

# Clean Water Plan

*Making the Right Investments at the Right Time*

Regional Water Quality Committee

March 3, 2021

Presenters:

Tiffany Knapp, King County Wastewater Treatment Division

Steve Tolzman, King County Wastewater Treatment Division

Elizabeth Lowell, HDR



**Clean Water Plan**

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**King County**

Department of Natural Resources and Parks  
Wastewater Treatment Division

# Why the Clean Water Plan?



Threats to regional water quality



Capacity needs due to growing population



Aging infrastructure



Current and expected regulations (CSO, nitrogen)



Utility rate affordability



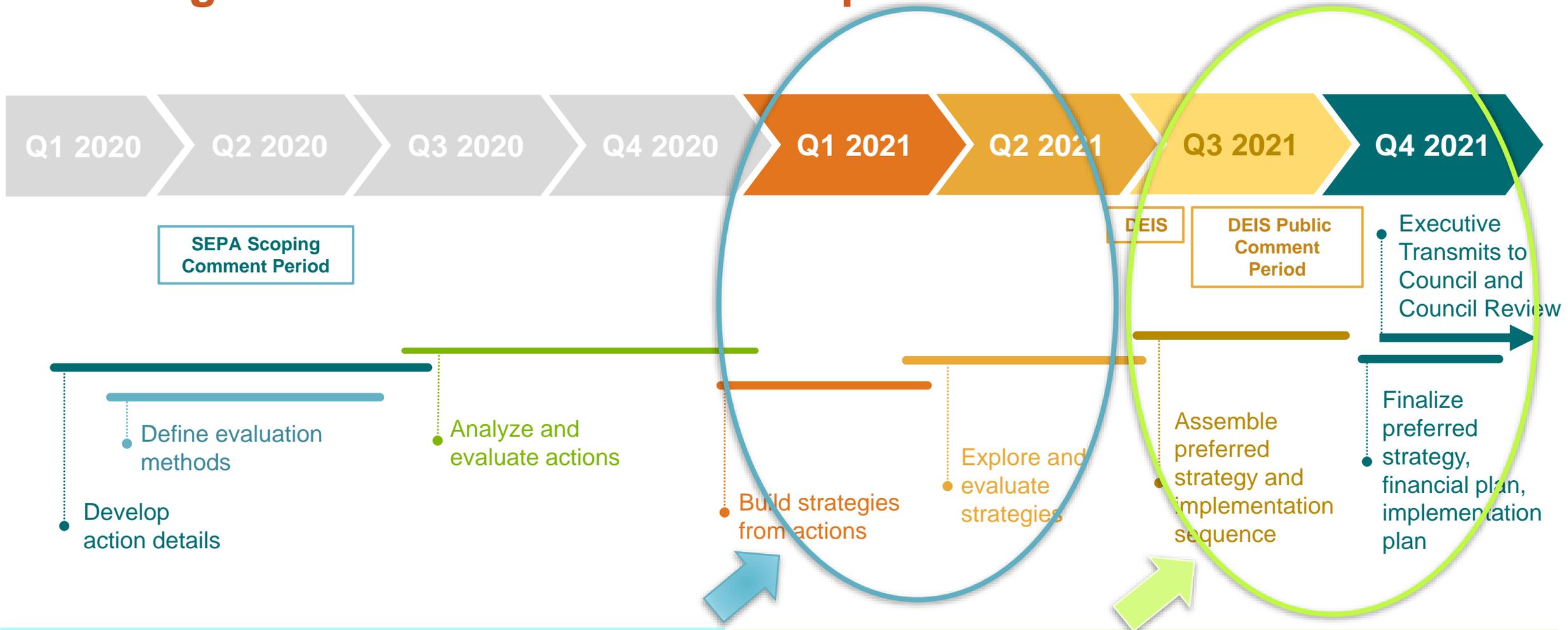
Resiliency (climate change, natural hazards)

**Core Planning Question:** *What is the most appropriate path to ensure we direct the right public investments to the right actions at the right time for the best water quality outcomes?*

# Clean Water Plan Planning Process Overview



# Planning Process – Timeline and Steps Overview



**Near-term focus:** Engagement with region on Actions to build foundational understanding of range of possible water quality investments.

