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How Local Shoreline Master Programs Currently Address Sea Level Rise

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How Local Shoreline Master Programs Currently Address Sea Level Rise

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Introduction

To improve local governments' ability to avoid and minimize the impacts of existing and future coastal hazards, the Washington State Department of Ecology (Ecology) is continually exploring opportunities to update guidance and resource. This report provides background information that will inform improvements to Ecology's guidance on addressing the impacts of sea level rise by helping answer the following questions:

1. *How are local jurisdictions in Washington currently addressing sea level rise using goals, policies, and regulations in their SMPs?*

2. *Are local jurisdictions applying Ecology's existing guidance?*

To answer these questions, this report records current language addressing sea level rise in goals, policies, and regulations of SMPs from 56 jurisdictions with marine shoreline in Washington State. Inclusion of the term "sea level rise" or similar language in SMPs represents jurisdictions' acknowledgement that conditions along the coasts are changing as a result of rising sea levels and that these changes will continue to impact shoreline use and development. Analysis of this language— the purpose of this document— is a starting point in understanding how local jurisdictions in Washington are using SMPs to address sea level rise.

This report explores the different SMP elements in which language about sea level rise appears and also describes the variety of actions that the existing policies and regulations provide for. These findings create a better understanding of how local jurisdictions are currently using SMPs to address sea level rise and help Ecology best address local jurisdictions' future guidance needs.

Background: Existing State Guidance on Addressing Sea Level Rise in SMPs

Jurisdictions in Washington State are currently not required to address sea level rise in their SMPs. However, *Appendix A* of Ecology's *Shoreline Master Program Handbook*, which assists local government planners in meeting the requirements of the Shoreline Management Act, identifies options for addressing sea level rise in SMPs. These options include:

- determining shoreline jurisdiction as sea level rise may shift the Ordinary High Water Mark (OHWM);
- incorporating sea level rise outreach in public participation activities;
- assessing shoreline vulnerability to sea level rise through shoreline inventory and characterization;
- including provisions for sea level rise adaptation in SMP goals, policies, and regulations;
- establishing setbacks through environment designations;
- limiting shoreline armoring through shoreline modifications policies;
- factoring sea level rise into restoration planning; and
- considering potential changes due to sea level rise when selecting indicators of no net loss.

The options described in *Appendix A* of Ecology's *Shoreline Master Program Handbook* provide a high-level overview of ways that SMPs can address sea level rise, including example language from completed and draft SMPs in Washington. This current guidance has been available to more than 260 towns, cities, and counties across Washington State that have completed or are in the process of completing comprehensive updates to their SMPs, many of which have not been fully updated in more than 30 years. Some jurisdictions have used this update process as an opportunity to support local adaptation to sea level rise through goals, policies, and regulations[1] in their SMPs.

Project Scope

Counties and cities with marine shoreline in Washington State (all jurisdictions along the outer coast, along the Strait of Juan de Fuca, and in Puget Sound) were selected for this analysis because these jurisdictions have the potential to be directly impacted by rising sea levels. This geographic scope led to selection of 56 jurisdictions, 40 of which have completed comprehensive updates of their SMPs. The remaining 16 jurisdictions are in the process of local adoption or state approval of their SMPs. Because language in SMPs that are undergoing approval is subject to change, this report only explores policy and regulatory language from the 40 SMPs whose updates are complete. Appendix A lists the jurisdictions included in this report and the status of their SMP updates. SMPs of jurisdictions in green contain language on sea level rise. [2]

Sea Level Rise and Shoreline Stabilization

Some SMPs include language about sea level rise in sections on shoreline stabilization and other modifications. This area of SMPs can be used to address sea level rise through both allowing and discouraging hard stabilization of the shoreline. For example, some policies allow hard shoreline stabilization as a way to protect property from the impacts of sea level rise. These protective policies may expressly allow hard stabilization for areas threatened by sea level rise and other hazards such as erosion. Conversely, other policies prioritize soft stabilization approaches or limit future hard stabilization of the shoreline. These policies may include restrictions such as proving that future sea level rise was considered when determining that continued stabilization will not be needed.

Results: How SMPs in Washington Currently Address Sea Level Rise

Many SMPs Already Address Sea Level Rise As shown in Appendix A, almost half of updated SMPs for communities along Washington's coasts already directly address sea level rise through goals, policies, and regulations— 17 of the 40 updated SMPs include language about sea level

[1] Goals and policies express broader principles meant to guide implementation, while regulations express required action. Thus, the use of these different types of provisions in addressing sea level rise has implications for how sea level rise will be incorporated in decision making.

