

Regional Wastewater Services Plan (RWSP) Update: Asset Renewal and Replacement (R&R) Policy Questions & Options

Presented to the Regional Water Quality Committee

May 6, 2026

Policy Analysis Schedule

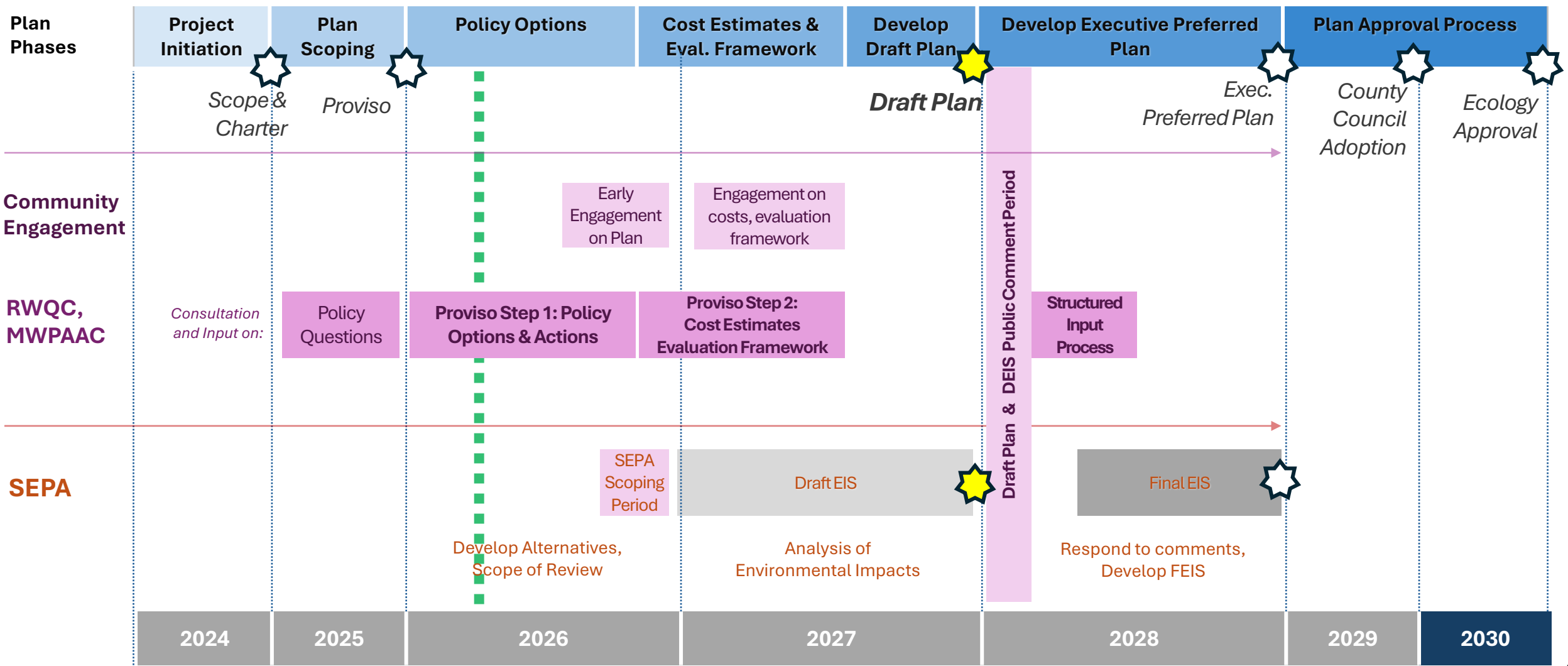
11 “Groups” of Policy Analyses with policy options for RWQC:

March	Group #1: Separated System Conveyance
April	Group #2: Pollution Source Control & Legacy Pollution
May	Group #3: Asset Renewal & Replacement
June	Group #4: Climate Impact Preparedness & Natural Hazard Resiliency
July	Group #5: Affordability Metrics & Rate Relief Approaches
August	Group #6: Combined System Management
September	Group #7: Treatment
October	Group #8: Resource Recovery
Nov / Dec	Group #9: Finance/Rate Structure
Throughout	Group #10: Equity & Social Justice
Throughout	Group #11: Relationship to Contracts

RWSP Update Timeline *(tentative, as of April 2026)*

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Failure of 50-year-old Ravenna Trunk Sewer located in Seattle's Ravenna neighborhood.

