***Neskowin Coastal Erosion Adaptation Plan***. This plan and implementing regulations provide some innovative concepts for hazard management that have potentially broad application on the Oregon coast.
- b. These changes in local hazard management and regulation were not specifically 309 driven, but were leveraged by the OCMP’s current 309 strategy. The OCMP provided both financial and technical support for these efforts.
- c. The success of this planning effort has generated widespread interest on the coast, and the process provides a blueprint for the success of similar efforts in other communities.
<http://www.co.tillamook.or.us/gov/ComDev/documents/planning/Website%20Forms/Revised%20Neskowin%20Adaptation%20Plan%2025Jun14.pdf>

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High X
 Medium
 Low

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The Oregon Coastal Management Program relies largely on comprehensive planning and special area management planning to achieve coastal management objectives. Enhancement areas that were consistently given a high priority by responding stakeholders included wetlands and coastal hazards; both are currently managed in Oregon at least in part through the application of SAMPs. Opportunities for program changes that address these priority enhancement areas will therefore involve the development, application and improvement of special area management planning concepts. Stakeholders engaged included local governments with primary land use planning responsibilities, as well as agencies and NGOs currently involved in a variety of planning and resource management efforts in Oregon's coastal zone.

Ocean and Great Lakes Resources

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources.
§309(a)(7)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. Understanding the ocean economy can help improve management of the resources it depends on. The table below indicates the status of Oregon's ocean economy as of 2010, as well as the change since 2005.

Source: Economics: National Ocean Watch (ENOW),²⁰

Status of Ocean Economy for Oregon's Coastal Counties (2010)				
	Establishments (# of Establishments)	Employment (# of Jobs)	Wages (Millions of Dollars)	GDP (Millions of Dollars)
Living Resources	258	1,865	60.1	135.5
Marine Construction	54	592	42.2	101.6
Marine Transportation	155	4,928	315.5	1,300
Offshore Mineral Extraction	21	308	16.6	52
Tourism & Recreation	1,714	21,577	374	717.7
All Ocean Sectors	2,254	30,547	883.1	2,400

Change in Ocean Economy for Oregon's Coastal Counties (2005-2010)				
	Establishments (% change)	Employment (% change)	Wages (% change)	GDP (% change)
Living Resources	1.57	6.57	30.29	19.9
Marine Construction	-20.59	-15.55	18.26	16.19
Marine Transportation	-8.82	-1.34	31.24	100.05
Offshore Mineral Extraction	-8.7	-36.49	-29.63	-26
Tourism &	7.39	3.48	17.07	19.86

²⁰ www.csc.noaa.gov/enow/explorer/.

Change in Ocean Economy for Oregon's Coastal Counties (2005-2010)				
	Establishments (% change)	Employment (% change)	Wages (% change)	GDP (% change)
Recreation				
All Ocean Sectors	3.87	.02	19.5	46.55

2. The table below characterizes how the threats to and use conflicts over ocean resources in Oregon's coastal zone have changed since the last assessment.

Significant Changes to Oregon's Ocean Resources and Uses	
Resource/Use	Change in the Threat to the Resource or Use Conflict Since Last Assessment (↑, ↓, -, unkwn)
Resource	
<i>Benthic habitat (including coral reefs)</i>	↓
<i>Living marine resources (fish, shellfish, marine mammals, birds, etc.)</i>	↑
<i>Sand/gravel</i>	-
<i>Cultural/historic</i>	-
<i>Other (please specify)</i>	
Use	
<i>Transportation/navigation</i>	↓
<i>Offshore development²¹</i>	↓
<i>Energy production</i>	↓
<i>Fishing (commercial and recreational)</i>	↓
<i>Recreation/tourism</i>	↓
<i>Sand/gravel extraction</i>	-
<i>Dredge disposal</i>	-
<i>Aquaculture</i>	-
<i>Other (please specify)</i>	

3. For the ocean resources and uses in Table 2 (above) that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, the table below characterize the major contributors to that increase.

Major Contributors to an Increase in Threat or Use Conflict to Oregon's Ocean Resources	
Resource	Major Reasons Contributing to Increased Resource Threat or Use Conflict (Note All that Apply with "X")

²¹ Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry is captured under the "energy production" category.

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm & Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
<i>Example: Living marine resources</i>		X	X	X	X	X		X	X			
Living marine resource - shellfish											X	
[Resource or Use from Table 2]												

- If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

West Coast Ocean Acidification and Hypoxia Science Panel

<http://westcoastoah.org/>

California Ocean Science Trust and Oregon State University Institute for Natural Resources - On behalf of the Hypoxia Impacts on Physiology Working Group of the West Coast Ocean Acidification and Hypoxia Science Panel, May 22, 2014

<http://calost.org/science-advising/?page=ocean-acidification-and-hypoxia-panel>

Management Characterization:

- The table below indicates if the approach is employed by Oregon and if any significant state-level changes (positive or negative) in the management of ocean resources have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	Y - positive
Regional comprehensive ocean/Great Lakes management plans	N	N	NA
State comprehensive ocean/Great Lakes management plans	Y	N	Y - positive
Single-sector management plans	Y	N	Y – positive

2. For any management categories with significant changes briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
- a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes;
 - c. Characterize the outcomes or likely future outcomes of the changes.
- a. Oregon’s Territorial Sea Plan was amended to add a chapter addressing marine renewable energy development. The amendment includes a spatial planning component addressing the siting of marine renewable energy development based on a comprehensive assessment of important marine resources and uses. This inventory of spatial data and maps has been incorporated into the TSP. In addition, the Department of State Lands developed and adopted administrative rules to regulate marine renewable energy development in accordance with the amended provisions of the TSP.
 - b. Yes, the policy changes were developed pursuant to the OCMP’s 309 Assessment and Strategy for 2011-2015.
 - c. The 2013 changes to the TSP have created a comprehensive statewide spatial siting plan; resource inventory evaluation requirements; project review process; and a set of regulatory standards for marine renewable energy development to protect fisheries, ecological resources and marine habitat, recreation uses, aesthetic resources and other beneficial uses of the territorial sea.

Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	Y-Territorial Sea Plan, completed 1994; amended 2000; 2013	
Under development (Y/N)	N	
Web address (if available)	http://www.oregon.gov/LCD/OCMP/Pages/Ocean_TSP.aspx	
Area covered by plan	Oregon Territorial Sea	

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	<input type="checkbox"/>
Medium	<input checked="" type="checkbox"/>
Low	<input type="checkbox"/>

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Given the currency of the recent amendments to the Territorial Sea Plan, this enhancement area is given a medium priority, as it is not anticipated that additional work leading to a program change will be undertaken during the upcoming 309 cycle. In addition, Oregon now has a process in place, mandated under the TSP, to periodically review and assess the effectiveness of the plan and amend it as necessary. This process will operate independent from 309 A & S cycle. The process and method of amending the TSP is established in statute and under the TSP, as recommended by the Ocean Policy Advisory Council, a legislatively created stakeholder advisory council.