[2] "Sea level rise" and related terms (e.g., "rising sea levels," "increases in sea level") were considered relevant language.

rise. These 17 SMPs most commonly address sea level rise in elements on: flood damage minimization or flood hazard reduction (seven SMPs); restoration, remediation, and conservation (six SMPs); and general shoreline use (six SMPs). Additionally, SMPs' Critical Areas regulations and sections on shoreline modifications, setbacks and height, recreation, climate change, and urban intensity management also address sea level rise (see Table 1). Appendix B shows considerable variation in the details of this language.

Table 1. Elements of updated SMPs that include language about sea level rise.

Area	# of SMPs
Floods (Damage Minimization/Hazard Mitigation)	7
Restoration, Remediation, and Conservation	6
General Shoreline Use	6
Critical Areas Regulations	3
Shoreline Modification (Stabilization and Fill)	3
Shoreline Setbacks and Height	1
Recreation	1
Climate Change	1
Urban Intensity Management	1

The great variation in areas in which updated SMPs address sea level rise shows that sea level rise is a cross-cutting issue affecting many aspects of shoreline management, and preparations can be made in a variety of ways using the elements of SMPs that are currently required.

SMPs Encourage Consideration of Impacts, Use of Information, and Adjustment of Setbacks and Standards to Address Sea Level Rise

The SMPs contain language encouraging or requiring a variety of actions to address sea level rise within each of the elements mentioned above. General policies providing that jurisdictions simply *consider* or *address* sea level rise for a variety of decisions were most common.

Many of these SMPs have only been in effect for several years, but more information about how these policies are implemented or acted upon is needed. Case studies of jurisdictions striving to use sea level rise information in decision making would provide insight into how provisions to *consider* sea level rise information are being implemented and what information is being used.

SMPs can additionally encourage or require actions that move beyond consideration of impacts. Also common in the updated SMPs are policies directing jurisdictions to *monitor and use information* on sea level rise, and policies directing jurisdictions to *encourage, reevaluate, or adjust setbacks and building standards* accordingly. These actions include:

- Providing information about sea level rise to development permit applicants
- Changing setbacks or encouraging location of new or replacement development outside of areas vulnerable to sea level rise and associated flooding (retreat)
- Enhancing standards for project design, location, and construction so that various uses (transportation, utilities, restoration) can withstand the impacts of sea level rise (accommodation)

These specific actions illustrate the wide variety of ways in which local jurisdictions are addressing sea level rise under existing guidelines for SMPs. They also pose the question how these policies and regulations have been implemented and what kinds of policy guidance jurisdictions still need.

SMPs Use Policies More Frequently than Regulations to Address Sea Level Rise
Most (15) SMPs that include language about sea level rise do so through policies, meaning that in these cases, sea level rise is addressed through broader guiding principles rather than through required actions. As discussed above, most of these policies related to sea level rise encourage a) general consideration of sea level rise impacts or information when designing, locating and maintaining various shoreline developments and uses, and adjustment of setbacks and building standards to minimize flooding damage.

Additionally, five SMPs use regulations to address sea level rise, some of which are paraphrased below. Three of these regulations appear within Critical Areas Ordinances providing for enhanced standards in hazardous areas, and some also expressly allow shoreline stabilization or fill when a development or area is in danger due to sea level rise.

- Applicants for development in low lying shoreline or other specified areas shall be provided with information on sea level rise.
- Applicants for development in low lying shoreline or other specified areas shall be encouraged to voluntarily consider increasing setbacks to allow for future sea level rise.
- Particular modification or stabilization measures (fill, construction of protective berms) within the shoreline jurisdiction shall be allowed in response to increases in sea level, subject to all other provisions of the SMP.
- Geotechnical reports for variances proposing development within 65 feet of a bluff must contain erosion projections for 75 years based in part on sea level rise.

Comparing the prevalence of regulations (five SMPs) to that of goals and policies (15 SMPs) used to address sea level rise within these various areas is also important because regulations require action, while goals and policies express broader principles meant to guide implementation. Acknowledging the intent to protect from sea level rise in goals and policies creates an anchor for effective preparation in practice, but jurisdictions can also use regulations to require that specific measures be taken. Finally, standards, which are measures developed at the local level to implement regulations, are not listed in SMPs and are not able to be evaluated through literature review. Case studies with local jurisdictions that have included policies and regulations on sea level rise in their SMPs will provide insight into the standards and interpretations used to guide implementation of regulations.

