PORT of OLYMPIA
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Commission Work Session
Monday, May 12, 2025
4:30 PM

Percival Plaza - Olympics Room
626 Columbia Street NW
Olympia, WA 98501

The meeting agenda is available on the Port's website as of May 8, 2025.
https://www.portolympia.com/commission

The public may join the meeting from their computer, tablet or smartphone at:

https://us06web.zoom.us/j/88192541987?pwd=J9PoPqutVLf46PFZeo5kuzIsWfwhsL.1

or Telephone: 1 253 215 8782

Meeting ID: 881 9254 1987

Passcode: 082603

No public comment or commission action will be taken at this Work Session.

AGENDA

A. Call to Order
B. Approval of Agenda
C. Sea Level Rise and Climate Resilience Briefing: Natalie Weiss, Climate Programs, City of Olympia
D. Adjourn

COVER MEMO

Briefing Date/Time:	May 12, 2025
Staff Contact/Title:	Jonathon Wolf, Environmental Manager, 360.528.8073, jonathonw@portolympia.com Guest Presenter – Natalie Weiss, Climate Programs, City of Olympia
Subject:	Sea Level Rise and Climate Resilience
Purpose:	☒ Information Only ☐ Decision Needed

Overview:
Briefing - No action required.

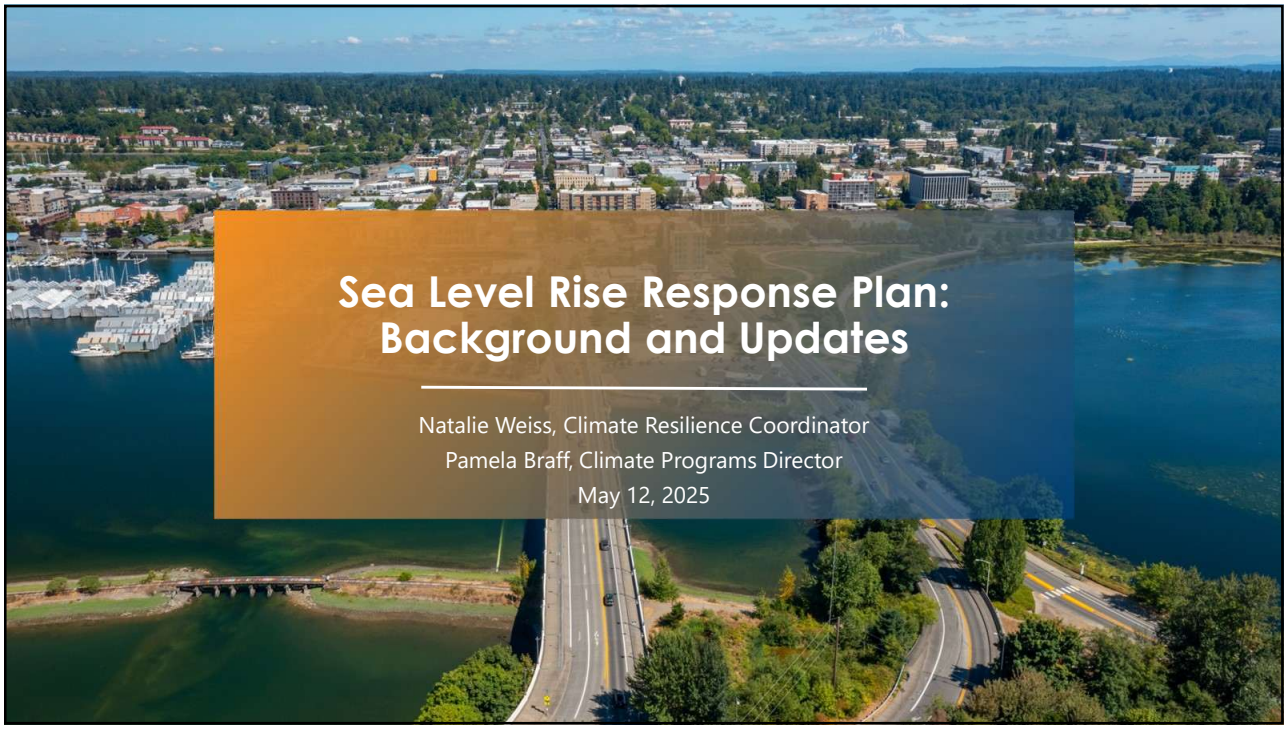
Background:
Natalie Weiss from the City of Olympia Climate Program will present on the implementation of the Olympia Sea level Rise Response Plan. The Olympia Sea level Rise Response Plan is a product of the Olympia Sea Level Rise Collaborative that includes the Port of Olympia, the City of Olympia, and LOTT Clean Water Alliance.

