

Implementation and Next Steps

Chapter 9 includes the full list of adaptation strategies by type, phasing, and focus area.

Near-term implementation will focus on:

- Coordinating emergency response.
- Installing stormwater tide gates and valves.
- Formalizing collaboration and a governance structure.
- Initiating the Shoreline Master Program update.
- Refining the sea level rise and flood monitoring strategy.
- Monitoring new research on precipitation trends.

Monitoring and Action Triggers

Chapter 10 summarizes an approach to monitoring local environmental conditions, new sea level rise research and science, and storm event response.

Monitoring is an essential component of Plan implementation. There is uncertainty regarding the rate of sea level rise. Effective monitoring, evaluation, and decisions are needed to ensure that responses can be initiated before flood risks reach an unacceptable level.

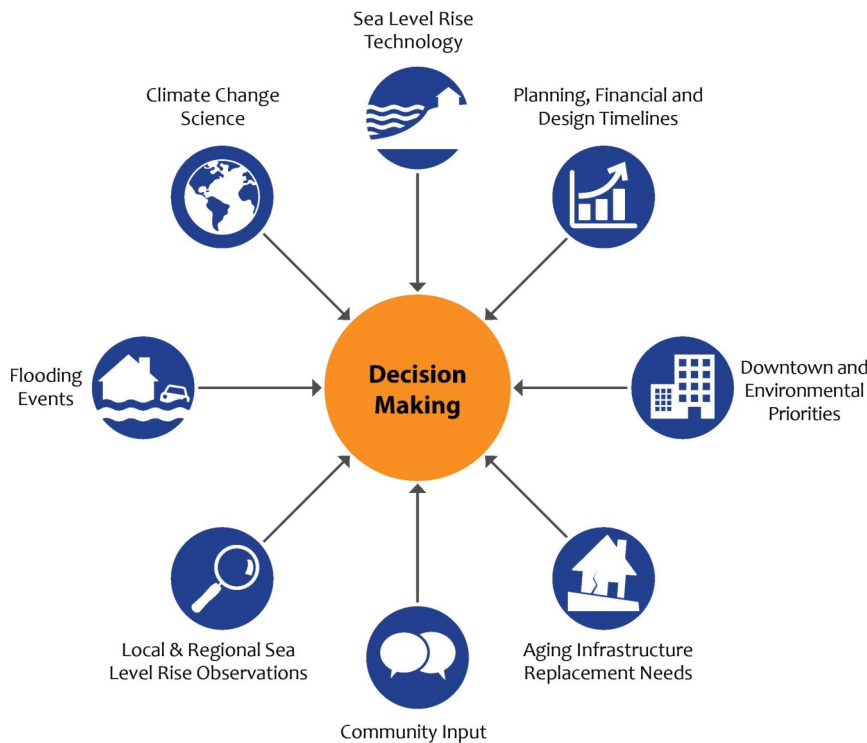
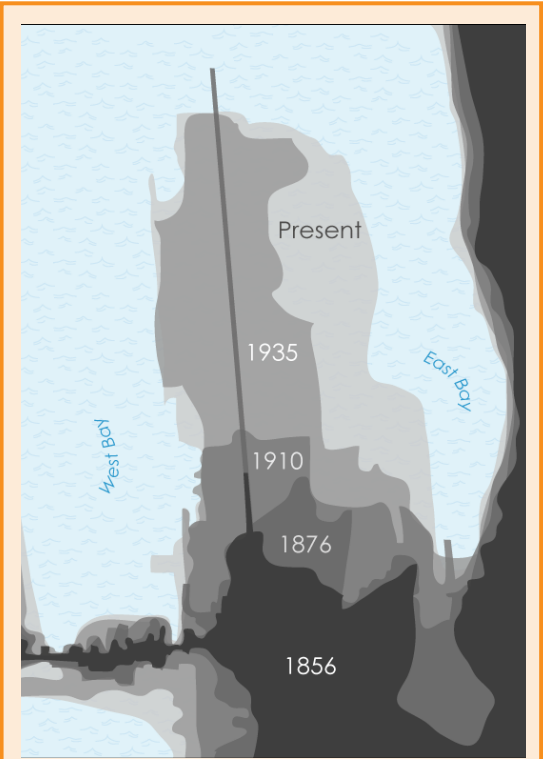


Figure 3. Decision Making Process



A History of Change

Recognition of the changes that have occurred in our community helps frame our perspective of future change. Downtown Olympia and its peninsula have changed dramatically over the past 150 years. Over this time, approximately 15 dredge and fill projects added over 430 acres and nearly two miles of shoreline to downtown. We can anticipate more change in the downtown landscape in the decades ahead. Sea level rise will be one of the drivers of change, but not the only driver.



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Why Develop a Sea Level Rise Response Plan for Downtown Olympia?

Downtown Olympia is the social, cultural, historic, and economic core of the city. While our downtown’s extensive shoreline helps make Olympia an extraordinary city, it also makes us vulnerable to flooding. In the coming decades, sea level rise could cause flooding downtown with property damage and loss of public services. At just 12 inches of sea level rise, a 100 year flood event could occur every other year.