Conclusions

The policies and regulations described in this report closely follow recommendations of Ecology's state-level guidance on sea level rise adaptation in *SMP Handbook Appendix A: Addressing Sea Level Rise in Shoreline Master Programs*. Almost half of coastal jurisdictions

with updated SMPs include some measures recommended in this guidance in a variety of ways through policies and regulations. Conclusions and questions from this synthesis are listed below.

1. **Almost half of jurisdictions address sea level rise through explicit language in goals, policies, and regulations of SMPs.**

2. **When jurisdictions do address sea level rise through SMPs, they follow Ecology's guidance.**
   This suggests that Ecology's state-level guidance is a relevant source of information that local jurisdictions use in planning for sea level rise in SMPs. Local jurisdictions are finding ways to use existing tools.

3. **There is great variety in how SMPs address sea level rise. However, flood damage minimization, conservation and restoration activities, and general shoreline use are the most common elements in which jurisdictions' SMPs currently include language about sea level rise.**
   In addition to identifying how sea level rise can best be acknowledged in SMPs, updated state-level guidance could also focus on addressing the individual hazards and impacts resulting from sea level rise, such as increased coastal flooding.

4. **Most commonly, SMP policies provide for the consideration of sea level rise information in development decisions.**

5. **Five jurisdictions' SMPs contain regulations that require a variety of specific actions addressing sea level rise. These include providing information on sea level rise to developers and residents, accounting for sea level rise in stabilization planning, and ensuring that the location and design of development minimizes risk.**
   Standards for implementation of these regulations will be explored through case studies.

The diversity of adaptation options communities have pursued using language about sea level rise in their SMPs shows the SMP's flexibility as a planning program meant to adapt to local contexts. Understanding this diversity and exploring whether local jurisdictions prefer to use policies or regulations to address sea level rise helps inform improvements to Ecology's guidance on addressing sea level rise in SMPs. Regardless of exact language, the standards and interpretations used to implement policies and regulations that address sea level rise in SMPs ultimately dictate their efficacy. Ultimately, conversations with local government staff have indicated that additional guidance would be helpful and that broad flexibility to adapt SMP policies to local conditions and needs is essential for each community to best prepare for sea level rise.

Finally, it is also important to note that regardless of whether the term "sea level rise" is used in SMPs, many jurisdictions are addressing the hazards associated with sea level rise in a variety of ways. During a workshop held by the Department of Ecology, local government staff expressed that many jurisdictions are addressing sea level rise indirectly, using existing programs to prepare for associated hazards such as coastal flooding. In addition to SMPs, communities can take advantage of other planning tools available; local comprehensive plans, flood ordinances,

storm water management, infrastructure planning, evaluations of utility and service capacity, and other activities are also being used to address sea level rise. A multi-plan approach to addressing sea level rise is encouraged because the extent of areas affected by sea level rise exceeds the jurisdiction of any single plan.

Appendices

Appendix A. Shoreline Master Plans Update Status

Appendix A lists the Shoreline Master Plan update status with each of the 56 corresponding jurisdiction.

	Jurisdiction	SMP Update Status
1	Anacortes	Completed (2010)
2	Bainbridge Island	Completed (2014)
3	Bellingham	Completed (2013)
4	Bremerton	Completed (2013)
5	Burien	Completed (2013)
6	Coupeville	Completed (2009)
7	Des Moines	Completed (2010)
8	DuPont	Completed (2013)
9	Edmonds	Completed (2017)
10	Everett	Completed (2016)
11	Federal Way	Completed (2011)
12	Friday Harbor	Completed (2015)
13	Gig Harbor	Completed (2013)
14	Island County	Completed (2016)
15	Jefferson County	Completed (2014)
16	King County	Completed (2013)
17	Kitsap County	Completed (2014)
18	LaConner	Completed (2014)
19	Lacey	Completed (2011)
20	Langley	Completed (2013)
21	Lynnwood	Completed (2011)
22	Mukilteo	Completed (2012)
23	Normandy Park	Completed (2014)
24	Oak Harbor	Completed (2014)
25	Olympia	Completed (2015)
26	Port Angeles	Completed (2014)
27	Port Orchard	Completed (2013)
28	Port Townsend	Completed (2007)
29	Poulsbo	Completed (2013)
30	Ruston	Completed (2013)
31	Seattle	Completed (2015)
32	Sequim	Completed (2013)
33	Shelton	Completed (2015)
34	Shoreline	Completed (2013)
35	Snohomish County	Completed (2012)
36	Steilacoom	Completed (2013)
37	Tacoma	Completed (2013)
38	University Place	Completed (2015)
39	Whatcom County	Completed (2008)
40	Woodway	Completed (2013)
41	Aberdeen	State approval underway
42	Blaine	State approval underway
43	Clallam County	Local update underway
44	Grays Harbor County	Local update underway
45	Hoquiam	State approval underway
46	Ilwaco	Local update underway
47	Long Beach	State approval underway
48	Mason County	Local update underway
49	Ocean Shores	Local update underway
50	Pacific County	State approval underway
51	Pierce County	State approval underway
52	San Juan County	State approval underway
53	Skagit County	Local update underway
54	South Bend	State approval underway
55	Thurston County	Local update underway
56	Westport	State approval underway