Energy and Government Facility Siting

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)22

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below characterizes the status and trends of different types of energy facilities and activities in Oregon’s coastal zone based on best available data.

Status and Trends in Energy Facilities and Activities in the Coastal Zone				
Type of Energy Facility/Activity	Exists in CZ		Proposed in CZ	
	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)
<i>Energy Transport</i>				
Pipelines ²³	Y	–	Y	↑
Electrical grid (transmission cables)	Y	–	N	–
Ports	N	–	N	–
Liquid natural gas (LNG) ²⁴	N	–	Y	↑
Other (please specify)				
<i>Energy Facilities</i>				
Oil and gas	N	–	N	–
Coal	N	–	N	–
Nuclear ²⁵	N	–	N	–
Wind	N	–	Y	↑
Wave ²⁶	N	–	Y	↑

²² CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states:

“The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program.”

NOAA regulations at 15 C.F.R. § 923.52 further describe what states need to do regarding national interest and consideration of interests that are greater than local interests.

²³ For approved pipelines (1997-present): www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp

²⁴ For approved FERC jurisdictional LNG import/export terminals: www.ferc.gov/industries/gas/indus-act/lng/exist-term.asp

²⁵ The Nuclear Regulatory Commission provides a coarse national map of where nuclear power reactors are located as well as a list that reflects there general locations: www.nrc.gov/reactors/operating/map-power-reactors.html

²⁶ For FERC hydrokinetic projects: www.ferc.gov/industries/hydropower/gen-info/licensing/hydrokinetics.asp

Status and Trends in Energy Facilities and Activities in the Coastal Zone				
Type of Energy Facility/Activity	Exists in CZ		Proposed in CZ	
	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)	(# or Y/N)	Change Since Last Assessment (↑, ↓, -, unkwn)
Tidal ³⁶	N	-	N	-
Current (ocean, lake, river) ³⁶	N	-	N	-
Hydropower	N	-	N	-
Ocean thermal energy conversion	N	-	N	-
Solar	N	-	N	-
Biomass	N	-	N	-
Other (please specify)				

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.
3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance in the state’s coastal zone since the last assessment.

One significant federal facility was developed in Oregon’s coastal zone since the last assessment: the NOAA Marine Operations Center-Pacific (MOC-P) facility in Newport, which was completed in 2011. The facility is located on the south shore of Yaquina Bay on a site formerly occupied by a salmon ranching operation. The redevelopment of this site to accommodate the MOC-P included construction of 40,852 square feet of office and warehouse space, a 1,300-foot-long pier, and a small boat dock.

The NOAA Marine Operations Center-Pacific serves as a homeport for four NOAA research and survey ships and provides administrative, engineering, maintenance and logistical support for NOAA’s Pacific fleet. In all, the MOC-P supports nine ships, including vessels home ported in Hawaii and Alaska. The center and ships are part of the Silver Spring, Maryland based NOAA Office of Marine and Aviation Operations. The Newport facility also houses the Marine Operations Center directorate, which oversees both the Pacific and Atlantic marine centers and all NOAA ship operations.

Management Characterization:

1. The table below indicates if the approach is employed by Oregon and if significant state- level changes (positive or negative) that could facilitate or impede energy and government facility siting

and activities have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
State comprehensive siting plans or procedures	Y	N	Y

2. For any management categories with significant changes briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

- a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes;
 - c. Characterize the outcomes or likely future outcomes of the changes.
-
- a. Oregon’s Territorial Sea Plan was amended to add a chapter addressing marine renewable energy development. The amendment includes a spatial planning component addressing the siting of marine renewable energy development based on a comprehensive assessment of important marine resources and uses. This inventory of spatial data and maps has been incorporated into the TSP. In addition, the Department of State Lands developed and adopted administrative rules to regulate marine renewable energy development in accordance with the amended provisions of the TSP.
 - b. Yes, the policy changes were developed pursuant to the OCMP’s 309 Assessment and Strategy for 2011-2015.
 - c. The 2013 changes to the TSP have created a comprehensive statewide spatial siting plan; resource inventory evaluation requirements; project review process; and a set of regulatory standards for marine renewable energy development to protect fisheries, ecological resources and marine habitat, recreation uses, aesthetic resources and other beneficial uses of the territorial sea.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	_____
Medium	_____ X _____
Low	_____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

The two major energy facility issues affecting Oregon’s coastal zone are proposed LNG export facilities (Warrenton and Coos Bay) and associated pipelines, and the potential development of offshore renewable energy. For both proposed LNG facilities the FERC licensing process is in progress, therefore any program changes developed through this 309 cycle would not be applicable to these proposals. The management of offshore renewable energy development in the state’s territorial sea has been addressed through the comprehensive siting standards and spatial plan elements recently incorporated into Oregon’s Territorial Sea Plan. Additional changes to the TSP are not anticipated during the upcoming 309 period.

While Oregon will continue to devote significant resources to the review and management of energy facility development in the coastal zone, program changes in this area are not seen as a high priority during this assessment and strategy cycle. There was some stakeholder input suggesting that energy facility siting could be considered a high priority, but this input was directed primarily to the current LNG export proposals and, as indicated, these proposed developments would not be affected by any program changes implemented through this 309 cycle. Stakeholders engaged included local governments, state agency program partners, and various NGOs with interests in coastal management and development issues.

Aquaculture

Section 309 Enhancement Objective: Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

PHASE I (HIGH-LEVEL) ASSESSMENT:

Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the OCMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the OCMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. The table below characterizes the existing status and trends of aquaculture facilities in Oregon’s coastal zone based on the best available data.

Type of Facility/Activity	Status and Trends of Aquaculture Facilities and Activities		
	# of Facilities	Approximate Economic Value	Change Since Last Assessment (↑, ↓, -, unkwn)
Oyster farming	17	\$10,555,000	-

Source: USDA Census of Aquaculture (2013)

http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Aquaculture/aquacen.pdf

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.

Management Characterization:

1. The table below indicates if the approach is employed by Oregon and if there have been any state-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	N	Y	N
Other aquaculture statutes,	Y	Y	N

regulations, policies, or case law interpreting these			
---	--	--	--

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
 - a. Describe the significance of the changes;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low X

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Oyster farming is the sole commercial aquaculture enterprise presently operating in Oregon’s coastal zone. The industry has a generally stable recent history, although over the past decade, a number of operations have been adversely impacted by ocean acidification. Management is principally the responsibility of the Oregon Department of Agriculture; ODA works in cooperation with other resource agencies to assess and consider impacts of aquaculture operations on other coastal resources and uses. Stakeholder input did not identify any priority needs for program changes related to aquaculture. Stakeholders engaged included resource agencies involved in the management of aquaculture activities.

