



# Sea Level Rise Response Plan



**City of Olympia  
Planning Commission  
April 15, 2019**

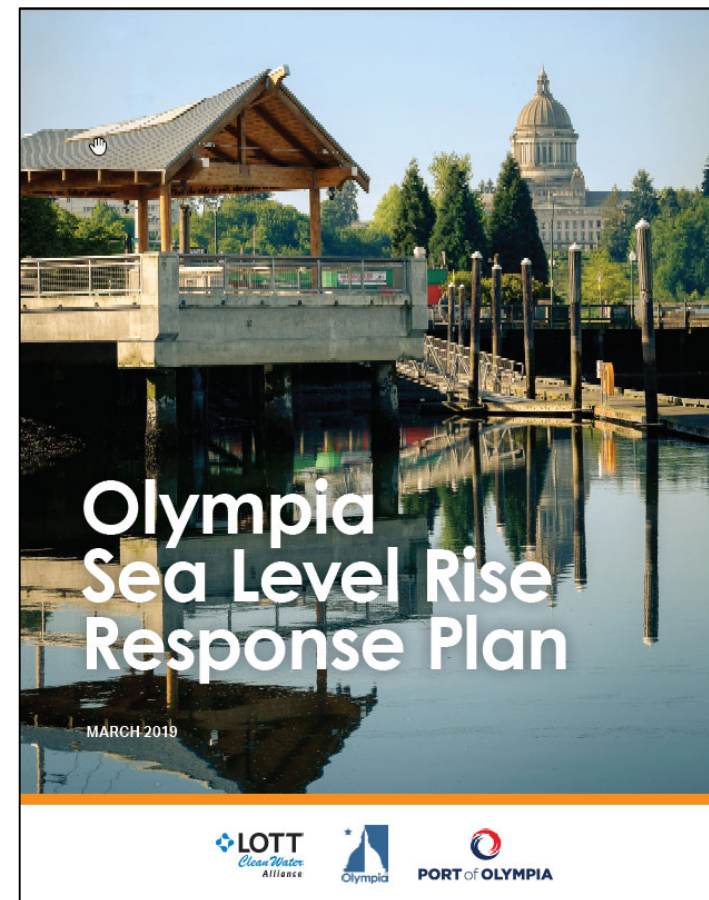
# Sea Level Rise Response Plan

## We Have A Plan!

Available on the City's website:

[www.olympiawa.gov/slr](http://www.olympiawa.gov/slr)

- Final Plan
- Story Maps
- Planning Framework
- Climate Science Review
- Vulnerability and Risk Assessment



# Sea Level Rise Response Plan

## Developing the Response Plan

### Conceptually challenging

- New territory
- Multi-jurisdictional
- Understanding our downtown
  - Critical facilities, infrastructure, private structures, public amenities, natural resources, social services
- Long planning horizon
- Scientific uncertainties





# Sea Level Rise Response Plan

## Our Planning Commitment

### Goal:

Develop a formal community plan that prioritizes strategies and investments for best responding to sea rise, while protecting downtown's economic, social and environmental values.