Appendix B. Sea Level Rise Policies and Regulations Included in Shoreline Master Plans

Appendix B lists policies and regulations that include language about sea level rise in updated SMPs of jurisdictions with marine shoreline in Washington State. The jurisdiction, a summary of each policy and regulation, and the year in which the updated SMP took effect are listed.

Location	Year	Language
Bainbridge Island	2014	SMP>Critical Areas Regulations>Frequently Flooded Areas: Applicants for development in low lying shoreline areas and other areas where flood elevation is controlled by tide level shall be provided with information on **sea level rise** (Ord. 2005-03 § 2, 2005).
Bellingham	2013	SMP>Shoreline Goals and Policies>Shoreline Goals>Flood Damage Minimization>Objective: B: New scientific studies/information on tsunamis and **sea level rise** should be used to guide shoreline development as it becomes available and accepted as scientifically valid.
Bremerton	2013	SMP>Goals>General Goals>Conservation and Restoration>Goal: 7: Recognize and monitor the potential effects of **sea level rise** as additional scientific information becomes available. At the next major update of the Shoreline Master Program consider additional specific policies and regulations based on additional scientific projections.
Burien	2013, revised 2016	SMP>General Goals and Policies>Flood Prevention and Minimization Element>Policy: 4: Monitor **sea level rise** and accordingly adjust development standards and building setbacks to minimize flooding potential.
Edmonds	2017	SMP>Master Program Elements: Goals and Policies for the Edmonds Shoreline Master Program>Shoreline Use Element>Shoreline Use Policies: 11: The City of Edmonds shall stay abreast of scientific information regarding climate change and **sea level rise** and reevaluate the Shoreline Master Program development standards as soon as adequate scientific information is available. 12: The Edmonds Marsh study identified in the City of Edmonds Capital Improvement Plan is an important study for determining the potential impacts of climate change and **sea level rise** on the City of Edmonds and should be considered a high priority for completion.
Gig Harbor	2013	SMP>General Goals, Policies, and Regulations>Restoration and Remediation>Policy: F: Climate Change: Consideration should be made for potential adverse effects of global climate change and **sea level rise** when designing restoration and remediation projects.

Location	Year	Language
Gig Harbor	2013	SMP>General Goals, Policies, and Regulations>Restoration and Remediation>Policy: F: Climate Change: Consideration should be made for potential adverse effects of global climate change and **sea level rise** when designing restoration and remediation projects.
Island County	2016	SMP>Shoreline Goals and Policies>Shoreline Use Element>Policy: 6: **Sea level rise** and increased frequency and magnitude of extreme storm events as a result of climate change should be taken into account when considering and evaluating shoreline uses. SMP>Shoreline Goals and Policies>Conservation Element>Policy: 10: Island County shall establish a program to monitor the effects of ongoing climate change on the marine environment by **annually measuring sea level** and marine water pH at a minimum of five established sites spread throughout Island County. SMP>Shoreline General Policies>Flood Hazard Reduction>Policy: 6: When reviewing projects that could be affected by **sea level rise** adjust development standards such as building setbacks or elevation as necessary to minimize potential damage from flooding.
Jefferson County	2014	SMP> Master Program Goals>Shoreline Use>Goal: 10: Encourage all use and development to address potential adverse effects of global climate change and **sea level rise**. SMP>General Policies and Regulations>Shoreline Setbacks and Height>Policy: 2: Proponents of a development on no-bank or low bank marine shorelines are encouraged to locate the bottom of a structure's foundation higher than the level of expected future **sea-level rise**.