Phase II Assessments



Wetlands

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP’s ability to protect, restore, and enhance wetlands.

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within the coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone or specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea level rise/Great Lake level change; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	Geographic Scope <small>(throughout coastal zone or specific areas most threatened)</small>
Stressor 1	Hydrological alteration	Former tidal wetlands
Stressor 2	Development/fill	Throughout
Stressor 3		

2. Briefly explain why these are currently the most significant stressors or threats to wetlands within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

Hydrological alteration of Oregon’s tidal wetlands (mostly diking and draining) is primarily historical, but these alterations serve to reduce wetland functions and values. While new development and fill is substantially regulated, cumulative effects from this activity continue to impact wetland resources.

3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Climate change impacts	Regional scale climate projections

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if

significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	N
Wetland mapping and GIS	Y	Y	Y
Watershed or special area management plans addressing wetlands	Y	Y	N
Wetland technical assistance, education, and outreach	Y	Y	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
 - a. Describe significant changes since the last assessment;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

Oregon Estuary and Shoreland Habitat Atlas.

- a. In 2014 the OCMP completed and published the ***Oregon Estuary and Shoreland Habitat Atlas***. The Oregon estuary and shoreland habitat project was a 24 month project to produce estuary and shorelands habitat map information, using the federally adopted Coastal and Marine Ecological Classification Standard (CMECS) version 4.0. This project covered 21 Oregon estuaries (all major estuaries except the Columbia River).
- b. These data products were generated through a Section 309 Project of Special Merit grant.
- c. With the completion of the CMECS habitat classification project, digital information products and data were generated and published to the OCMP’s Oregon Coastal Atlas and the Estuary Planning Atlas Tool. These data sets and mapping tools are now available to all Oregon estuary planners and managers, and provide a fundamental resource inventory tool for the update of estuary management plans.

<http://www.coastalatlantlas.net/cmecs>

Oregon Estuary Data Viewer

- a. In 2012 the OCMP completed and published the ***Oregon Estuary Data Viewer*** as a component of the ***Oregon Coastal Atlas***. The Estuary Data Viewer was designed to meet the needs of Oregon's local planners working in and around estuaries. The goal of the viewer is to make estuary related data easier to find and allows users to view, overlay, evaluate, and interact with digital data more efficiently while utilizing the large spatial data base of the Coastal Atlas. The viewer supports tasks related to statewide planning Goals 16 and 17 and local estuary management plans.
 - b. This product was not specifically 309 related or supported, but is complementary to the OCMP's 2011-2015 309 strategy for estuary planning. It was initiated by the OCMP as a NOAA Coastal Fellow project.
 - c. With the completion of the Estuary Data Viewer, local planners and other users have easy access to a large array of spatial data related to estuaries. The availability of this resource to estuary planners and managers provides a fundamental tool for the local administration of estuary management plans.
<http://www.coastalatlantlas.net/index.php/tools/planners/63-estuary-data-viewer>
3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

Assessment of Oregon's Regulatory Framework for Managing Estuaries

This report was prepared as a component part of a multi-year effort by the Department of Land Conservation and Development to facilitate the modernization of local estuary management plans. The analysis provides a qualitative assessment of the current state regulatory framework for managing estuaries, including the provisions of and administrative rules for Statewide Planning Goal 16, Estuarine Resources, Statewide Planning Goal 17, Coastal Shorelands, and other program authorities, for the purpose of determining suitability to meet future needs for the management of Oregon's estuaries.

Principal conclusions of the assessment include:

- Oregon's planning based approach to estuary management has provided a strong foundation for estuarine resource conservation and development decisions. In particular, the management framework's strong emphasis on advance decision making based on spatial planning concepts has proven effective in providing a system-wide approach to management. Likewise, the locally focused nature of the estuary planning process has produced plans with broad based support and has increased awareness of the relationships between traditional community development planning and aquatic resource management.

- Estuary plans have not benefitted from incorporating updated resource inventory data and digital mapping technology.
- In the nearly three decades since most of Oregon’s estuary management plans were developed, the widespread public and agency engagement that characterized the original process has waned. The resultant decline in overall awareness and understanding of the role of the plans has reduced their effectiveness as foundational decision making tools.
- In some instances, the incorporation of highly detailed development decisions into plans has proven problematic. Changing market and other forces have resulted in the need to update these highly detailed plans at a scale and frequency beyond the capacity of local governments.
- The integration of estuary management plans with state and federal regulatory processes has not been fully realized. This results in duplication of effort in the plan implementation process and places technical demands on local governments that few have the capacity to fulfill.
- Finally, the overall design of the system presumes an ongoing local government capacity, in terms of staff and other resources, that is not currently present. As a result, local governments are challenged to administer and maintain estuary plans.

http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_RegulatoryAssessment.aspx

Identification of Priorities:

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Provide technical and financial support to local governments partners to update and improve the implementation of estuary management plans.

Description: Despite the general success and durability of Oregon’s estuary management plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

Management Priority 2: Provide technical and financial support to local governments partners to update inventories of potential estuarine wetland restoration sites.

Description: While all of Oregon’s remaining estuarine wetlands are subject to special area management plans (98% are in protected status), it is estimated that more than 70% of Oregon’s original tidal marsh has been lost to diking, fill and other alterations. Many of these former tidal wetlands have not been inventoried or assessed as a part of local management plans. There has been growing interest in and work related to tidal wetland restoration in Oregon, particularly as an element of salmon restoration efforts. While the original estuary management plans do include some identification of potential restoration and mitigation site, these inventories are outdated and typically incomplete. Many local governments lack the resources and capacity to complete the work of updating these inventories. The support of the OCMP to facilitate this work can be key to expanding local wetland protection programs and facilitating restoration and enhancement opportunities.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Habitat migration/impacts related to sea level rise
Mapping/GIS	Y	There is a need to assist local government partners in deploying GIS resources for local planning
Data and information management	Y	There is a need to provide updated digital data sets for wetland resources to local planning agencies
Training/capacity building	Y	Some local planning agencies lack sufficient capacity to undertake plan modernization efforts
Decision-support tools	N	
Communication and outreach	Y	There is a need to re-engage key agency partners and stakeholders in estuary and wetland management programs
Other (Specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes X
 No

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

There is an identified need to provide technical support to affected communities to update and improve the implementation of locally adopted estuary management plans and corresponding shoreland plan elements. To address this need, the OCMP intends to develop a strategy focused on facilitating and supporting local efforts to modernize these locally adopted SAMPs. The OCMP has established a foundation for this support through several recently completed efforts; in particular the ***Oregon Estuary and Shoreland and Habitat Atlas***, the ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***, and the ***Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands*** provide important resources for this effort. The primary focus of this strategy will be on incorporating the CMECS resource inventory product into local plans to enhance the utility of the plans and improve decision making. Other work on system improvements as identified in the assessment will be focused on improving regulatory coordination for better implementation of local plans.