Regional discussion on Strategies that presents alternative approaches to investing in regional wastewater system and water quality. **Schedule likely to adjust**

# **Asset Management, Resiliency, and Redundancy Introduction and Policy Considerations**

# Our region's large and aging sewer treatment system

**3** REGIONAL TREATMENT PLANTS



Built in **1965**,  
**1966**, and **2011**

**400** MILES OF SEWER PIPES



...enough miles for a trip to Portland and back

Average age: **45 yrs**  
Oldest: **100 yrs**

**47** PUMP STATIONS



Average age: **38 yrs**  
Oldest: **86 yrs**

**25** REGULATOR STATIONS



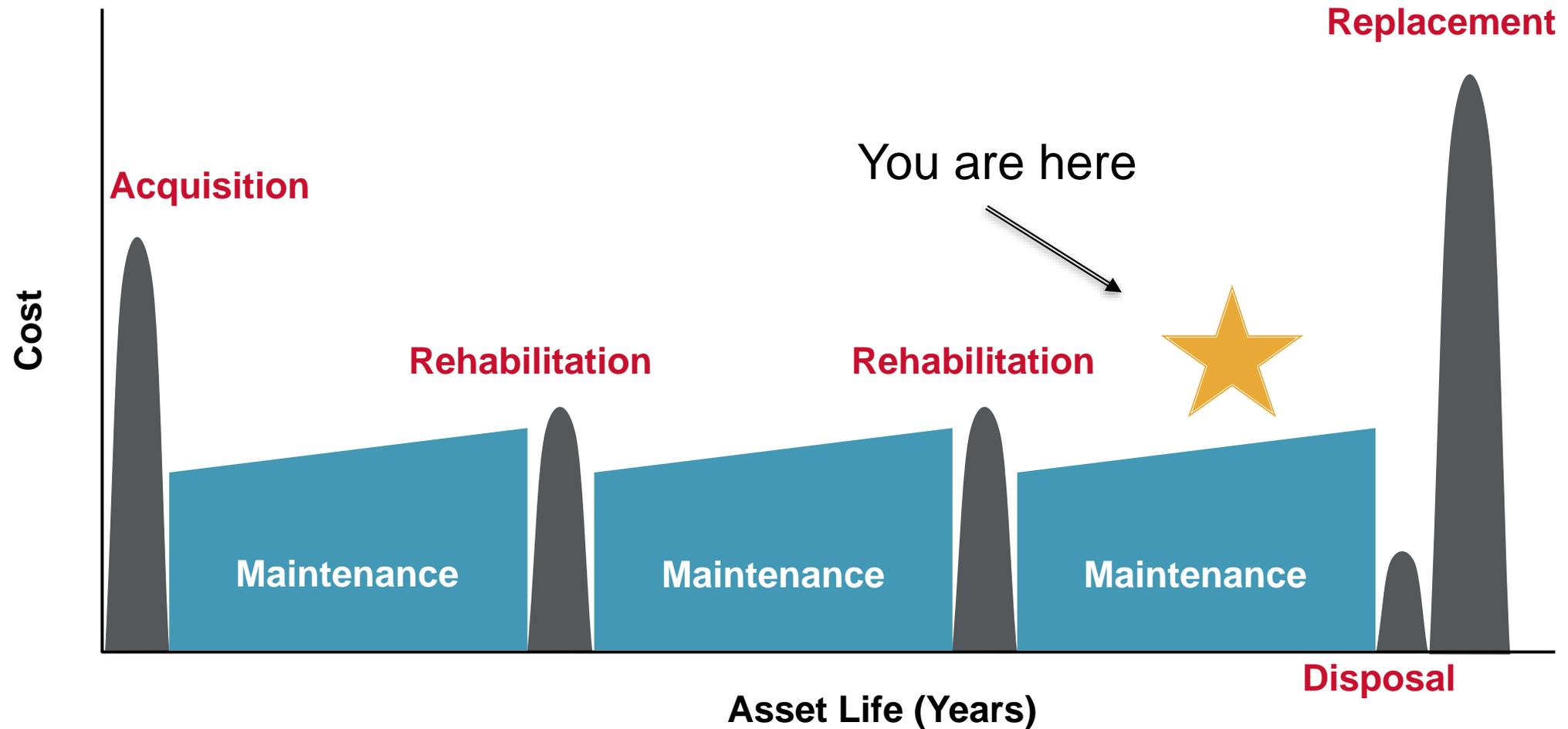
Average age: **40 yrs**  
Oldest: **55 yrs**