Chasm on Ravenna Boulevard grew to 175 feet wide, 200 feet long, and 50 feet deep.

Shortly after midnight, 65,000 cubic yards of sand, bricks, and timbers flow a quarter of a mile through the six-foot tunnel.

Sewer cave-in, 16th Ave NE and Ravenna Blvd, 15 Nov 1957
Courtesy Seattle Municipal Archives (56017)



Why Is Asset R&R Important?

- **Assets get old, become unreliable, and wear out**
- **We need to plan ahead to replace critical assets before they become unreliable**
- **How the Asset R&R program is managed is key to the sustainability of the regional wastewater system**

Purpose

Provide policy options to address Asset Renewal and Replacement (Asset R&R) policy questions:



- 1. How proactive vs. reactive should WTD be when deciding to refurbish or replace aging infrastructure?**
2. What level of redundancy of critical systems should WTD have?
3. What level of risk tolerance should WTD accept?
- 4. What approach should WTD use to fund Asset R&R projects?**

Asset R&R: Bottom Line Up Front

Context:

- 15,000 “critical assets” (highest **consequence** of failure)
 - 7% (1,100) have **high likelihood of failure** in near-term due to condition or age
- 36 miles of “critical” pipe
 - 15% (5.6 miles) identified as **high likelihood of failure** in near-term
- Large and growing backlog (\$2.2 billion)
- Reactive approach, eBay

Core issues:

- Optimizing value of the regional infrastructure to sustain it over the long term
- Push-pull between funding for Regulatory obligations and funding for Asset R&R
 - Result: delay / deprioritization of Asset R&R
 - Band-aids on aging infrastructure
 - What happens when eBay goes away ?

Asset R&R: Bottom Line Up Front

Future Policy Choices – distilled into 4 components:

1. Timing – *how quickly do we modernize ?*

- a. eBay & bandaids
- b. 30 years
- c. 15 years



Risk tolerance / Rate increase Tradeoffs

2. Annual \$ Amount – *determine annual Asset R&R funding level to achieve chosen timing*

3. Protect Asset R&R Annual Funding

- a. Put “fence” around annual Asset R&R funds (financial policy in code or administrative)

4. Prioritize Asset R&R projects in Capital Program

- a. Adopt policy to prioritize Asset R&R projects based on data-informed risk and protects them from the impingement of other capital demands and drivers.

Asset R&R: relationship to other RWSP topics

- 1. Finance & Rate Setting** – Asset R&R is a large but predictable capital cost driver. Coordinating Asset R&R with rates, cash funding strategy, and debt strategy can help avoid rate spikes. Buying down the Asset R&R backlog with near-term cash funding avoids deferring these expenses to future generations.
- 2. Conveyance system** (*separated & combined*) – Asset R&R is foundational to a reliable system of pipes. Also, pump station and wet weather treatment facilities must operate autonomously, on short notice, when called on.
- 3. Equity & Social Justice** (*underserved populations & intergenerational equity*)
Asset R&R allows WTD to address historical inequities by prioritizing renewals in frontline communities, reducing spill risks in vulnerable areas, improving air/noise/odor conditions, and supporting intergenerational equity by avoiding costly deferred maintenance.

Asset R&R: relationship to other RWSP topics

- 4. Natural hazard resiliency** – Asset R&R actions continually improve seismic resilience, flood protection, power reliability, and equipment reliability, resulting in higher likelihood of uninterrupted service in an emergency.
- 5. Climate adaptation** – Asset R&R provides regular system modernization through climate-informed design standards. This modernization continually improves the system’s capability to handle intense storms, heat, and sea-level rise, adapting the system as time progresses.
- 6. Treatment planning** – Asset R&R underpins day-to-day treatment reliability; it converts planning forecasts into routine, sequenced capital work that avoids emergency treatment process workarounds.