Coastal Hazards

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.

1a. **Flooding In-depth** (for all states besides territories): Using data from NOAA's *State of the Coast* "Population in the Floodplain" viewer²⁷ and summarized by coastal county through NOAA's Coastal County Snapshots for Flood Exposure,²⁸ indicate how many people at potentially elevated risk were located within the state's coastal floodplain as of 2010. These data only reflect two types of vulnerable populations. You can provide additional or alternative information or use graphs or other visuals to help illustrate or replace the table entirely if better data are available. *Note: National data are not available for territories. Territories can omit this question unless they have similar alternative data or include a brief qualitative narrative description as a substitute.*

2010 Populations in Coastal Counties at Potentially Elevated Risk to Coastal Flooding ²⁹				
	Under 5 and Over 65 years old		In Poverty	
	# of people	% Under 5/Over 65	# of people	% in Poverty
Inside Floodplain	20,157	16	12,694	12
Outside Floodplain	107,649	84	89,839	88

1b. **Flooding In-depth** (for all states besides territories): Using summary data provided for critical facilities, derived from FEMA's HAZUS³⁰ and displayed by coastal county through NOAA's Coastal County Snapshots for Flood Exposure,³¹ indicate how many different establishments (businesses or employers) and critical facilities are located in the FEMA floodplain. You can provide more information or use graphs or other visuals to help illustrate or replace the table entirely if better information is available.

Critical Facilities in the FEMA Floodplain ⁴⁴						
	Schools	Police Stations	Fire Stations	Emergency Centers	Medical Facilities	Communication Towers
Inside Floodplain	29	3	14	0	2	12
Coastal Counties	322	51	109	4	16	94

²⁷ <http://stateofthecoast.noaa.gov/pop100yr/welcome.html>

²⁸ <http://www.csc.noaa.gov/digitalcoast/tools/snapshots>

²⁹ To obtain exact population numbers for the coastal floodplain, download the excel data file from the State of the Coast's "Population in Floodplain" viewer.

³⁰ <http://www.fema.gov/hazus>; can also download data from NOAA STICS <http://www.csc.noaa.gov/digitalcoast/data/stics>. Summary data on critical facilities for each coastal state is available on the ftp site.

³¹ <http://www.csc.noaa.gov/digitalcoast/tools/snapshots>

2. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards³² within the coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone or are specific areas most at risk?

	Type of Hazard	Geographic Scope (throughout coastal zone or specific areas most threatened)
Hazard 1	Geological (earthquake, tsunami)	Throughout
Hazard 2	Shoreline erosion	Throughout
Hazard 3	Flooding	Throughout

Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

The scientific understanding of the level of seismic and related tsunami risk on the Oregon coast is a relatively recent development. This understanding has advanced significantly in the last decade and has been documented in numerous reports and studies. The damage from the impending Cascadia subduction zone earthquake and tsunami will be extreme, and there is an urgent need for planning for the impacts of this event on several fronts. This need is fully identified in the ***Oregon Resilience Plan***: http://www.oregon.gov/OMD/OEM/ossprac/docs/Oregon_Resilience_Plan_Final.pdf

Shoreline erosion is the most significant chronic hazard affecting Oregon’s coast. Large segments of Oregon’s ocean shore are extensively developed with residential and commercial uses and attendant infrastructure and the pressure for additional ocean front development and re-development is substantial. Much of this existing and future development will be subject to risk from shoreline erosion. The risks associated with shoreline erosion on Oregon’s coast have been documented in a series of reports by the Oregon Department of Geology and Mineral Industries (DOGAMI), an example of which can be reviewed here: http://newportoregon.gov/dept/pln/documents/DOGAMI_Report.pdf

Coastal flooding risk is increasing in Oregon due to heightened storm intensity, increasing winter wave heights and long term sea level rise. A number of published studies have identified these trends; one which provides a summary analysis of potential climate change impacts on coastal flooding is ***Impacts of Climate Change on Coastal Erosion and Flood Probability in the Pacific Northwest***. http://www.geo.oregonstate.edu/files/geo/Ruggiero_Coastal%20Disasters_2008.pdf

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

³² See list of coastal hazards at the beginning of this assessment template.

Emerging Issue	Information Needed
N/A	

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Statutes, Regulations, and Policies:			
<i>Shorefront setbacks/no build areas</i>	Y	Y	N
<i>Rolling easements</i>	Y	Y	N
<i>Repair/rebuilding restrictions</i>	N	Y	N
<i>Hard shoreline protection structure restrictions</i>	Y	Y	N
<i>Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)</i>	Y	Y	N
<i>Repair/replacement of shore protection structure restrictions</i>	N	Y	N
<i>Inlet management</i>	N	Y	N
<i>Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)</i>	Y	Y	N
<i>Repetitive flood loss policies (e.g., relocation, buyouts)</i>	Y	Y	N
<i>Freeboard requirements</i>	Y	Y	N
<i>Real estate sales disclosure requirements</i>	Y	Y	N
<i>Restrictions on publicly funded infrastructure</i>			
<i>Infrastructure protection (e.g., considering hazards in siting and design)</i>	N	Y	N
<i>Other (please specify)</i>			
Management Planning Programs or Initiatives:			
<i>Hazard mitigation plans</i>	Y	Y	N
<i>Sea level rise/Great Lake level change or climate change adaptation plans</i>	Y	Y	Y
<i>Statewide requirement for local post-disaster recovery planning</i>	N	Y	N
<i>Sediment management plans</i>	Y	Y	N

<i>Beach nourishment plans</i>	N	Y	N
<i>Special Area Management Plans (that address hazards issues)</i>	N	Y	Y
<i>Managed retreat plans</i>	N	Y	N
<i>Other (please specify) Resilience planning</i>	Y	Y	Y
Research, Mapping, and Education Programs or Initiatives:			
<i>General hazards mapping or modeling</i>	Y	Y	Y
<i>Sea level rise mapping or modeling</i>		Y	Y
<i>Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)</i>	Y	Y	Y
<i>Hazards education and outreach</i>	Y	Y	Y
<i>Other (please specify)</i>			

2. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state’s management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state’s management efforts?

Oregon Resilience Plan

Directed by the Oregon Legislative Assembly, ***The Oregon Resilience Plan*** was completed and published in February, 2013. The plan reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing during and after a Cascadia earthquake and tsunami. It identifies key needs for mitigating the impacts of a Cascadia event, and includes a specific section addressing the unique risks faced by Oregon’s coast.

http://www.oregon.gov/OMD/OEM/ossprac/docs/Oregon_Resilience_Plan_Final.pdf

Identification of Priorities:

1. Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

Management Priority 1: Increase resilience to tsunami of at-risk coastal communities through the implementation of land use planning based management strategies and measures.