**4** WET WEATHER TREATMENT PLANTS



Average age: **35 yrs**  
Oldest: **55 yrs**

# Many of our assets are far along in the management cycle



# Existing Policies

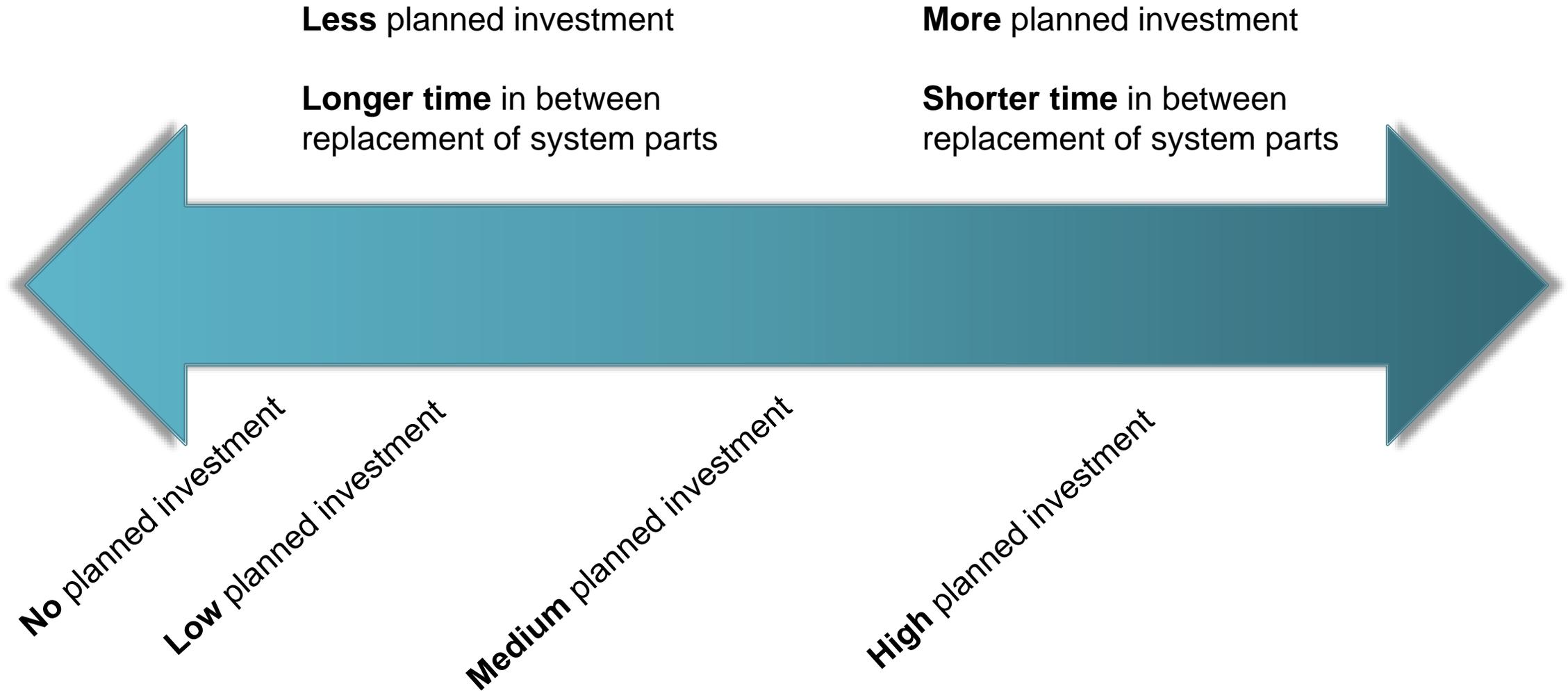
## Metropolitan Functions - King County Code 28.86

- **Wastewater Treatment**
  - Treatment plant policies (TPP).
  - Conveyance policies (CP).
  - I/I policies (I/IP).
  - Combined sewer overflow control policies (CSOCP).
  - Biosolids policies (BP).
  - Water reuse policies (WRP).
  - **Wastewater services policies (WWSP).**
  - Water quality protection policies (WQPP).
  - Wastewater planning policies (WWPP).
  - Environmental mitigation policies (EMP).
  - Public involvement policies (PIP).
  - Financial policies (FP).
  - Reporting policies.