Natalie will describe the history of the Sea Level Rise Response plan and current and future efforts to build resiliency against sea level rise in Olympia and the Port peninsula.

Documents Attached:
PowerPoint Presentation

Summary and Financial Impact:
This is an informational briefing with no action proposed at this time. Therefore, there is no financial impact.

Conclusion:
This briefing is to update the Commission on current sea level rise resiliency efforts and stimulate conversations on what the Port of Olympia can do to further overall climate resiliency efforts.



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History of Sea Level Rise and Adaptation Action

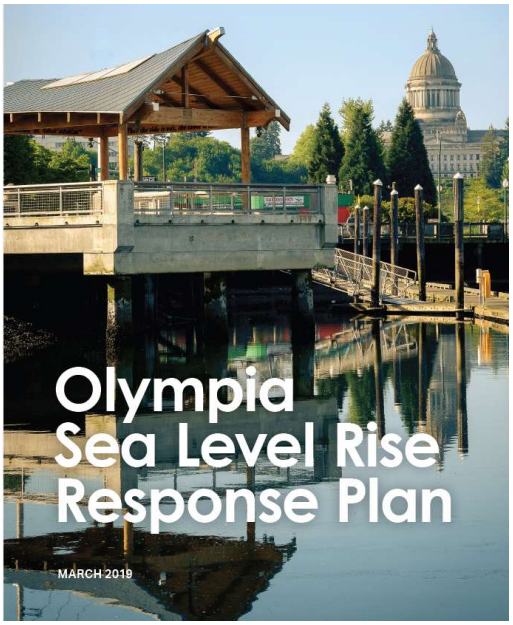
2

Olympia Sea Level Rise Response Plan

The adopted document guiding all sea level rise planning and implementation until 2100.

- Project partners: City of Olympia, LOTT Clean Water Alliance, and Port of Olympia

- SLR Plan includes:
  - Science and Projections
  - Vulnerability and Risks of assets
  - Adaptation Strategies
  - Needed Actions and Next Steps
  - Estimated Costs and Resources
  - Implementation Schedules



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Olympia Sea Level Rise Collaborative

- Shoreline conditions requires strong planning and design coordination across property owners
- SLR Collaborative established with key shoreline managers to implement the strategies within each focus areas

Port of Olympia

City of Olympia

LOTT Clean Water Alliance

WA Dept. of Enterprise Services*

Squaxin Island Tribe*

Right-of-Way

* Non-voting members

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Planning Context

The Plan encompasses 4 main focus areas:

1. Capitol Lake and Lower Deschutes Watershed
2. Percival Landing
3. Budd Inlet Treatment Plant
4. Port of Olympia Peninsula

Each focus area has specific adaptation strategies and the timeline for when the strategies must be implemented by.