Description: The recent publication by the Oregon Department of Geology and Mineral Industries (DOGAMI) of the ***Tsunami Inundation Maps (TIM series)***; see [TIM map publication overview](#) provides Oregon coastal communities with greatly improved information on the level and extent of risk from both distant and local (Cascadia) tsunami events. The OCMP has produced guidance for

the use of these maps by local governments for land use planning and evacuation facility planning. The next step in addressing this management priority is to provide support and direct technical assistance to communities in applying and integrating these concepts into local comprehensive plans, public facility plans and development codes.

Management Priority 2: Implement improved land use management measures in areas subject to chronic ocean shore hazards (i.e. shoreline erosion, sea level rise, ocean flooding).

Description: Risk from chronic hazards in ocean shore areas continues to be a significant issue in Oregon. Although all local governments have hazard area development policies and regulations in place, most of these provisions are based on hazard information that is outdated, and therefore do not adequately address the nature and severity of coastal hazards as currently understood. Recent map products delineating ocean shore risk zones and the development of the OCMP model code for chronic coastal hazards provide a basis for the implementation of improved management policies and regulations.

2. Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	N	
Mapping/GIS/modeling	Y	Mapping of future total water levels (sea level rise)
Data and information management	N	
Training/Capacity building	Y	There is a need to assist in building capacity at the local government level to support local implementation of improved management measures.
Decision-support tools	N	
Communication and outreach	Y	There is a continuing need to raise awareness among local officials and decision makers regarding of the nature and extent of coastal hazards.
Other (Specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes X
No

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

Through several research efforts and published reports completed by a number of program partners, the technical understanding of Oregon’s coastal hazards has advanced significantly in recent years. Better modeling and mapping technologies have provided products that can be used in a variety ways to improve the management of coastal hazards by local communities. There is an ongoing need to effectively deploy these products to implement improved hazard management strategies and regulations at the local level. To address this need, the OCMP intends to develop a strategy focused on facilitating and supporting local implementation of improved hazard management programs. The efforts identified in this strategy will focus on the management priorities of increased resilience to tsunamis and improved management of chronic shoreline hazards.

Special Area Management Planning

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities regarding the preparation and implementation of special area management plans for important coastal areas.

1. What are the one to three most significant geographic areas facing existing or emerging challenges that would benefit from a new or revised special area management plan (SAMP) or better implementation of an existing SAMP? For example, are there areas where existing management approaches are not working and could be improved by better coordination across multiple levels of government? What challenges are these areas facing? Challenges can be a need for enhanced natural resource protection; use conflicts; coordinating regulatory processes or review; additional data or information needs; education and outreach regarding SAMP policies; or other (please specify). When selecting significant challenges, also consider how climate change may exacerbate each challenge.

	Geographic Scope <small>(within an existing SAMP area (specify SAMP) or within new geographic area (describe new area))</small>	Challenges
Geographic Area 1	Major estuaries currently subject to estuary management plans	Need for incorporation of updated resource inventory information. Need for better integration of EMPs with other regulatory programs (coordination). Need for outreach and education regarding SAMP policies.
Geographic Area 2	Coastal shoreland areas adjacent to major estuaries	Need for improved mapping of shoreland resources and jurisdictional boundaries. Need to update inventories of potential estuarine restoration and mitigation sites. Need to identify shoreland areas subject to resource impact from climate change/sea level rise.
Geographic Area 3		

2. Briefly explain why these are currently the most significant challenges that may require developing a new SAMP, or revising or improving implementation of an existing SAMP. Cite stakeholder input and/or existing reports or studies to support this assessment.

As identified in the report ***Assessment of Oregon’s Regulatory Framework for Managing Estuaries***, most of Oregon’s major estuary management plans have seen little in the way of update or revision since originally developed more than thirty years ago. Despite the general success and durability of these plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g.

salmonid recovery) and the potential impacts from climate change are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
N/A	

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the special area management planning enhancement objective.

1. For each additional SAMP management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
SAMP research, assessment, monitoring	Y	Y	N
SAMP GIS mapping/database	Y	Y	Y
SAMP technical assistance, education, and outreach	Y	Y	N
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
 - a. Describe significant changes since the last assessment;
 - b. Specify if they were 309 or other CZM-driven changes; and
 - c. Characterize the outcomes or likely future outcomes of the changes.

- d. In 2014 the OCMP completed and published the ***Oregon Estuary and Shoreland Habitat Atlas***. The Oregon estuary and shoreland habitat project was a 24 month project to produce estuary and shorelands habitat map information, using the federally adopted Coastal and Marine Ecological Classification Standard (CMECS) version 4.0. This project covered 21 Oregon estuaries (all major estuaries except the Columbia River), all of which are managed through SAMPs.
 - e. These data products were generated through a Section 309 Project of Special Merit grant.
 - f. With the completion of the CMECS habitat classification project, digital information products and data were generated and published to the OCMP's Oregon Coastal Atlas and the Estuary Planning Atlas Tool. These data sets and mapping tools are now available to all Oregon estuary planners and managers, and provide a fundamental resource inventory tool for the update of estuary management plans.
<http://www.coastalatlantool.net/cmeecs>
3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's special area management planning efforts since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

Assessment of Oregon's Regulatory Framework for Managing Estuaries

This report was prepared as a component part of a multi-year effort by the Department of Land Conservation and Development to facilitate the modernization of local estuary management plans. The analysis provides a qualitative assessment of the current state regulatory framework for managing estuaries, including the provisions of and administrative rules for Statewide Planning Goal 16, Estuarine Resources, Statewide Planning Goal 17, Coastal Shorelands, and other program authorities, for the purpose of determining suitability to meet future needs for the management of Oregon's estuaries.

Principal conclusions of the assessment include:

- Oregon's planning based approach to estuary management has provided a strong foundation for estuarine resource conservation and development decisions. In particular, the management framework's strong emphasis on advance decision making based on spatial planning concepts has proven effective in providing a system-wide approach to management. Likewise, the locally focused nature of the estuary planning process has produced plans with broad based support and has increased awareness of the relationships between traditional community development planning and aquatic resource management.
- Estuary plans have not benefitted from incorporating updated resource inventory data and digital mapping technology.