## Asset Management References

- **WWSP-9:** To ensure the region's multibillion-dollar investment in wastewater facilities, an asset management program shall be established.... to reflect the long-term useful life of wastewater facilities as identified by the asset management program
- **WWSP-10:** The asset management program shall establish a wastewater facilities assets management plan, updated annually, establishing replacement of worn, inefficient and/or depreciated capital assets to ensure continued reliability of the wastewater infrastructure.

# Clean Water Plan is evaluating four re-investment scenarios

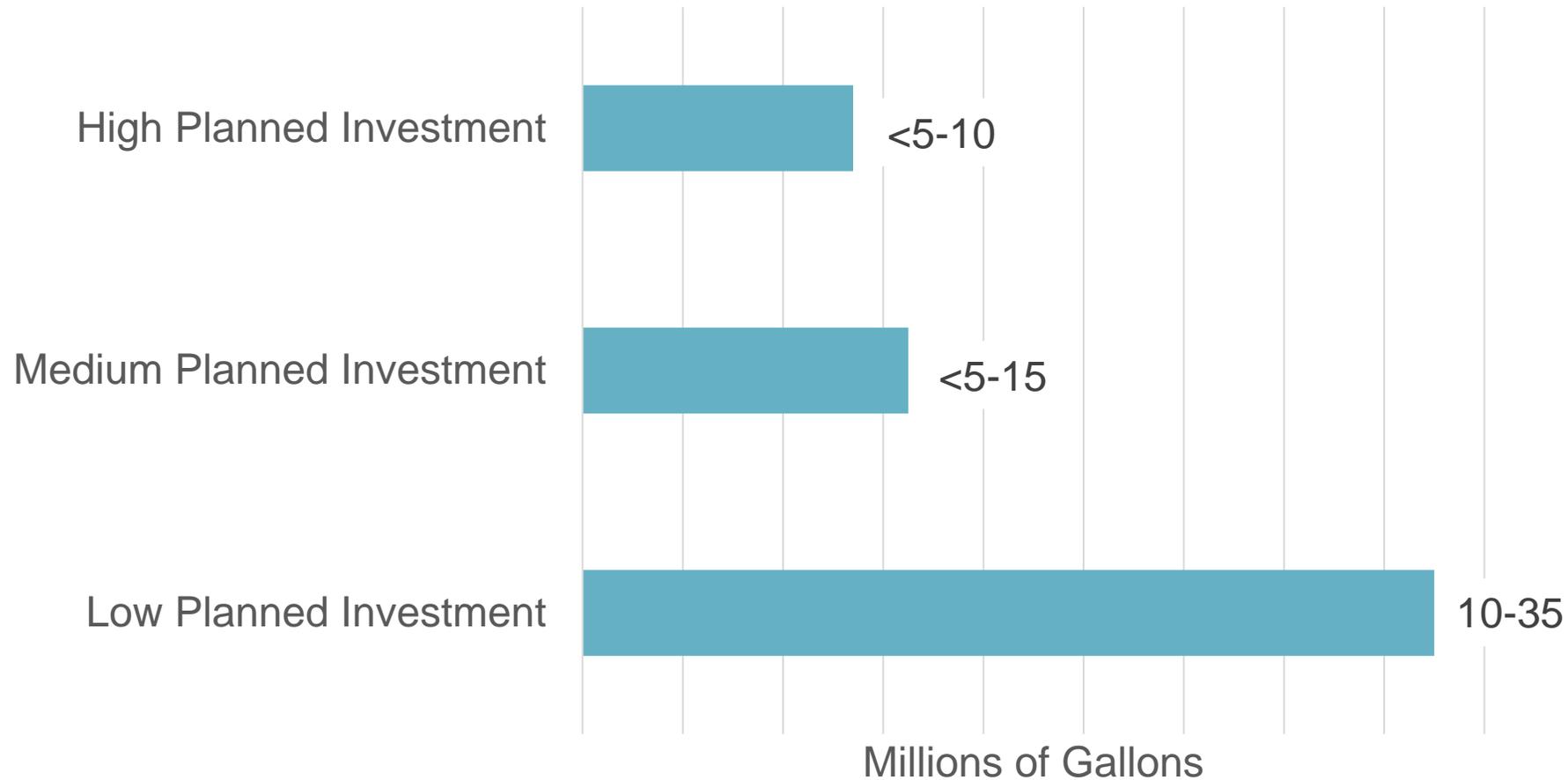


## Assessment of how an action performs under these guidelines and metrics informs policy discussion and decisions

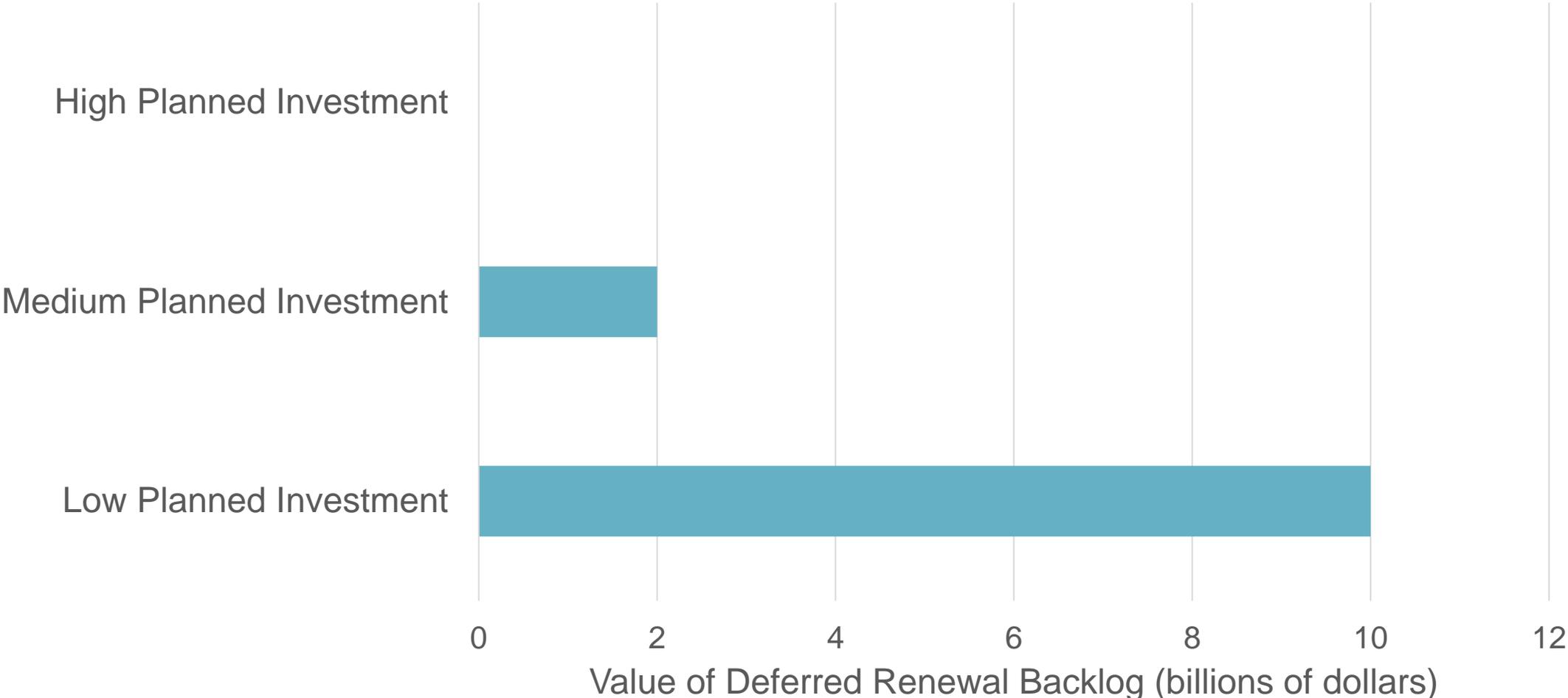
	Planned Investment Rate	Backlog of Need by 2060	Planned vs. Reactive (e.g., 20:80)	Investment Timeline	System Performance	Seismic Performance
No planned infrastructure investment	N/A	\$15B	Maintenance: 20:80 Extra costs due to emergency work: \$15B	No planned spending occurs	Major increases in spills of untreated wastewater	No retrofits to increase resiliency
Low planned infrastructure investment	Up to 1% of total system value	\$10B	Maintenance: 55:45 Extra costs due to emergency work: \$3B	Total value of system re-invested in 140-150 years through planned spending	Increases in spills of untreated wastewater	Retrofits only in combination with other replacements
Medium planned infrastructure investment	Up to 2% of total system value	\$2B	Maintenance: 70:30 Extra costs due to emergency work: \$100M	Total value of system re-invested in 50-60 years through planned spending	Spills of untreated wastewater stay the same	All critical infrastructure retrofitted by 2045
High planned infrastructure investment	Over 2% of total system value	\$0	Maintenance: 80:20 Extra costs due to emergency work: \$20M	Total value of system re-invested in 46-50 years through planned spending	Spills of untreated wastewater go down	All critical infrastructure retrofitted by 2035