Location	Year	Language
King County	2013	SMP>Environment Protection Policies>Preparing for Climate Change Policy: S-650: King County shall ensure that new projects for and major maintenance or replacement of utilities, roads, and other public infrastructure consider the impacts of **sea-level rise** in the location, design, and operation of the projects. SMP>Environment Protection Policies>Preparing for Climate Change Policy: S-651: Habitat protection and restoration projects in the shoreline jurisdiction shall consider implications of **sea-level rise** and other climate change impacts to promote resiliency of habitats and species. SMP>Shoreline Use & Shoreline Modification>Shoreline Modifications>Shoreline Stabilization Policy: S-778: When new development occurs within the shoreline jurisdiction, the following measures apply: King County should notify all prospective developers of new development along Vashon and Maury Islands that their development may be impacted by **sea-level rise** and should encourage all such new development to be set back a sufficient distance to avoid the need for shoreline protection during the expected life of the development. SMP>Shoreline Use & Shoreline Modification>Shoreline Modifications>Shoreline Stabilization Policy: S-785: King County should encourage replaced structural shoreline stabilization located on Vashon and Maury Islands to be relocated outside of the 100-year floodplain whenever possible. The edge of the 100-year floodplain is consistent with a two-foot **sea-level rise.** Critical Areas Regulations>Shorelines>Stabilization Regulation: The department shall provide a notice to an applicant for new development or redevelopment located within the shoreline jurisdiction on Vashon and Maury Island that the development may be impacted by **sea level rise** and recommend that the applicant voluntarily consider setting the development back further than required by this title to allow for future **sea level rise** (Ord. 16985 § 41, 2010: Ord. 5734 § 5, 1981: Ord. 3688 § 413, 1978. Formerly K.C.C. 25.16.180).
Langley	2013	SMP>General Policies and Regulations>Flood Hazard Management Policy: When reviewing projects that could be affected by **sea level rise** adjust development standards such as building setbacks or elevation as necessary to minimize potential damage from flooding.

Location	Year	Language
Olympia	2015	SMP>Section 2: Goals and Policies>2.4 Shoreline Use and Development Policies: D. The City should continue to develop information about the impacts of **sea level rise** on the shoreline and other affected properties; the City should develop plans to address the impacts of **sea level rise** in collaboration with impacted property owners, the community and the Department of Ecology. These plans should include at minimum flood prevention approaches, shoreline environment impact considerations and financing approaches. The City should amend the Shoreline Master Program and other policy and regulatory tools in the future as necessary to implement these plans. E. The City should consider the impacts of **sea level rise** as it plans for the rebuild of Percival Landing and other shoreline improvements and it should be designed to provide for a reasonable amount of **sea level rise** consistent with the best available science and the life cycle of the improvements. SMP>Section 2: Goals and Policies>2.9 Marine Recreation Management Policy: G. The City recognizes that the Marine Recreation shoreline (Reach 5C) and the adjoining Urban Conservancy/Urban Intensity shoreline in Reach 6A provide a variety of benefits to the community including boat moorage, utility transmission, transportation, public access, water enjoyment, recreation, wildlife habitat and opportunities for economic development. These benefits are put at risk by continued shoreline erosion. The City recognizes that there exists a need to develop a detailed plan for shoreline restoration and stabilization for Reaches 5C and 6A and encourages the Port to partner in this effort. 1. This plan may include: a. Measures to enhance shoreline stabilization through the introduction of bioengineered solutions. b. Measures to incorporate habitat restoration water-ward of the OHWM. c. Measures to incorporate public access and use through trails, public art, parks and other pedestrian amenities. d. Measures to incorporate **sea level rise** protection. e. Setbacks, building heights and building design considerations. 2. Upon completion of a jointly developed shoreline restoration and stabilization plan for Reaches 5C and 6A, the City will initiate a limited amendment to the SMP to implement this plan. SMP>Section 2: Goals and Policies>2.11 Urban Intensity Management Policies: B: Olympia's shoreline is characterized by a wide variety of "urban" uses and activities, including commercial, industrial, marine, residential, and recreational uses. Together, these uses and activities create a vibrant shoreline that is a key component of Olympia's character and quality of life. These types of uses should be allowed within the Urban Intensity environment, with preference given to Water-Dependent and Water-Enjoyment uses. Shorelines in this SED are highly altered and restoration opportunities are limited. The City's own Percival Landing is a good example of how the immediate shoreline in the Urban Intensity SED should be redeveloped with a focus on public access and enjoyment, **sea level rise protection** and restoration of shoreline environmental function where feasible.