- In the nearly three decades since most of Oregon’s estuary management plans were developed, the widespread public and agency engagement that characterized the original process has waned. The resultant decline in overall awareness and understanding of the role of the plans has reduced their effectiveness as foundational decision making tools.
- In some instances, the incorporation of highly detailed development decisions into plans has proven problematic. Changing market and other forces have resulted in the need to update these highly detailed plans at a scale and frequency beyond the capacity of local governments.
- The integration of estuary management plans with state and federal regulatory processes has not been fully realized. This results in duplication of effort in the plan implementation process and places technical demands on local governments that few have the capacity to fulfill.
- Finally, the overall design of the system presumes an ongoing local government capacity, in terms of staff and other resources, that is not currently present. As a result, local governments are challenged to administer and maintain estuary plans.

http://www.oregon.gov/LCD/OCMP/Pages/Est-Shore_RegulatoryAssessment.aspx

Identification of Priorities:

1. Considering changes with coastal resource protection or coastal use conflicts within defined geographic areas, special area management planning activities since the last assessment, and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve their ability to prepare and implement special area management plans to effectively manage important coastal areas. (*Approximately 1-3 sentences per management priority.*)

Management Priority 1: Provide technical and financial support to local governments partners to update and improve the implementation of estuary management plans.

Description: Despite the general success and durability of Oregon’s estuary management plans, a number of current and anticipated developments indicate the need for modernization. In particular, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. The application of digital mapping technology presents an opportunity to incorporate a more refined application of updated data sets to both planning and implementation decisions, thus improving the quality and certainty of management decisions.

Management Priority 2: Provide technical and financial support to local governments partners to update inventories of potential estuarine wetland restoration sites.

Description: While all of Oregon’s remaining estuarine wetlands are subject to special area management plans (98% are in protected status), up to 70% of original tidal marsh has been lost to diking, fill and other alterations. Many of these former tidal wetlands have not been inventoried or assessed as a part of local management plans. There has been growing interest in and work related to tidal wetland restoration in Oregon, particularly as an element of salmon restoration efforts. While the original estuary management plans did include some identification of potential restoration and mitigation site, these inventories are outdated and typically incomplete. Many local governments lack the resources and capacity to complete the work of updating these local plan inventories. The support of the OCMP to facilitate this work can be key to updating these inventories and thus improving this element of estuary and shoreland management.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	N	
Mapping/GIS	Y	There is a need to assist local government partners in deploying GIS resources for local estuary and shoreland management planning
Data and information management	Y	There is a need to provide updated digital data sets for estuary and shoreland resources to local planning agencies
Training/Capacity building	Y	Some local planning agencies lack sufficient capacity to undertake plan modernization efforts
Decision-support tools	N	
Communication and outreach	Y	There is a need to re-engage key agency partners and stakeholders in estuary and shoreland management programs
Other (Specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes X
 No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

There is an identified need to provide technical support to affected communities to update and improve the implementation of locally adopted estuary management plans and corresponding

shoreland plan elements. To address this need, the OCMP intends to develop a strategy focused on facilitating and supporting local efforts to modernize these locally adopted SAMPs. The OCMP has established a foundation for this support through several recently completed efforts; in particular the ***Oregon Estuary and Shoreland and Habitat Atlas***, the ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***, and ***The Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands*** provide important resources for this effort. The primary focus of this strategy will be on incorporating the CMECS resource inventory product into local plans to enhance the utility of the plans and improve decision making. Other work on system improvements as identified in the assessment will be focused on improving regulatory coordination for better implementation of local plans.

IV. Strategy



Coastal Hazards Planning

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input type="checkbox"/> Wetlands |
| <input checked="" type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. **Strategy Goal:** State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

Work with three local jurisdictions to develop hearing-ready draft comprehensive plan elements and land use regulations that address tsunami hazards and/or incorporate the latest generation coastal

risk zone maps for chronic hazards. This work will be based on the guidance contained in *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities* and the OCMP model code for chronic coastal hazards.

- C. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The strategy is comprised of providing technical and financial support to willing local government program partners for the implementation of improved land use measures for the management of the high priority hazards of coastal erosion and tsunami. This assistance will consist of GIS and mapping support, interpretation and adaptation of map products for land use planning purposes, and assistance in the development and drafting of comprehensive plan and development code provisions. These efforts will provide the technical support for program changes that will occur in the form of adopted local comprehensive plan provisions and land use regulations.

Since ultimate adoption of these program changes is within the legislative purview of the OCMP's local government program partners, the OCMP cannot warrant that these changes will be achieved within the five year assessment and strategy cycle. However, completing the stated strategy goal of producing draft products suitable for adoption, working in collaboration with local partners, will result in a high likelihood of eventually achieving these program changes. In addition, these efforts will provide guidance and impetus for other communities, beyond the initial three, to engage in work to update and improve coastal hazard management programs, which would result in additional positive program changes.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

As discussed in the Phase II assessment, the major need in the enhancement area of coastal hazards management is for local implementation of improved land use measures. This strategy is specifically designed to provide technical capacity and support to local governments in their efforts to incorporate updated mapping and develop improved management measures and land use regulations addressing coastal hazards. The primary focus will be on the high priority hazards of coastal erosion and tsunami inundation, where improved modeling has produced enhanced risk analysis and hazard area mapping suitable for incorporation into local land use plans.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

The OCMP has in place and available a number of technical support resources for hazard planning, including model code provisions for (chronic) coastal hazards, tsunami land use guidance, and tsunami evacuation facility planning guidance. In addition, program partner agencies have recently produced a number of improved coastal hazard mapping products that are suitable for application to land use planning. This strategy will seek to integrate all of these available resources to establish on-the-ground implementation through local hazard management programs. This work will improve hazard management at the local development review level, and will ultimately result in safer, more resilient coastal communities. Successful efforts engaged in through this strategy will also provide a template for other coastal communities to improve and strengthen their hazard management programs.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

Recent developments in Oregon related to hazard awareness and management provide a sound basis for moving the proposed strategy forward. Tillamook County and the unincorporated community of Neskowin, in collaboration with the OCMP, recently completed the adoption process for the Neskowin Coastal hazard Adaptation Plan. The plan and implementing regulations provide some innovative concepts for hazard management that have potentially broad application on the Oregon coast. The success of this planning effort has generated widespread interest on the coast, and the process provides a blueprint for the success of similar efforts in other communities.

Directed by the Oregon Legislative Assembly, *The Oregon Resilience Plan* was completed and published in February, 2013. The plan reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing during and after a Cascadia earthquake and tsunami. The plan includes a specific section addressing the unique risks faced by Oregon's coast, and has received widespread notice in the media and in Oregon's coastal communities. As a result, recognition of the need to plan for the impacts of a Cascadia event tsunami has increased substantially in many at-risk coastal communities. The proposed strategy will thus coincide with this heightened interest in resilience planning among Oregon's coastal communities, providing a well-timed opportunity for success.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal: Work with three local jurisdictions to develop hearing-ready draft comprehensive plan elements and land use regulations that address tsunami hazard areas and/or implement the latest generation coastal risk zone maps for chronic hazards. This work will be based on the guidance contained in *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities* and the OCMP model code for coastal hazards.

Total Years: 5

Total Budget: \$412,750

Year(s): 1

Description of activities: Solicit interest from local communities to engage in the development of enhanced local hazard plans and implementing regulations. Work with candidate communities to identify technical and financial needs, identify available capacity and resources, and develop work scopes to address identified needs and desired outcomes.