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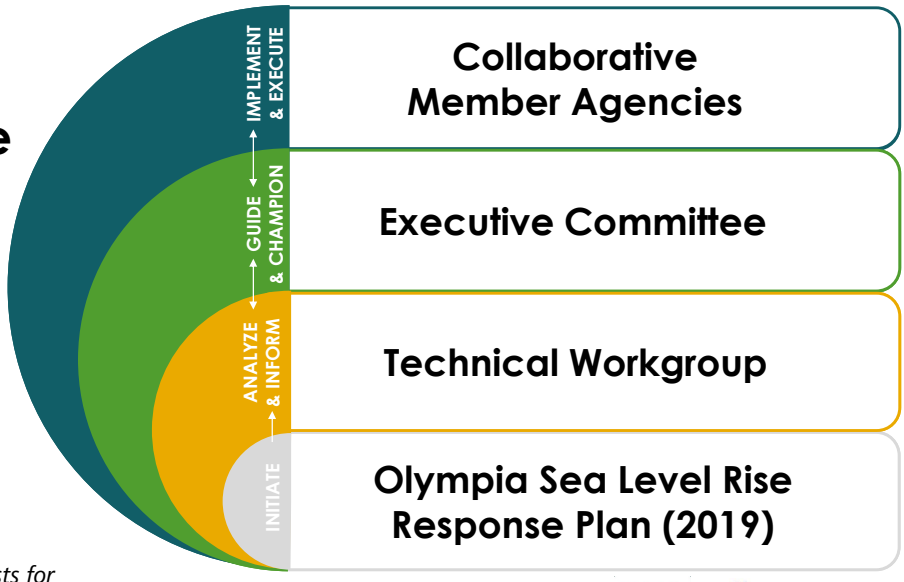
Olympia Sea Level Rise Collaborative Structure



City, Port, and LOTT share costs for coordination and short-term project implementation.

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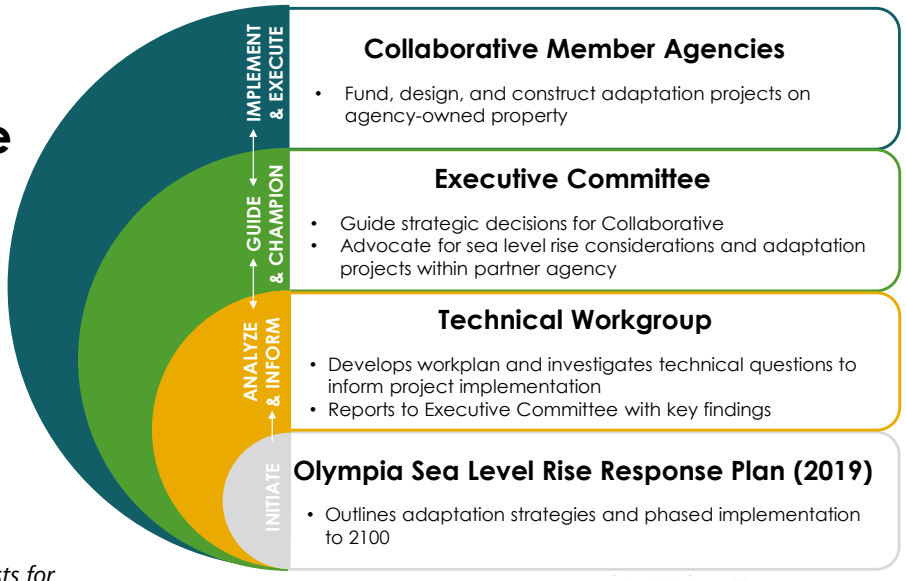
Olympia Sea Level Rise Collaborative Functions



City, Port, and LOTT share costs for coordination and short-term project implementation.

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What are we up against?

Sea Level Rise Projections and Impacts

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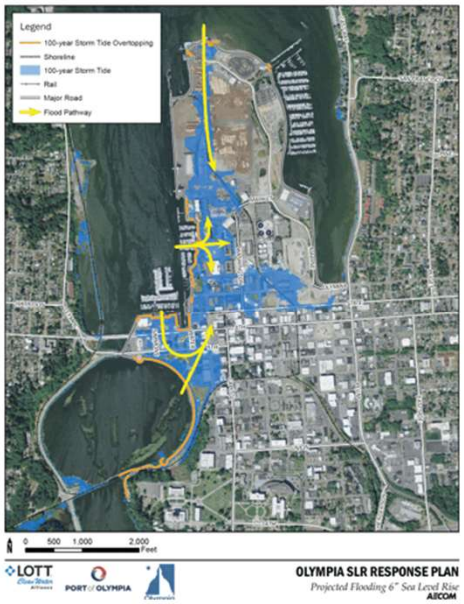
Sea Level Rise Projections