It is this flooding risk that brought the City of Olympia (City), the Port of Olympia (Port), and the LOTT Clean Water Alliance (LOTT), collectively referred to as Project Partners, together to develop the Olympia Sea Level Rise Response Plan.

Future of Downtown Olympia

Planning to protect our downtown from sea level rise is a local government responsibility. This Plan provides a proactive and thoughtful path forward, but it is only an initial, incremental step and modest investment in preparing for sea level rise.

Proactive adaptation to sea level rise will be needed in the decades ahead to not only protect, but also to enhance our downtown and its shoreline. There is a lot of work to do to make our downtown stronger, safer and more vital. The preservation of downtown Olympia will require the community’s support and attention. Along the way, opportunities will exist to enhance the natural resources attributes of the shoreline.

The Importance of Governance Strategies

Without effective governance, the Sea Level Rise Response Plan is of little value to our community. The Project Partners understand the critical importance of establishing the governmental relationships and financial structure to support the timely implementation of this Plan. Many other governmental entities will need to be at the table. The Plan will be implemented over many decades and diligence needs to be sustained.

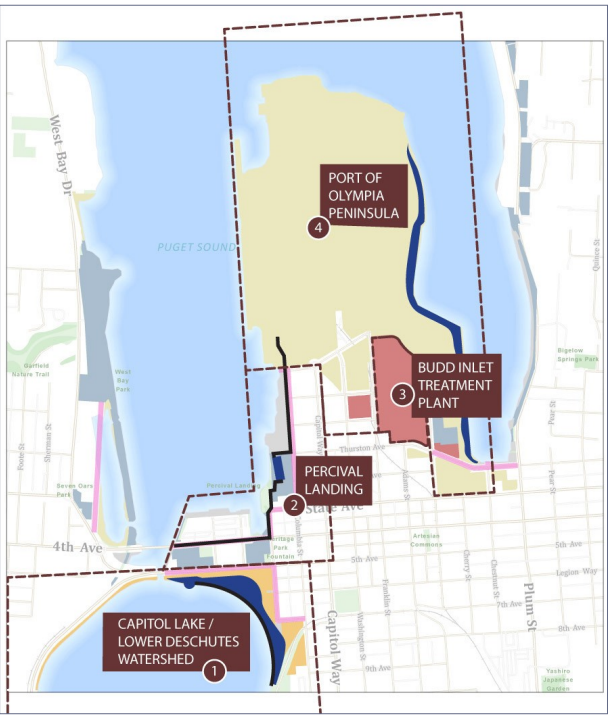
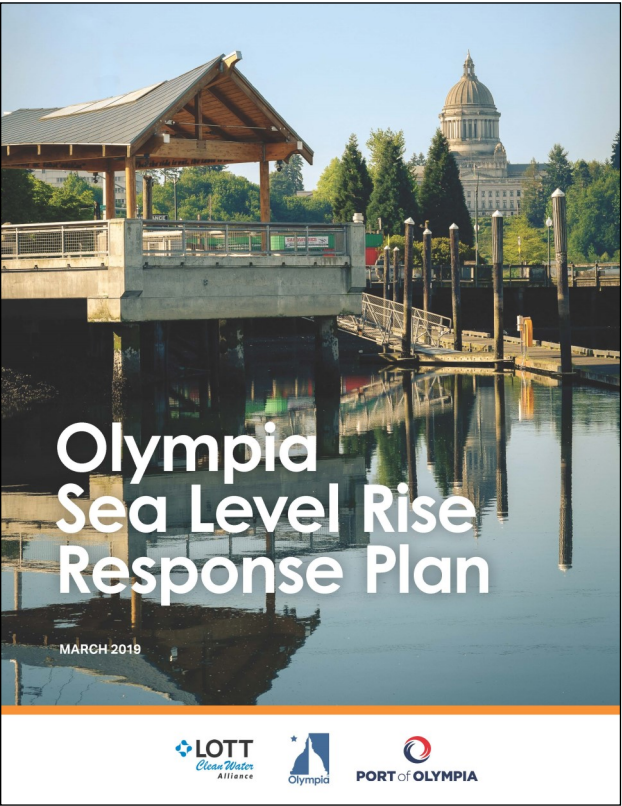


Figure 1. Olympia Sea Level Rise Response Plan Project Area and Focus Areas for Vulnerability and Risk Analysis and Adaptation Strategy Development.

Planning Context

Chapter 1 serves as the introduction to the Plan and planning process.

Vulnerability and Risk

Chapter 4 presents the findings of a vulnerability and risk assessment.

The vulnerability and risk assessment evaluated sea level rise impacts to key assets and services, including city facilities, fire and police, public works, transportation and parking, historic structures, LOTT, Port, State, County, federal, social services, community, and private utilities.

The vulnerability assessment identified what amount of sea level rise would expose assets to king tide and storm surge flooding. It identifies characteristics of assets that could make them more or less vulnerable to flood impacts. Sea level rise amounts of 0 to 68 inches were evaluated.