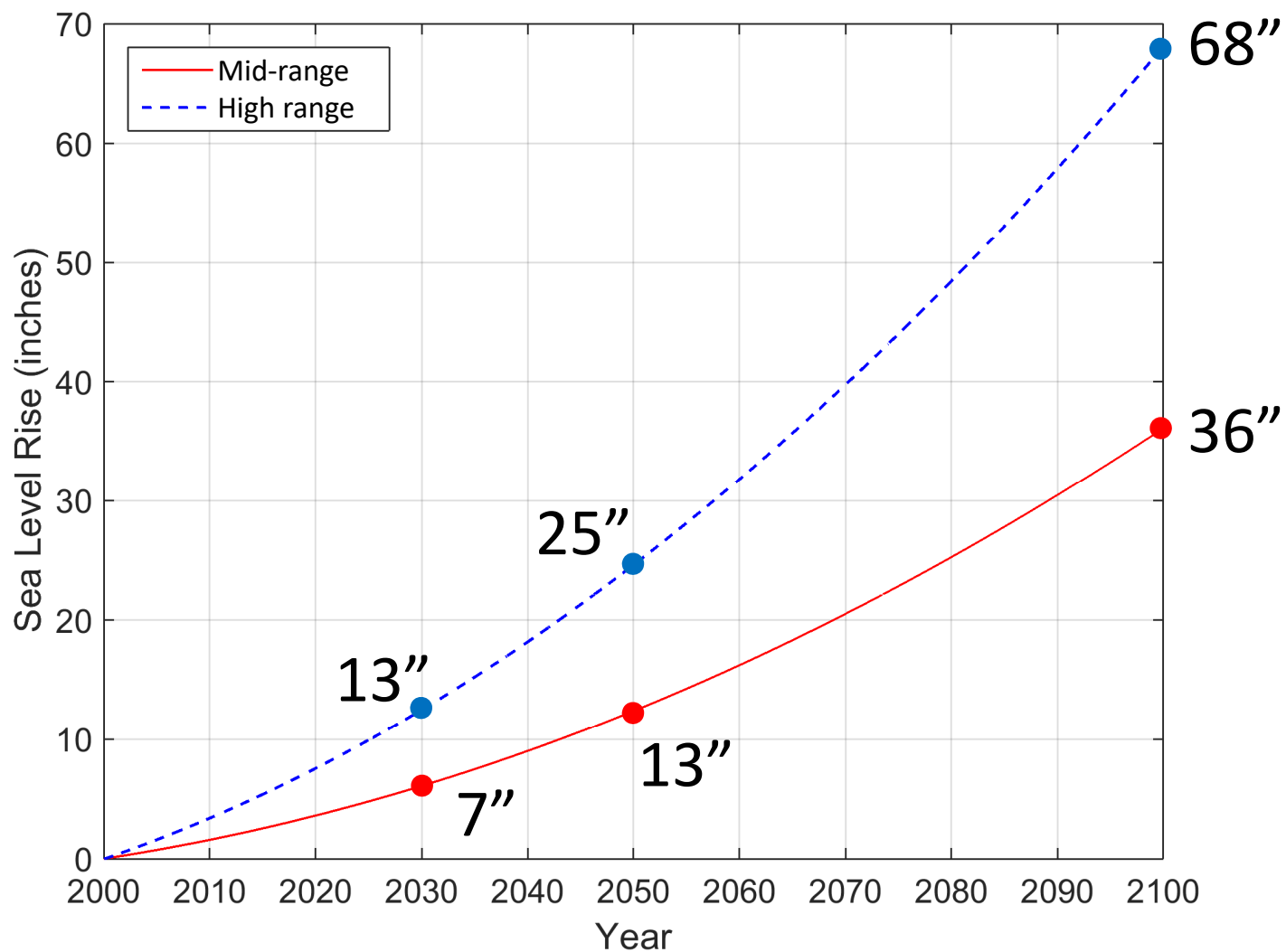
### The plan identifies:

- Needed actions
- Estimated costs and resources
- Implementation schedules
- Responsibilities



# Sea Level Rise Response Plan

## Sea Rise Science





# Sea Level Rise Response Plan

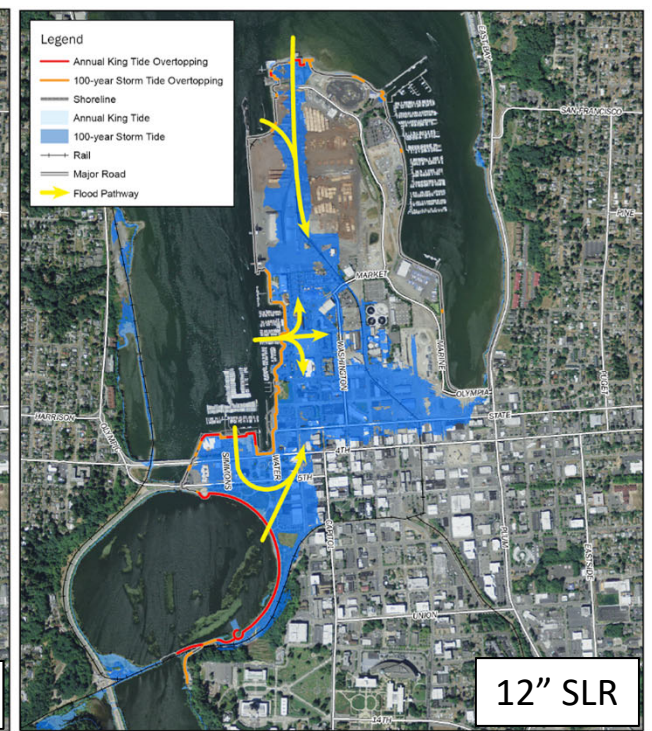
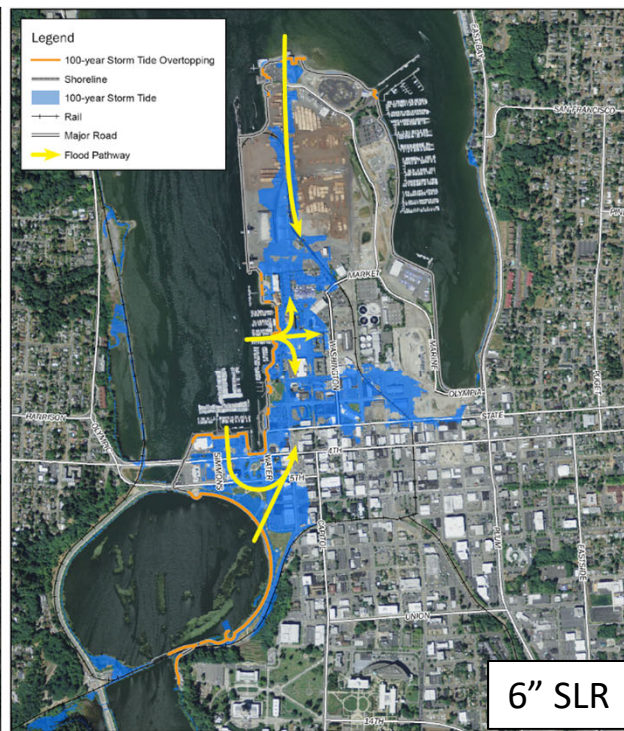
## Probabilities