Major Milestone(s): Completed work scopes and budgets for the development of enhanced natural hazard planning measures for up to three candidate communities.

Budget: \$68,150

Year(s): 2-5

Description of activities: Provide technical and financial support to selected local government program partners for the development and implementation of improved land use measures for the management of high priority hazards. This assistance will consist of GIS and mapping support, interpretation and adaptation of map products for land use planning purposes, and assistance in the development and drafting of comprehensive plan and development code provisions.

Major Milestone(s): Completed hearing-ready draft comprehensive plan elements and land use regulations that address tsunami hazard areas and/or implement of current coastal risk zone maps for chronic hazards. This work will be based on the guidance contained in *Preparing for a Cascadia Subduction Zone Tsunami: A Land Use Guide for Oregon Coastal Communities* and the OCMP model code for coastal hazards.

Budget: \$344,600

VII. Fiscal and Technical Needs

- A. Fiscal Needs:** If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

It is expected that 309 funding will not be sufficient to carry out all elements of the proposed strategy. Participating local governments will be expected to contribute resources to the efforts undertaken on their behalf, primarily in-kind resources in the form of staff time and volunteer time from appointed and elected officials. The strong partnership relationship OCMP enjoys with local communities on the coast has facilitated a number of successful projects of a similar nature, and it is anticipated that this approach will likewise be effective in carrying out this strategy.

- B. Technical Needs:** If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

It is anticipated that the technical knowledge and skills needed to carry out this strategy can be provided by the OCMP. In the event that the need for additional technical resources (e.g. additional hazard mapping) is identified during the course of this strategy, OCMP would call upon its strong partnership relationship with the Oregon Department of Geology and Mineral Industries, or other appropriate network partners, for assistance.

VIII. Projects of Special Merit (Optional)

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

The OCMP will seek to undertake a pilot project for comprehensive, pre-disaster land use planning to address a catastrophic tsunami event. This project would involve engaging a high risk coastal community to plan for long term reduction of exposure and vulnerability to natural hazard risks, with emphasis on a Cascadia event tsunami. This would include planning for relocation of existing community facilities and uses exposed to tsunami risk, addressing future reuse of vacated areas, and identifying lower risk areas outside current urban growth boundaries to be reserved and planned for eventual urban growth boundary expansion.

The project would serve as a prototype that could be used by other coastal communities to increase resilience to a Cascadia earthquake and tsunami.

Estuary Management Planning

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas (*check all that apply*):

- | | |
|--|---|
| <input type="checkbox"/> Aquaculture | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy & Government Facility Siting | <input checked="" type="checkbox"/> Wetlands |
| <input type="checkbox"/> Coastal Hazards | <input type="checkbox"/> Marine Debris |
| <input type="checkbox"/> Ocean/Great Lakes Resources | <input type="checkbox"/> Public Access |
| <input checked="" type="checkbox"/> Special Area Management Planning | |

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes (*check all that apply*):

- A change to coastal zone boundaries;
- New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- New or revised local coastal programs and implementing ordinances;
- New or revised coastal land acquisition, management, and restoration programs;
- New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. **Strategy Goal:** _____.

State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

Strategy Goal: Work with affected communities to develop revised draft estuary management plans for two or more major estuaries.

- C. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The OCMP will provide technical support to affected communities to update and improve the implementation of locally adopted estuary management plans. Work to update and improve the implementation of local estuary management plans will be based on and the priority areas for plan improvement identified in the report ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***. The primary focus will be on incorporating the CMECS resource inventory product into local plans to enhance the utility of the plans and improve decision making. Other work on system improvements as identified in the assessment will be focused on improving regulatory coordination and agency partner engagement for better implementation of local plans.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

As identified in the Phase II assessments for wetlands and special area management planning, the major need in these enhancement areas is for improved implementation of local estuary management plans. This strategy is specifically designed to provide technical capacity and support to local governments in their efforts to incorporate updated resource inventory mapping into estuary plans, and to modernize management measures and decision making processes based on these improved resource inventories. The primary focus will be on incorporating the habitat inventory products generated through the ***Oregon Estuary and Shoreland Habitat Atlas*** project into local plans. A secondary focus will be on improving regulatory coordination for more effective implementation of local plans.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

The OCMP has established a foundation to support local estuary plan improvements through several recently completed projects; in particular the ***Oregon Estuary and Shoreland and Habitat Atlas***, the ***Assessment of Oregon's Regulatory Framework for Managing Estuaries***, and the ***Assessment of Trends Affecting Planning for Oregon's Estuaries and Shorelands*** provide important resources for this effort. This strategy seeks to employ these resources in support of local efforts to modernize and update estuary management plans, which are key elements of

Oregon's coastal resource management program. The incorporation into local plans of updated habitat classification mapping through the application of digital mapping technology will allow a more refined application of these important data sets to both planning and implementation decisions. The result will be improvement in the quality and certainty of management decisions for critical estuarine and related wetland resources.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

Despite the general success and durability of local estuary management plans, a number of current and anticipated developments indicate the need for modernization. Informed by history, it is now clear that many of the economic development assumptions and projections incorporated into the original plans need to be updated. Likewise, current drivers for various conservation and restoration initiatives (e.g. salmonid recovery) are largely unanticipated by current plans. And, growing local technology capacity will now allow for significantly more refined application of updated data sets to both planning and implementation decisions.

As a result of these factors, there is heightened awareness among local planning staff and officials of the benefits to be gained from the modernization of these plans. This awareness has manifested recently in the initiation of locally driven efforts to update the management plan for the Coquille River Estuary, and the work currently underway by the Partnership for Coastal Watersheds on the Coos Bay Estuary Inventory. OCMP believes that this strategy will be able to build upon this momentum, and that the timely delivery of technical assistance and capacity will facilitate the successful completion of these, and other, local plan modernization efforts.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal: Work with affected communities to develop revised draft estuary management plans for two or more major estuaries.

Total Years: 5

Total Budget: \$508,750

Year(s): 1

Description of activities: Solicit interest from local communities to undertake estuary plan modernization efforts. Work with candidate communities to identify technical and financial needs, identify available capacity and resources, and develop work scopes to address identified needs and desired outcomes.

Major Milestone(s): Completed work scopes for the update/modernization of selected estuary management plans.

Budget: \$75,000

Year(s): 1-3

Description of activities: Convene a technical work group to evaluate in detail the coordination between estuary management plan implementation and the Joint DSL/Corps permit process. This work will focus on opportunities for improved integration of local plans with other regulatory processes.

Major Milestone(s): Report identifying local plan revisions and/or other program changes that would enhance regulatory coordination between estuary plans and the DSL/Corps joint permit process.