Year	Most Likely (inches)	High-Range (inches)
2020	3	7
2030	**5 to 7**	**11 to 13**
2040	8 to 10	16 to 18
2050	**11 to 13**	**23 to 25**
2060	15 to 17	30 to 32
2070	18 to 20	37 to 39
2080	22 to 25	46 to 49
2090	27 to 31	54 to 58
2100	**32 to 36**	**64 to 68**



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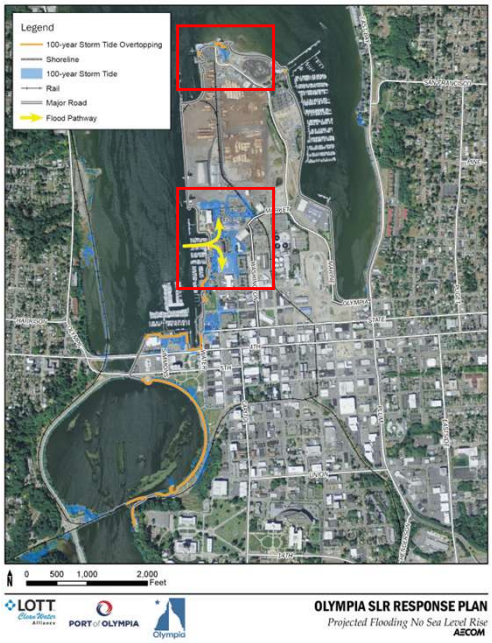
Port of Olympia Vulnerabilities: Present Day

- Port surveyed property elevations as a part of the SLR plan development (Appendix D2)
- Low spots at the Port Plaza and at North Point
  - Currently vulnerable to 100-year coastal flood



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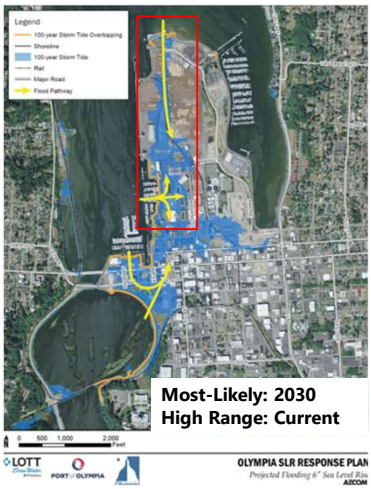
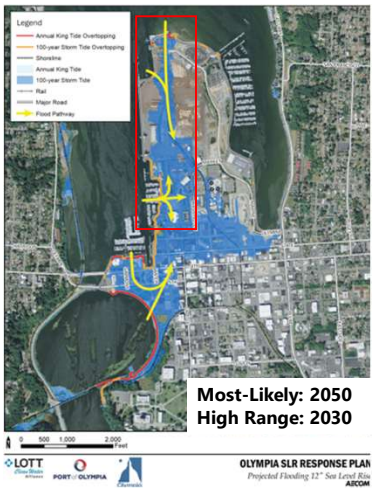
Port of Olympia Vulnerabilities: Between 2030-2050

- With low to moderate sea level rise (6 to 12 inches), floodwaters could travel southward from North Point and northward from Percival Landing and impact the following assets:
  - Marine Terminal (cargo yard, rail, and Warehouse A)
  - Cascade Pole site and the groundwater treatment facility
  - Stormwater pumping station
  - Port Plaza and Farmers Market