Projection for 2100	Probability of Exceedance
2.1 feet	83%
2.7 feet	50%
3.5 feet	17%
3.8 feet	10%
5.5 feet	1%
<b>5.7 feet</b>	<b>Olympia's SLR Plan</b>
9.0 feet	0.1%
10.0 feet	Unknown – probably 0.01%



# Sea Level Rise Response Plan

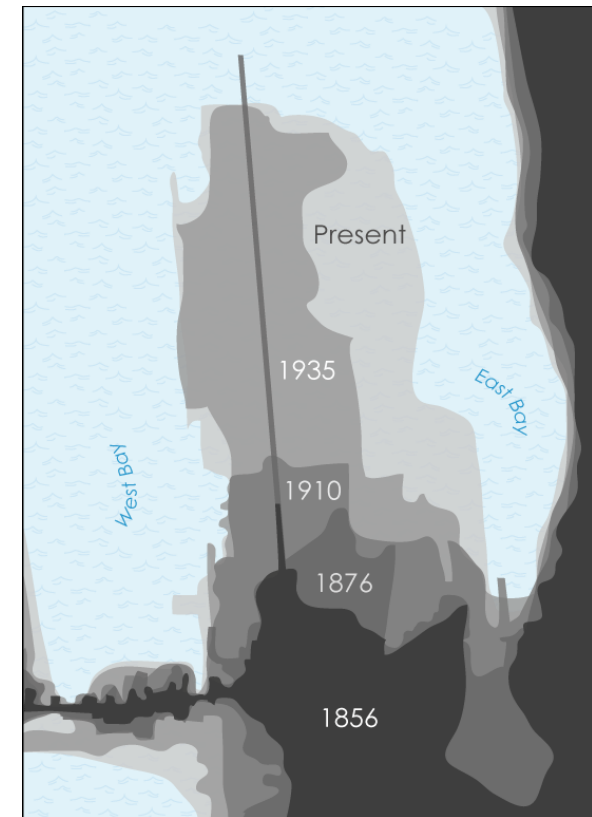
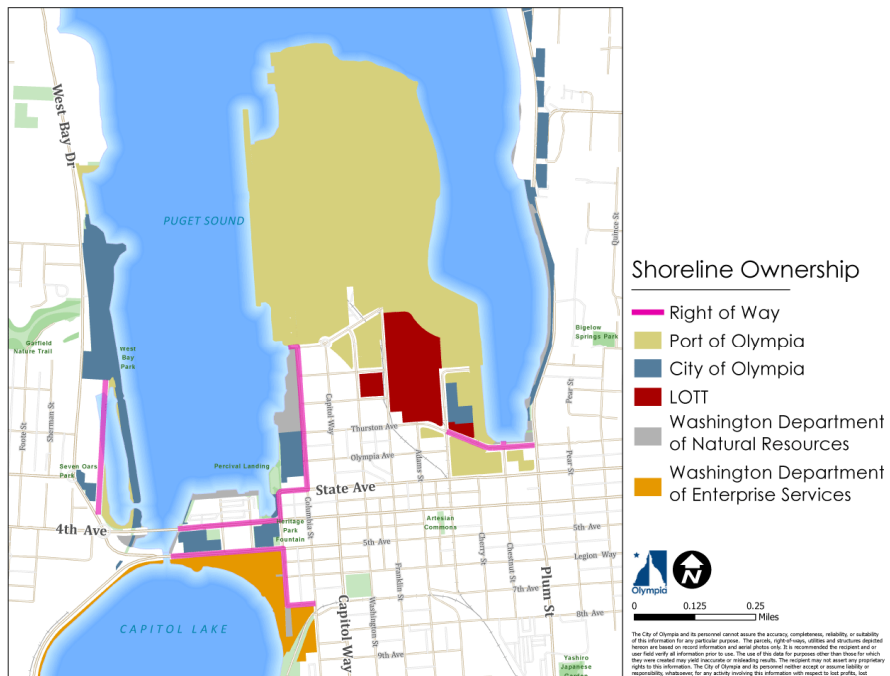
## Downtown Flood Dynamics