		E: Provide for the restoration, repair and replacement of Percival Landing including consideration of **sea level rise** protection. SMP>Section 2: Goals and Policies>2.32 Fill Policy: C: Fill should be allowed to accommodate berms or other structures to prevent flooding caused by **sea level rise**, when consistent with the flood hazard reduction provisions in this Shoreline Program. Any such fill should include mitigation assuring no net loss of ecological functions and system-wide processes. SMP>Section 3: Regulations>3.61 Shoreland Fill Regulation: L: Fill within the shoreline jurisdiction shall be allowed in response to **increases in sea level** subject to all other provisions of this Master Program and the mitigation sequencing process. SMP>Section 3: Regulations> 3.62 Fill Waterward of OHWM Regulation: A. Fill water-ward of the OHWM shall be permitted for the following purposes only, with due consideration given to specific site conditions and only as part of an approved use or development: 1. Port development for water dependent uses where other upland alternatives or structural solutions, including pile or pier supports is infeasible; 2. Expansion or alteration of transportation facilities where there are no feasible upland alternatives; 3. Ecological restoration or enhancement such as beach nourishment, habitat creation, or mitigation when consistent with an approved restoration or mitigation plan; 4. Disposal of dredge material in accordance with the Dredge Material Management Program (DMMP) of the Department of Natural Resources; 5. Construction of protective berms or other structures to prevent the inundation of water resulting from **sea level rise** shall be allowed subject to all other provisions of this Master Program and the mitigation sequencing process when there are no other feasible options to protect existing development; 6. Public access; or 7. Cleanup of contaminated sites. B. Fill shall be the minimum necessary for the intended use or activity.

Location	Year	Language
Port Angeles	2014	SMP>General Policies and Regulations>Critical Areas (Geologically Hazardous Areas)>Regulation: Proposals requiring a variance for development within 65 feet of the top of a marine bluff as outlined above shall be required to submit a geotechnical engineering report, prepared in accordance with the requirements of this SMP and Title 15, PAMC. The geotechnical engineering report shall: • be prepared by a Washington State licensed professional civil engineer with a specialty in geotechnical engineering or an engineering geologist with a Washington specialty license in engineering geology as specified in RCW 18.220, • be professionally stamped, • be based upon the best available science, • consider existing and proposed uses, • include risks of slope failure, • include coastal erosion rates over at least 75 years, based in part on anticipated **sea level rise** and storm frequency, • Document how, and include a certification that the proposed structure will not be in danger from erosion for at least 75 years, • Include vegetation enhancement and low impact development measures that might be used as a means of reducing undesirable erosion. • address the requirements outlined in PAMC 15.20.060 (C), and • outline how the proposal meets all of the variance criteria in chapter 7 of this SMP.
Seattle	2015	SMP/Comprehensive Plan>Land Use Element>Shorelines>Shoreline Protection and Restoration: LUG52: Address and minimize the impacts of **sea level rise** on the shoreline environment with strategies that also protect shoreline ecological functions, allow water-dependent uses and provide public access.

Location	Year	Language
Shelton	2015	SMP>Shoreline Master Program Goals and Policies>Flood Hazard Reduction Goals and Policies> Policy: SMP6.1c.: Floodplain management planning should consider implications of **sea-level rise** and other climate change impacts. SMP>Shoreline Master Program Goals and Policies>Restoration Goals and Policies> Goal: SMP10.2.: Restoration projects should be designed in a manner that complements adjacent natural resources, incorporates maintenance-free designs, minimizes in-water work, considers **sea-level rise**, and includes adaptive management techniques. SMP>Shoreline Master Program Goals and Policies>Restoration Goals and Policies> Policy: SMP10.2d: Habitat protection and restoration projects should consider implications of **sea-level rise** and other climate change impacts to promote resiliency of habitats and species. SMP>Shoreline Master Program Goals and Policies>Shoreline Use and Development Goals and Policies> Policy: SMP12.1m: Consider implications of **sea-level rise** and other climate change impacts as part of capital facilities and infrastructure projects.
Shoreline	2013	SMP>Goals and Objectives>Flood Hazard Management Goal: Protect the City of Shoreline and other property owners from losses and damage created by flooding along the coast and **sea-level rise.**