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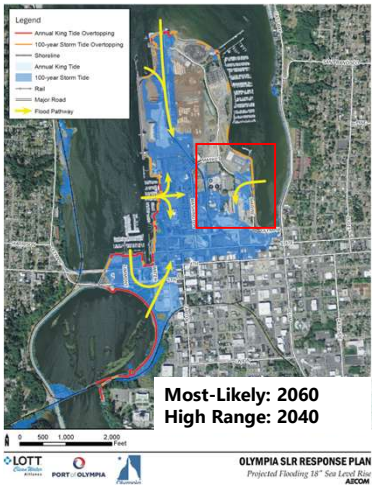
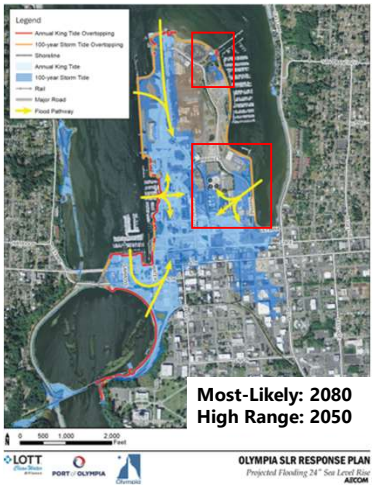
Port of Olympia Vulnerabilities: Between 2040-2070

- With moderate sea level rise (18 to 24 inches), East Bay shoreline and assets exposed to flooding:
  - Olympia Area Rowing Center
  - Swantown Marina and Boatworks
  - Shipping berths
  - Key transportation corridors (Marine Drive)





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Should We Stay or Should We Go?
Managed Retreat Considerations

$1.3 Billion

Cost of moving the BITP alone

Above and Below Ground Infrastructure

Demolition, Disposal, Clean Up, Restoration

Irreplaceable Cultural Resources

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Wholesale retreat deemed unpragmatic and infeasible.

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Demolition, Disposal, Clean Up, Restoration

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Wholesale retreat deemed unpragmatic and infeasible.

Adaptation and protection strategies focus on publicly owned property and rights-of-way.

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How are we guaranteeing protection?

Spatial and Temporal Adaptation Strategies

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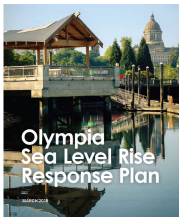
A Comprehensive Approach

The Sea Level Rise Response Plan and Collaborative employs a variety of adaptation actions to address vulnerabilities and mitigate risk from sea level rise.



Informational	Physical	Governance	Operational
Address **data and knowledge gaps** in our understanding of flood vulnerabilities.	Address flood vulnerabilities by making **physical modifications** to the shoreline or individual assets to make them less vulnerable to flooding.	Address flood vulnerabilities through **policies, plans, coordination, guidelines, and regulations.**	Address flood vulnerabilities through **operations and maintenance** in response to changing conditions.

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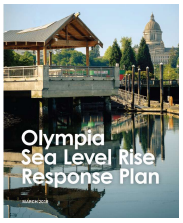
Phased Implementation Strategy

The Sea Level Rise Response Plan and Collaborative phases in the strategies to align with SLR projections to the end of century.



Near Term Strategies Up to 6 Inches of SLR	Mid Term Strategies Up to 24 inches of SLR	Long Term Strategies Up to 68 inches of SLR
(2019 – 2024)	(2025 - 2050)	(2050 - 2100)
Informational	Informational	Informational
Physical	Physical	Physical
Governance	Governance	Governance
Operational	Operational	Operational

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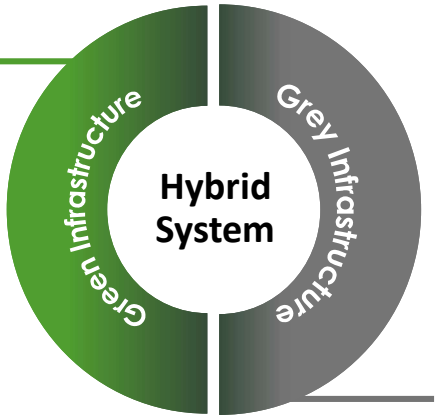
Physical Strategies: Linked and Integrated