# Sea Level Rise Response Plan

## Olympia's Unique Circumstances

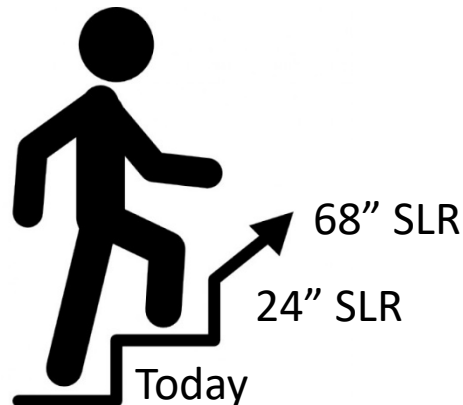




# Sea Level Rise Response Plan

## Phased Response

- Immediate (0-5 years): 2020-2025  
[<6" SLR]
- Mid-Term (5-30 years): 2025-2050  
[13-25" SLR]
- Long-Term (30+ years): 2050 and beyond  
[36-68" SLR]





# Sea Level Rise Response Plan

## Types of Response Strategies

- Physical
  - Infrastructure
- Operational
  - Preventative/emergency response
- **Governance**
  - **Collaboration, finances, policy, regulations**
- Informational
  - Technical/scientific understanding



# Sea Level Rise Response Plan

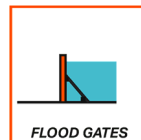


# Sea Level Rise Response Plan

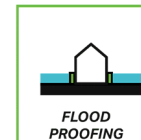
## Menu of Physical Strategies

- Temporary flood protection
- Living with water
- Permanent flood protection

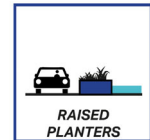
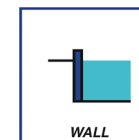
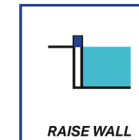
### Temporary