# Spill volumes impact water quality – the greater the spill volumes, the more pollution

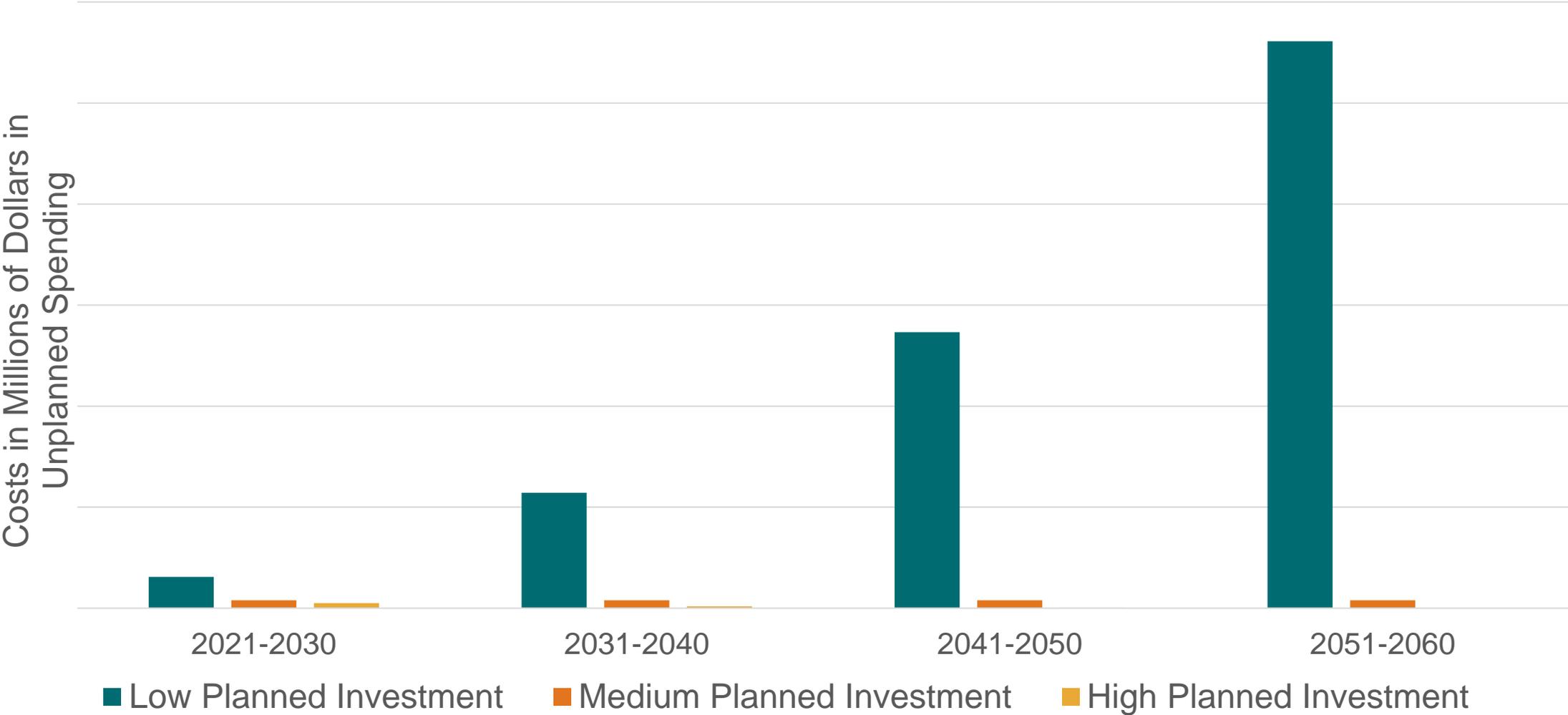
Projected Spill Volumes per Year



# Cost Over Time: With less planned investment, backlog of deferred renewal grows over time



# Cost Over Time: With less planned investment, *unplanned* spending goes up over time



# Re-investment helps us manage risk





# We have identified the following equity outcomes for different levels of system re-investment:

- Water quality
- Resilience
- Community

SALTWATER				Duwamish River	Elliott Bay	Puget Sound in King County
Chum Salmon <small>Dog's Salmon, Keta</small>	Pink Salmon <small>Humpie, Humpback Salmon</small>	Coho Salmon <small>Dog's Salmon, Keta</small>	Sockeye Salmon/Kokanee <small>Red Salmon, Silver Trout</small>			
BOTTOM FLATFISH INCLUDE:						
Starry Flounder	Rock Sole	English Sole				
<b>Fish Consumption Advice</b> Healthy to eat, 8-12 meals per month Limit to 1-4 meals per month DO NOT EAT due to high levels of toxic chemicals One Serving (Meal) Size Adult     Child <small>* May be found here</small>						
				Pacific Herring	Blackmouth Salmon <small>Resident Chinook caught during winter</small>	
						<b>DO NOT EAT CRAB MEATS</b>
				Dungeness Crab	Red Rock Crab	
						<b>CALL BEFORE YOU COOK</b> 1-800-562-5632
				Mussels	Clams	
				Chinook Salmon <small>King, Type</small>		
				Shiner Perch		
				Rockfish		
				Spot Prawns		
				Squid		

**Public Health**  
Seattle & King County

Duwamish Program's  
**FUN TO CATCH,  
TOXIC TO EAT**

Public Health-Seattle & King County  
Environmental Health  
Services Division  
401 5th Avenue, Suite 1100  
Seattle, WA 98104

206-263-0906  
duwamish@kingcounty.gov

[www.kingcounty.gov/duwamish-fishing](http://www.kingcounty.gov/duwamish-fishing)

**FUN TO CATCH  
TOXIC TO EAT**

THE ONLY DUWAMISH SEAFOOD SAFE TO EAT IS SALMON  
Loại hải sản an toàn nhất để ăn từ sông Duwamish là cá hồi  
El único pescado del río Duwamish que es seguro para comer es el salmón