Nature-based solutions and low impact development

- Upstream
- Along the shoreline

Living Shorelines

Raised Landscaping



Raised Streets

Flood Walls

Flood mitigation and critical infrastructure protection

- Permanent
- Temporary

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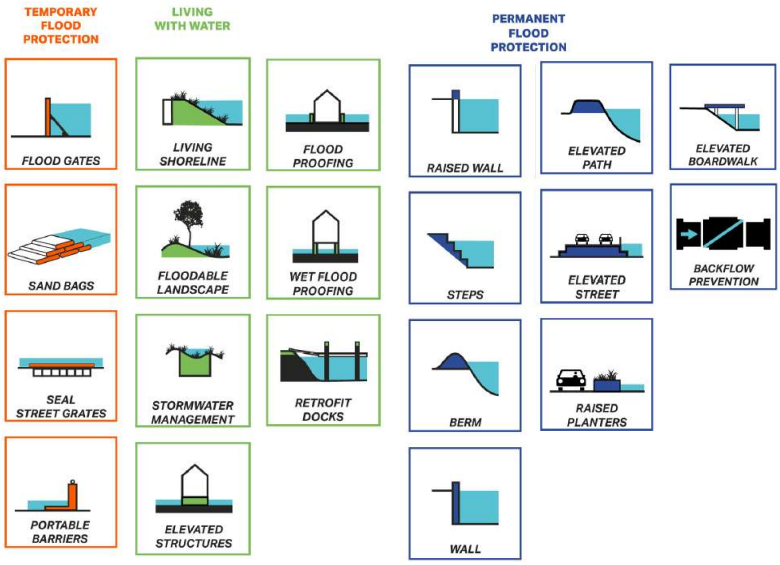
Full Suite of Physical Strategies



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Port of Olympia's SLR Adaptation Strategy

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Port of Olympia's SLR Responsibilities

1. Implement adaptation strategies on Port property
2. Ensure new construction is aligned with future SLR projections

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Port of Olympia's SLR Responsibilities

1. **Implement adaptation strategies on Port property**
2. Ensure new construction is aligned with future SLR projections

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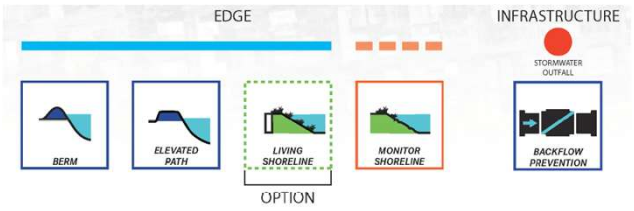
Port Peninsula Design Mid-Term Strategies: 24" of SLR by 2050



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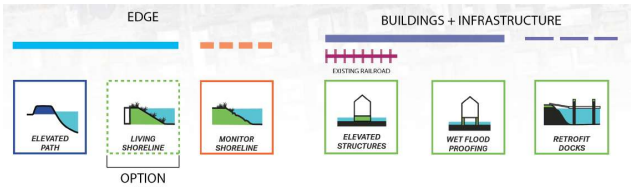
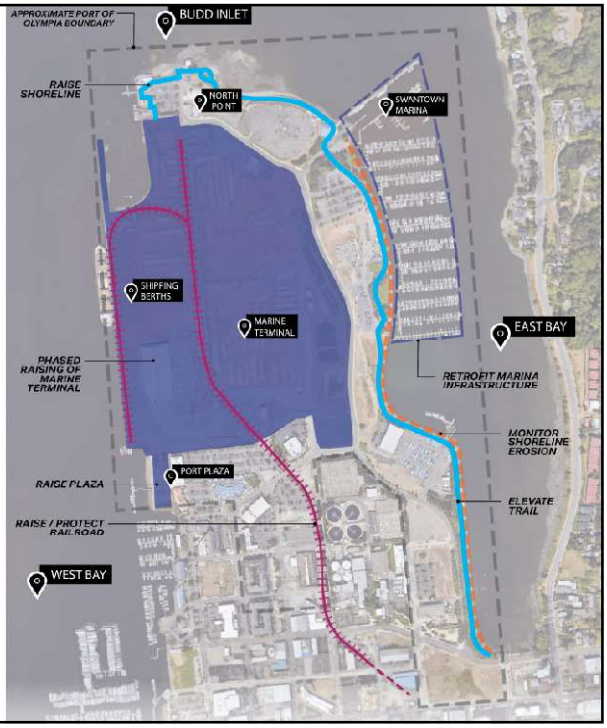
Port Peninsula Design Long-Term Strategies: 68" of SLR by 2100