Budget: \$60,000

Year(s): 2-5

Description of activities: Provide technical and financial support to selected local governments for the modernization of estuary management plans. This assistance will consist of GIS and mapping support, interpretation and adaptation of CMECS habitat classification data products for estuary planning purposes, and assistance in the development and drafting of estuary plan and implementing regulation provisions.

Major Milestone(s): Two completed hearing-ready draft updated estuary plan elements, including new inventory maps and supporting data, updated estuary plan management unit designations, and plan text and implementing ordinance revisions, as needed.

Budget: \$373,750

VII. Fiscal and Technical Needs

- A. Fiscal Needs:** If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

Section 309 funding will not be sufficient to carry out all elements of the proposed strategy. Although the OCMP anticipates providing both technical and financial assistance to participating local governments, these local jurisdictions and other agency partners will contribute additional resources to efforts undertaken in collaboration, primarily in-kind resources in the form of staff time and volunteer time from appointed and elected officials. The strong partnership relationship OCMP enjoys with local communities on the coast has facilitated a number of successful projects of a similar nature, and it is anticipated that this approach will likewise be effective in carrying out this strategy.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

It is expected that the technical knowledge and skills needed to carry out this strategy can be provided by the OCMP and participating agency and local partners.

VIII. Projects of Special Merit (Optional)

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above. The information in this section will not be used to evaluate or rank projects of special merit and is simply meant to give CMPs the option to provide additional information if they choose. Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the funding competition.

5-Year Budget Summary by Strategy

At the end of the strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year.

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Coastal Hazards Planning	\$68,150	\$88,150	\$88,150	\$88,150	\$80,150	\$412,750
Estuary Management Planning	\$116,150	\$96,150	\$96,150	\$96,150	\$104,150	\$508,750
Total Funding	\$184,300	\$184,300	\$184,300	\$184,300	\$184,300	\$921,500

V. Summary of Stakeholder Comment

Stakeholders Engaged

During the initial stages of the preparation of the assessment and strategy, the OCMP solicited input from an expansive group of stakeholders. As a networked program, the emphasis of this solicitation was directed to local government and state agency program partners. The following entities were contacted and provided an opportunity to respond to a short survey on program enhancement priorities (note: the outreach contact and survey questionnaire used for this purpose is included as Appendix A):

1. All local governments with land use planning jurisdiction in Oregon's coastal zone. This included seven coastal counties and twenty-nine coastal cities. The primary points of contact were county and city planning directors and/or county and city managers.
2. State agencies with direct program authorities; this included Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, Oregon Department of Geology and Mineral Industries, Oregon Department of State Lands, Oregon Department of Parks and Recreation and South Slough National Estuarine Research Reserve.
3. Several NGOs with interests in coastal planning, community development and resource management. NGOs contacted were Oregon Coastal Zone Management Association (OCZMA), Oregon Coast Alliance, Oregon Chapter of Surfrider Foundation, Oregon Shores Conservation Coalition and The Wetlands Conservancy.

In addition to the written solicitation of input through the survey questionnaire, OCMP also delivered a presentation outlining the Section 309 assessment and strategy process at the annual all-coast network meeting in October, 2014. This meeting was well attended by a range of state and local program partners and stakeholders, and the department provided guidance and contact information for the receipt of input on the assessment and strategy priorities.

Summary of Feedback

Written responses to the questionnaire were received from seven entities, including five local governments, two state agencies and one NGO. In addition, the OCMP staff solicited and received additional informal input from a number of other program partners at the October coastal network meeting. The enhancement priorities cited at least once in the written responses as among the top three were coastal hazards, wetlands, special area management planning, energy and government facility siting, ocean resources, public access, cumulative and secondary impacts and marine debris. Of the priorities identified as among the top three, those most frequently cited (in order) were coastal hazards, wetlands, and special area management planning.

Stakeholder input identified a range of important issues and opportunities related to each of the enhancement areas cited. However, in a number of cases, addressing these identified issues is within the scope of current program activities and would not warrant a strategy leading to a program change. Of the priorities most often identified in the responses, input on coastal hazards and wetlands provided the most specific direction for the development of program changes. In particular, respondents cited the

need for additional resources and technical support for local planning and implementation related to these enhancement areas.

Appendix A

Stakeholder Input Survey



Oregon

John A. Kitzhaber, MD, Governor

Department of Land Conservation and Development

Oregon Coastal Management Program

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September 8, 2014



Dear Program Partners and Stakeholders:

The Oregon Department of Land Conservation and Development is seeking input from interested stakeholders on the development of our assessment and strategy for improving Oregon's Coastal Management Program through the Section 309 Coastal Zone Enhancement Program.

The Coastal Zone Enhancement Program, established under Section 309 of the Coastal Zone Management Act (CZMA), encourages state coastal management programs to strengthen and improve their federally approved coastal management programs in one or more of nine areas. These specific "enhancement areas" are:

- wetlands;
- coastal hazards;
- public access;
- marine debris
- cumulative and secondary impacts;
- special area management plans;
- ocean resources;
- energy and government facility siting;
- aquaculture

Every five years, states and territories are encouraged to conduct self-assessments of their coastal management programs to identify issues and enhancement opportunities within each of the nine enhancement areas – and to assess the effectiveness of existing management efforts to address identified problems. Each coastal management program identifies high priority management issues as well as important needs and information gaps the program must fill to address these issues.

We are in the initial stages of conducting our current program assessment for Oregon, and we would very much appreciate your thoughts and input on issues or opportunities for program improvements related to one or more of the nine enhancement areas.



Attached are three questions intended to help focus your input on the nine enhancement areas. Comments in response to these questions will be most helpful; however, please feel free to provide additional written comments or input in another format if you find that will better communicate your concerns or suggestions.

Please direct your comments to Matt Spangler, Senior Coastal Policy Analyst, via the contact information provided on the attached questionnaire. We would appreciate receiving your comments by October 15 in order to fully consider them in our assessment.

Sincerely,



Patty Snow, Manager
Oregon Coastal Management Program

Attachment

**Oregon Coastal Management Program
Section 309 Assessment and Strategy 2016-2020**

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- coastal hazards;
- public access;
- marine debris
- cumulative and secondary impacts;
- special area management plans;
- ocean resources;
- energy and government facility siting;
- aquaculture

Q1. Which of the above nine enhancement areas do you feel are the highest priority for Oregon’s Coastal Management Program? (Rank your top three in order of priority.) Briefly explain why.

Q2. What do you feel are the greatest problems regarding those priority enhancement areas?

- Enhancement Area 1:
- Enhancement Area 2:
- Enhancement Area 3:

Q3. What are the greatest opportunities for enhancing Oregon’s Coastal Management Program to more effectively address those problems?

- Enhancement Area 1:
- Enhancement Area 2:
- Enhancement Area 3:

Please provide your comments by October 15 to:

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