### Living with Water



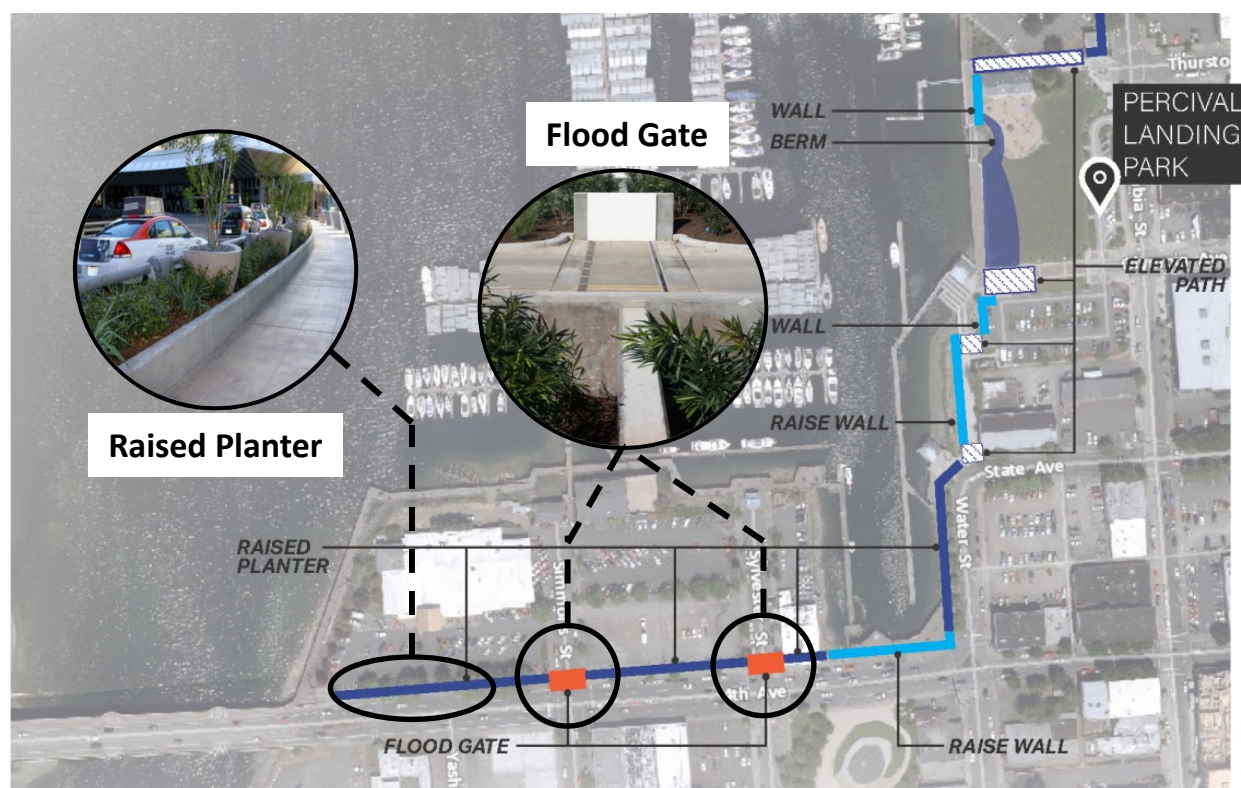
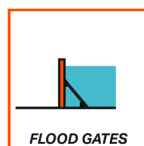
### Permanent





# Sea Level Rise Response Planning

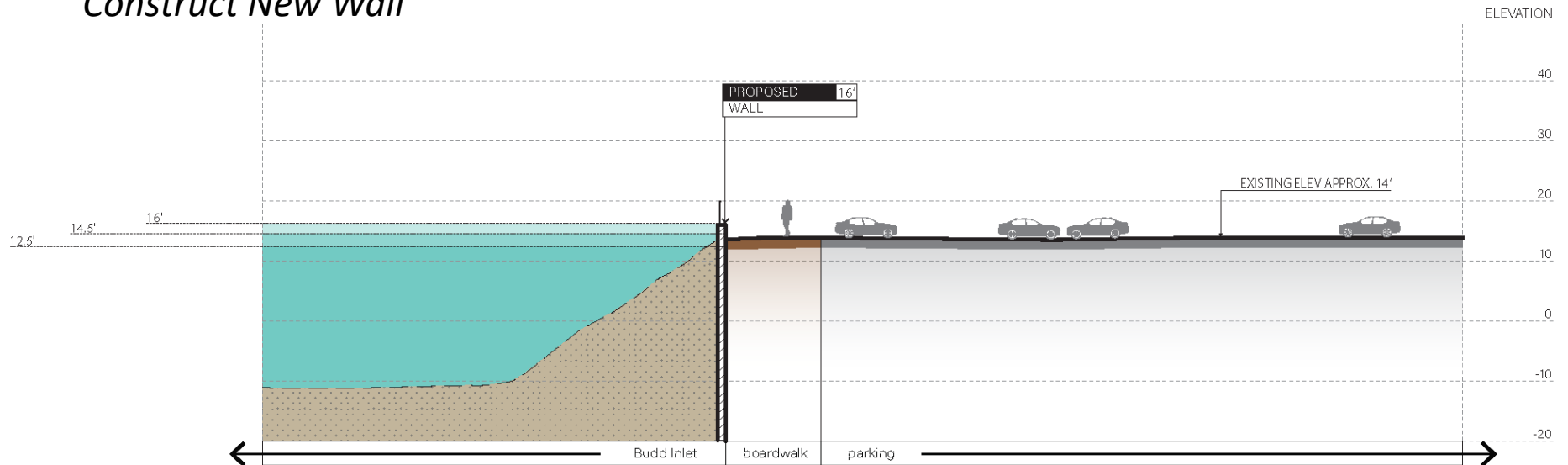
## Percival Landing Strategies



# Sea Level Rise Response Planning

## Percival Landing Mid-Term Strategy for 24" SLR

*Construct New Wall*



### NOTES

ELEVATION DATUM:	NAVD88
FUTURE DAILY HIGH TIDE:	12.5'
FUTURE KING TIDE:	14.5'
FUTURE 100 YEAR FLOOD:	16'