***NOTE:** These strategies were proposed based on the *current* infrastructure located in this area. Any new construction may impact types and locations of adaptation strategies pursued.



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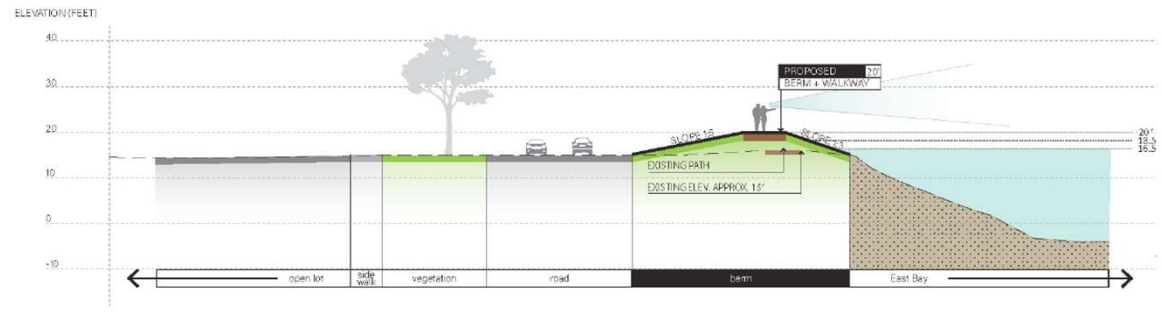
Port Peninsula Design Long-Term Strategies: 68" of SLR by 2100

KEY ELEVATIONS
Existing elevation of path = 15'
Future Daily High Tide = 16.5'
Future King Tide = 18.5'
Future 100-Year Flood = 20'

MARINE DRIVE PERSPECTIVE



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Strategies for the Port until 2100

Table 8: Summary of Potential Physical and Operational Adaptation Strategies at Port of Olympia Focus Area

Near-term Strategies (0 to 5 years) Sea Level Rise: <6"	Mid-term Strategies (5 to 30 years) Sea Level Rise: up to 24"	Long-term Strategies (30+ years) Sea Level Rise: up to 68"
– Emergency response to flood events, including sandbags and coordination with the City – Install backflow prevention on stormwater outfalls "A" and "J"	– Elevate low-lying shoreline segments along North Point, the marine terminal, and Port Plaza – Monitor ongoing shoreline erosion along East Bay – Install backflow prevention on stormwater outfalls "E", "F", and "K" – Evaluate feasibility and phasing of incrementally raising shipping berths, cargo yard, and rail	– Raise Billy Frank Jr. Trail along East Bay and North Point – Monitor ongoing shoreline erosion along East Bay – Incrementally rebuild and raise shipping berths, marine terminal cargo yard, and rail to higher elevations as part of lifecycle replacement – Retrofit and rebuild marina docks and gangways to higher elevations over time as needed

See full list of completed near-term strategies in the Five-Year Progress Report!

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Port of Olympia's SLR Responsibilities

1. Implement adaptation strategies on Port property

2. **Ensure new construction is aligned with future SLR projections**

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2025 Workplan: Design Guidelines for Capital Project Planning

Project Description:

Develop and recommend guidelines for the SLR Collaborative Partners to consider, plan, and design for sea level rise and increasing precipitation intensity in capital projects.

Work will involve convening technical staff to review and assess current practices and developing **guidance to ensure that capital projects are designed and located to avoid (or adapt to) sea level rise** and future flood risks.