# Clean Water Plan Asset Management Policy Considerations

## Anticipated policy discussions:

- Updates to policies to reflect the established asset management program
- Level of investment in redundancy (e.g., back-up power systems) and resiliency (e.g., facility seismic protection)
- Guidance on acceptable level of service and risk of failure and resulting consequences (e.g., sewage overflow), and acceptable balance between planned and emergency spending

**Questions?**

# Upcoming Opportunities to Engage in the Clean Water Plan

# 2021 Activities Include

- **Monthly RWQC Discussion**
- **Elected Officials Workshops (scheduling in progress)**
- **Technical Workshops on Actions (April and May)**
  - **Wastewater Treatment**
  - **Wastewater System Operations and Health**
  - **Wet Weather Management**
- **Technical Document on the Actions (April)**
- **Development, evaluation, and regional discussion of Strategies (policy considerations and program direction alternatives)**
  - **Engagement opportunities through workshops and other methods**
  - **SEPA Review – Draft Environmental Impact Statement**

# Planned 2021 RWQC Discussions

- **April 7 Meeting: Wastewater Treatment Actions**
- **May 5 Meeting: Wet Weather Management Actions**
- **June 2 Meeting: Wastewater Conveyance, Resource Recovery, Legacy Pollution, and Pollution Source Control Actions**
- **July – December: TBD**

# Thank you!

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# Clean Water Plan Process Refresher

# Clean Water Plan Planning Process Overview



# Actions are Building Blocks for Strategies



**A specific program or set of projects that addresses one of the Decision Areas.**

Actions are not standalone solutions but building blocks that will be shaped and combined in different ways to form Strategies.

**Today's Discussion**



**A group of multiple Actions.**

Each strategy reflects a complete water quality investment approach the County could take for water quality and the regional wastewater system.