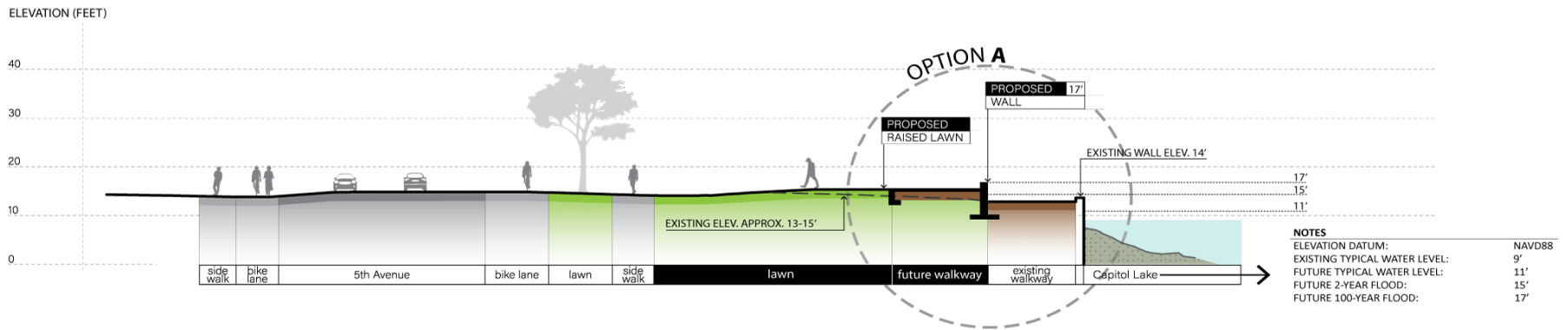


# Sea Level Rise Response Plan

## Capitol Lake Strategies for 24" SLR

**CAPITOL LAKE**  
MID-TERM SOLUTION FOR 24" OF SLR  
*CONSTRUCT NEW WALL*

### 5TH AVENUE PERSPECTIVE

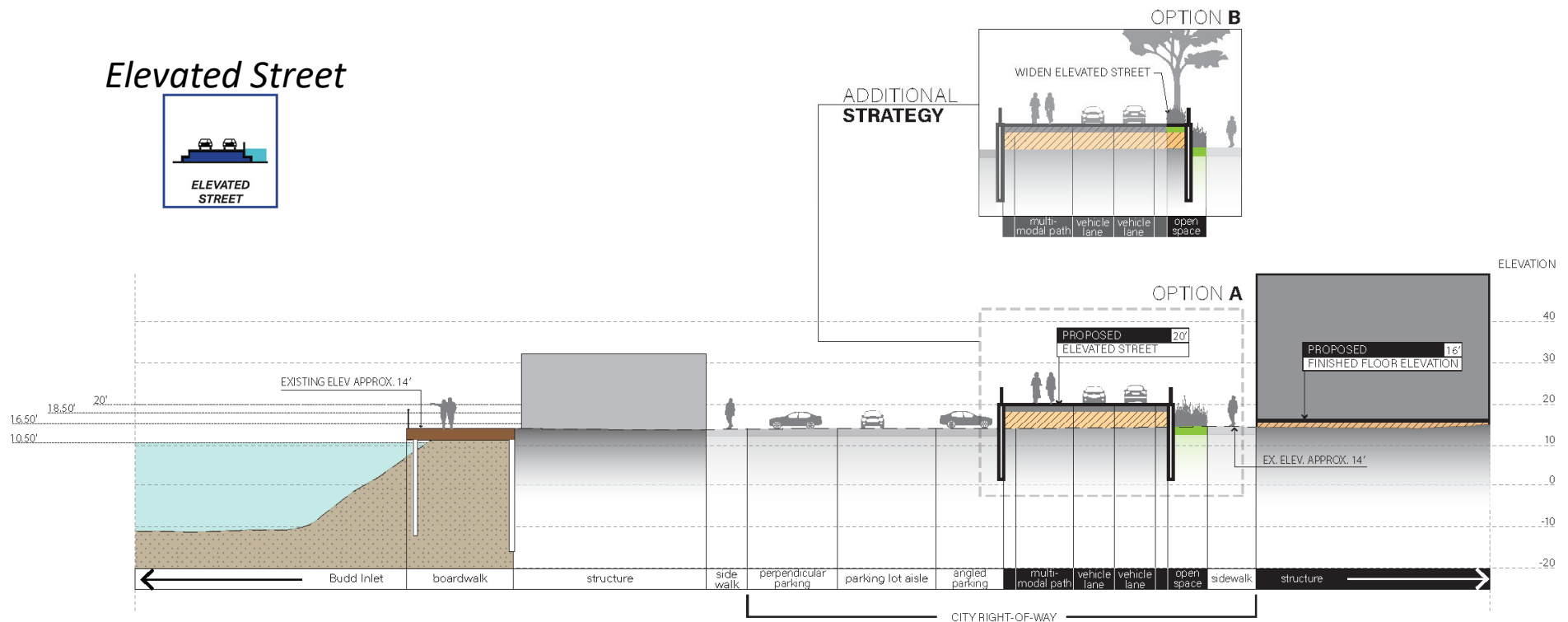


The proposed sea level rise adaption strategies are expected to be compatible with the long term management options for Capitol Lake/Lower Deschutes Watershed.

# Sea Level Rise Response Planning

## Long-Term Strategy for 68" SLR

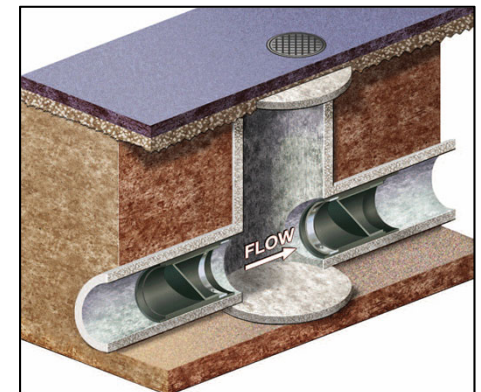
### *Elevated Street*



# Sea Level Rise Response Plan

## Budd Inlet Treatment Plant and Combined Sewer

- Short-term, mid-term, and long-term strategies
- Key strategies:
  - Emergency response and coordination (near-term)
  - Prevent overland flooding of combined sewer (mid-term)







# Sea Level Rise Response Plan

## Potential Total Costs and Phasing

Area / Strategy	Near-Term (0-5 years) Sea Level Rise: up to 6 inches	Mid-Term (5-30 years) Sea Level Rise: up to 24 inches	Long-term (30+ years) Sea Level Rise: up to 68 inches
Capitol Lake / Lower Deschutes Watershed	\$0.2M	\$3M to \$6M	\$3M to \$118M
Percival Landing and Isthmus	-	\$11M to \$13.5M	\$85M to \$105M
Budd Inlet Treatment Plant	-	\$1M to \$6M	\$12.5 to \$15M
Port of Olympia Peninsula	\$20K	\$0.5M to \$1M	\$8M to \$9.5M
Stormwater System	\$1M	-	\$82.5M to \$100.5M
<b>Total</b>	<b>\$1.25M</b>	<b>\$16M to \$26M</b>	<b>\$190M to \$350M</b>

# Sea Level Rise Response Plan

## Governance Strategies

- **Collaboration** – collaboration, coordination, and governance structure among Project Partners and others
- **Policy** – update policies, codes, guidelines, and processes
- **Finance** – identify and establish funding sources for implementation
- **Education and Outreach** – continue activities with community and stakeholders