Assets along the Capitol Lake shoreline could be exposed to flooding today during a high flow event in the Deschutes River watershed. An extreme coastal storm surge event could also cause flooding along the Percival Landing and Isthmus shorelines. With only 6 inches of sea level rise, the portion of downtown Olympia that could be exposed to flooding during a 100-year coastal storm surge event expands dramatically.

In addition, flooding of the combined sewer system could convey floodwaters to the Budd Inlet Treatment Plant and overwhelm the plant, resulting in untreated or partially treated wastewater discharging directly to Budd Inlet through LOTT’s marine outfalls.

The results of the vulnerability and risk assessment formed the basis for prioritizing and phasing the Plan’s adaptation strategies.

Community Planning

In early 2017, Project Partners’ planning and technical staff were tasked by their respective elected officials to develop a formal community plan that prioritized strategies and investments for best responding to sea level rise, while protecting downtown’s economic, social, and environmental values.

Approach to Adaptation

Chapter 5 details the Plan’s proposed approach to adapting to sea level rise.

Key assumptions that informed the Plan’s approach to adaptation include:

- An incremental approach to protecting downtown is appropriate: near-term, mid-term and long-term actions are provided.
- Given the extensive infrastructure and investments made in our downtown, wholesale retreat is not a pragmatic strategy to pursue during the planning horizon.
- Our physical adaptation strategies are envisioned for construction on public rather than private property. With forethought, Olympia’s shoreline can be improved both socially and environmentally.
- Coordination and collaboration across governmental entities, non-profit organizations and private property owners will be needed.

Physical and Operational Strategies

Chapter 6 presents physical and operational strategies.

Example physical and operational strategies include:

- Construct a berm at Heritage Park.
- Install raised planters along Columbia Street and 4th Avenue.
- Raise vulnerable Budd Inlet Treatment Plant components.
- Raise Billy Frank Jr. Trail.
- Prepare for and respond to flooding emergencies.

While the shoreline adaptation strategies in the Plan are valid from a present day engineering perspective, they are conceptual and will continue to be improved upon as we learn more and work with others.

Governance and Informational Strategies

Chapter 7 presents governance and informational strategies.

Informational strategies address knowledge gaps in our understanding of flood vulnerabilities.

Key governance and informational strategies include:

- Develop a governance structure and organization for managing our response.
- Investigate long-term financing mechanisms.
- Develop and implement a sea level rise community and stakeholder strategy.
- Continue regional efforts to develop an overarching climate change policy.

Cost of Adaptation

Chapter 8 provides generalized costs for the Plan’s physical strategies.

Estimated total costs range from \$190M to \$350M. Costs would be spread out over decades and shared by the Project Partners, other stakeholders, and the community. Funding may come from a mix of federal, State, County, and City sources.

Phased Implementation

Olympia’s sea level rise response will be phased over decades. However, early phases will need to be planned and implemented to support later phases, so that future strategies build upon near-term actions. This approach will be necessary both pragmatically and financially. With this in mind, early phases may be resource intensive as the foundations of subsequent phases are developed. Investments in adaptation will be made when sea level rise science and monitoring demonstrates the need.

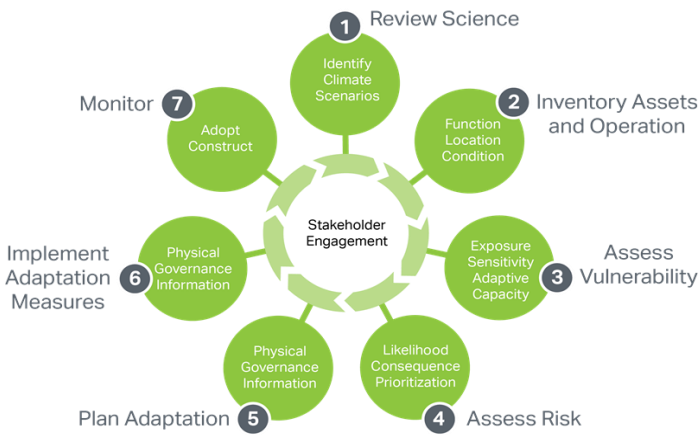


Figure 2. Sea Level Rise Adaptation Planning Process

Plan development followed sea level rise adaptation best practices and leveraged experiences and lessons learned from other cities, ports and wastewater treatment facilities throughout the country.

Engagement and Outreach

Chapter 2 summarizes engagement and outreach activities in support of the Plan.

Community engagement activities included E-newsletter project updates, four open house and community workshops, coordination with State agencies, workshops with Project Partner staff, briefings for local community groups and citizen advisory committees, a sea level rise walking tour event, conference speaking engagements, and school outreach events.

Climate Science for Olympia

Chapter 3 provides an overview of sea level rise science and projections.

The Plan considers Olympia-specific projections of sea level rise for the year 2100 of 36 inches (most likely) and 68 inches (high-range). These values take into account that downtown Olympia may subside (sink) by as much as 8 inches by 2100.