This project may inform, but will not address updates to Olympia's Engineering Design and Development Standards. The **Port would need to adopt the guidelines independently** for their own operating procedures.

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Example: NYC Resiliency Design Guidelines

Guidance on how to determine the flood elevation based on the useful life of a capital facility. The flood elevation influences the design of the structure.

Table 5 - Determine the sea level rise-adjusted design flood elevation (DFE)[53]

Critical* and Non-critical Facilities

End of Useful Life	Base Flood Elevation (BFE)[54] in NAVD 88	+ Freeboard[55]	+ Sea Level Rise Adjustment[56]	= Design Flood Elevation (DFE) in NAVD 88
2020s (through to 2039)	FEMA 1% (PFIRM)	24"	6"	= FEMA 1% + 30"
2050s (2040-2069)	FEMA 1% (PFIRM)	24"	16"	= FEMA 1% + 40"
2080s (2070-2099)	FEMA 1% (PFIRM)	24"	28"	= FEMA 1% + 52"
2100+	FEMA 1% (PFIRM)	24"	36"	= FEMA 1% + 60"

Additional analysis should be conducted to incorporate wave action and wave run-up in DFE calculations especially in areas that are located within the FEMA's 1% annual chance Limit of Moderate Wave Action (LIMWA) zone. Wave run-up is the maximum vertical extent of wave uprush above surge.

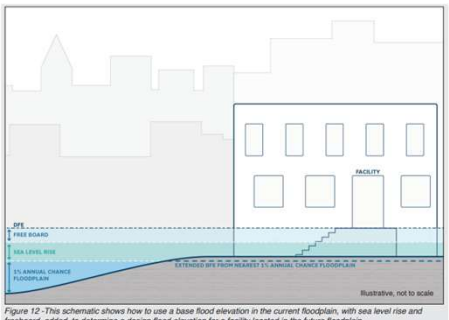

Figure 12 -This schematic shows how to use a base flood elevation in the current floodplain, with sea level rise and freeboard, added, to determine a design flood elevation for a facility located in the future floodplain.

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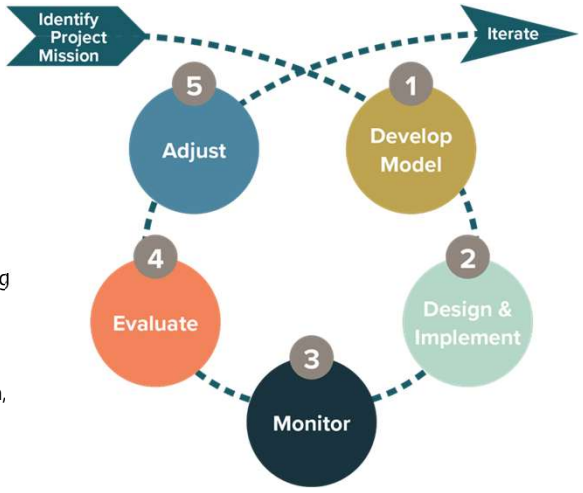
2025 Workplan: Refine Sea Level Rise and Flood Monitoring Strategy

Project Description:

Refine the sea level rise monitoring strategy to provide a basis for adaptive management, implementation, and timing of capital projects and funding needs.

Work will include refining trigger points for future actions, identifying data needs, and developing a monitoring and reporting system to track sea level rise, vertical land motion, and storm-based flooding.

Develop recommendations for future monitoring.



Source: https://watershed.center/adaptively-manage-watersheds/

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What's Next?

5-Year Work Plan

Collaborative partners are developing 5-year work plan to begin mid-term adaptation strategies.

Funding and Grants

Permanent interventions are expensive. Continue exploring options for sustainable funding and financing

Knowledge Gathering

Keep up to date with best practices in governance, financing, and adaptation design strategies.

Port Master Plan

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CLIMATE ACTION AND RESILIENCE
Olympia

Any questions?

Thank you!

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