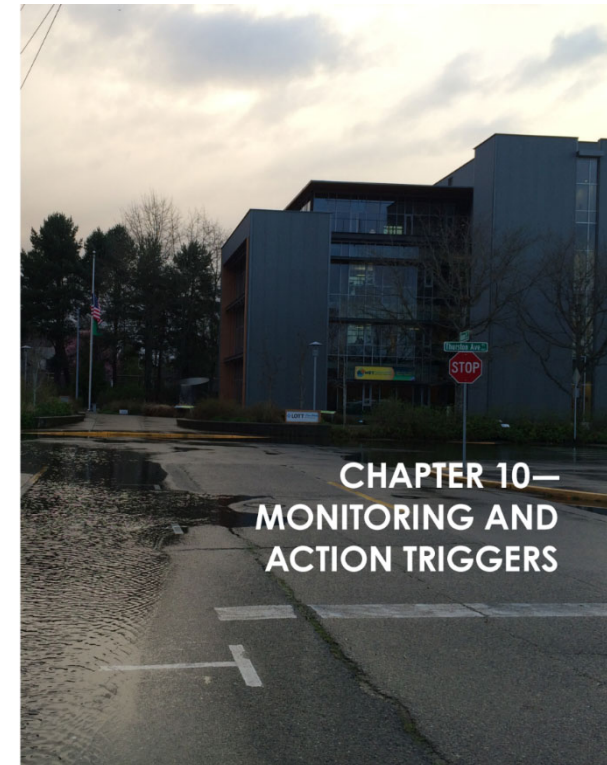
“The Project Partners understand the critical importance of establishing the governmental and financial structure to support the timely implementation of this Plan”



# Sea Level Rise Response Plan

## Monitoring and Action Triggers

- Monitoring of local environmental conditions, sea level rise research, and storm event response
- Monitoring of sea levels required to initiate subsequent phases of planning, design, permitting, financing, and construction

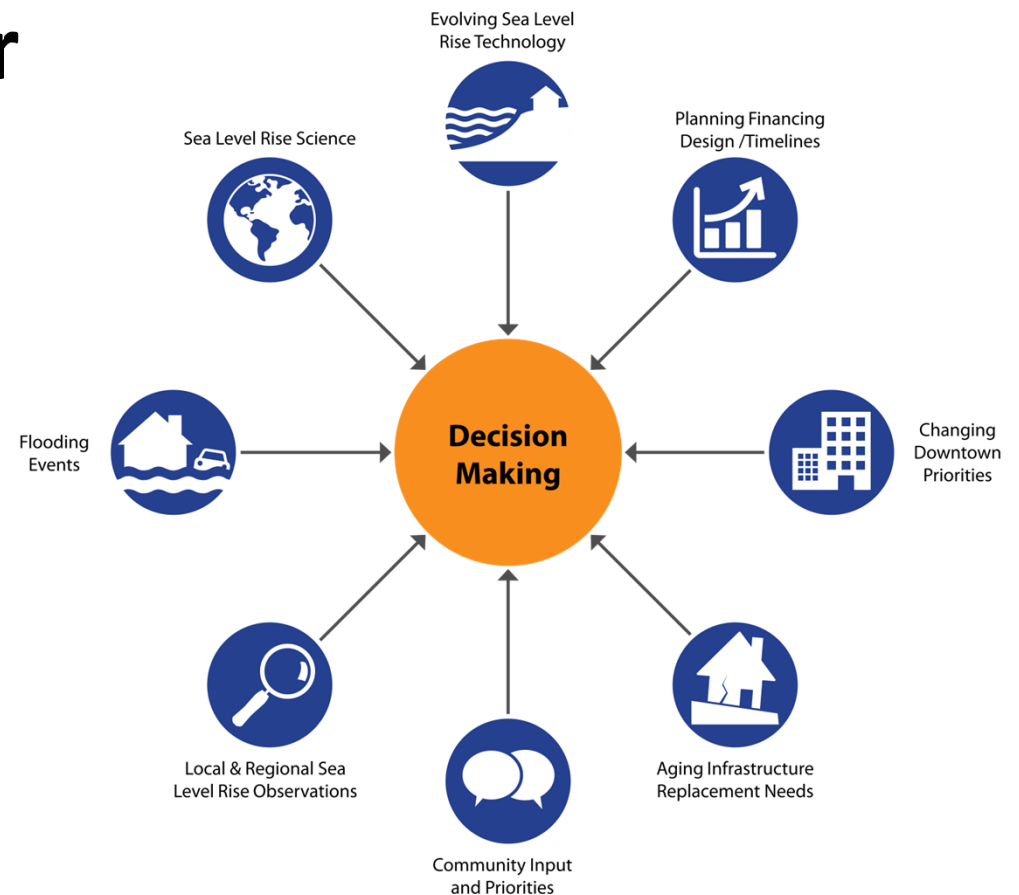




# Sea Level Rise Response Plan

## Decision Making for Sea Level Rise

- Many factors to consider
- Monitoring is a key aspect



# Sea Level Rise Response Plan



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