Problem Statement – Asset R&R

- WTD has more than 15,000 critical assets which, if they fail, will result in serious consequences for system operation. 7% of these (1,100) have a high likelihood of failure in the near-term.
- Current policies do not address funding levels for asset renewal and replacement – these projects compete for funding within the entire capital portfolio.
- As a result, WTD typically doesn't replace assets until they are beyond their useful lives.
- This is a reactive process that increases risk.

What policies will best sustain and optimize asset renewal and replacement?



Wilburton Tunnel

American Society of Civil Engineers – 2025 Report Card

ASCE publishes its National infrastructure report card every 4 years; most recent in 2025

2025 Infrastructure Report Card

“Our nation’s infrastructure is aging, underperforming, and needing sustained care and action.”

Wastewater infrastructure once again received a “D+” grade

- Same grade as in 2017 and 2021 reports
- But improved from the 2009/2013 report card grades of “D-” and “D”



Hanford Regulator Gate

WTD's Vertical Assets

(Plants, facilities and pump stations)

- **53,026 registered assets; over 15,000 are critical (serious consequences if they fail); 1,100 identified as highly likely to fail**
- **Average age by facility:**
 - South Plant: 21 years
 - West Point: 17 years
 - East Offsite: 16 years
 - West Offsite: 16 years
 - Brightwater: 13 years
- **Average expected useful life of all vertical assets is 24 years**

Secondary sedimentation tank
#5 RAS discharge piping

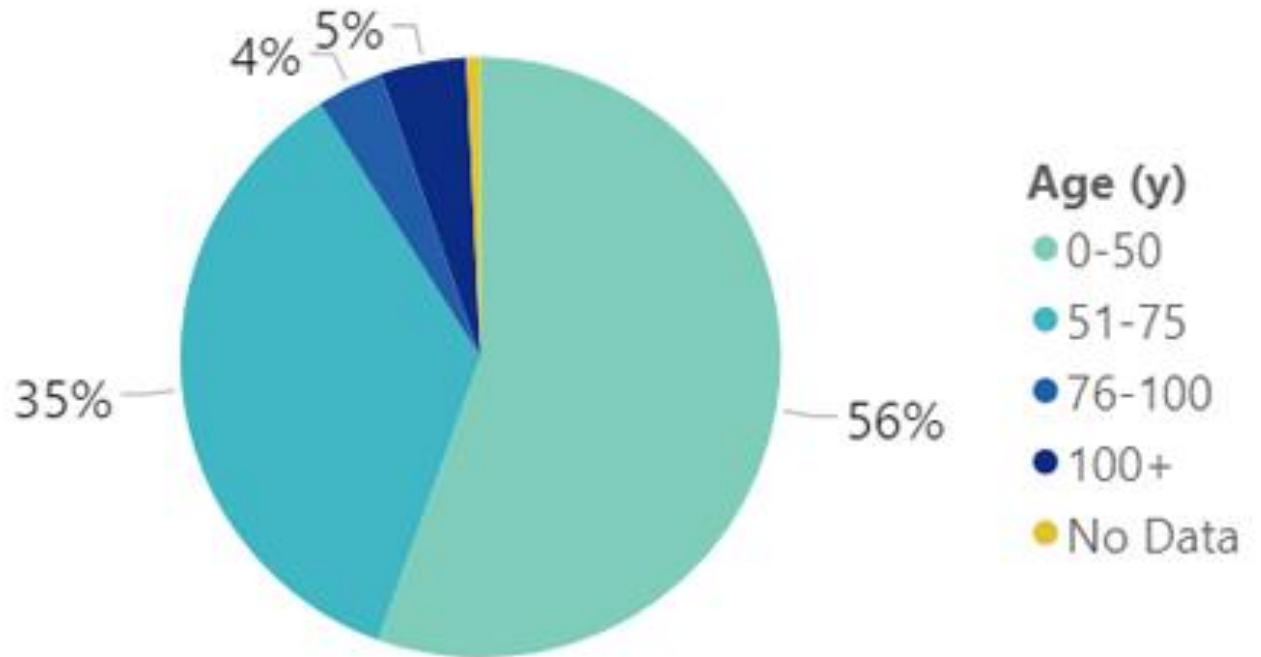


Horizontal Assets

(Pressure and Gravity Pipes, Maintenance Structures)

Conveyance Pipe by Age Range

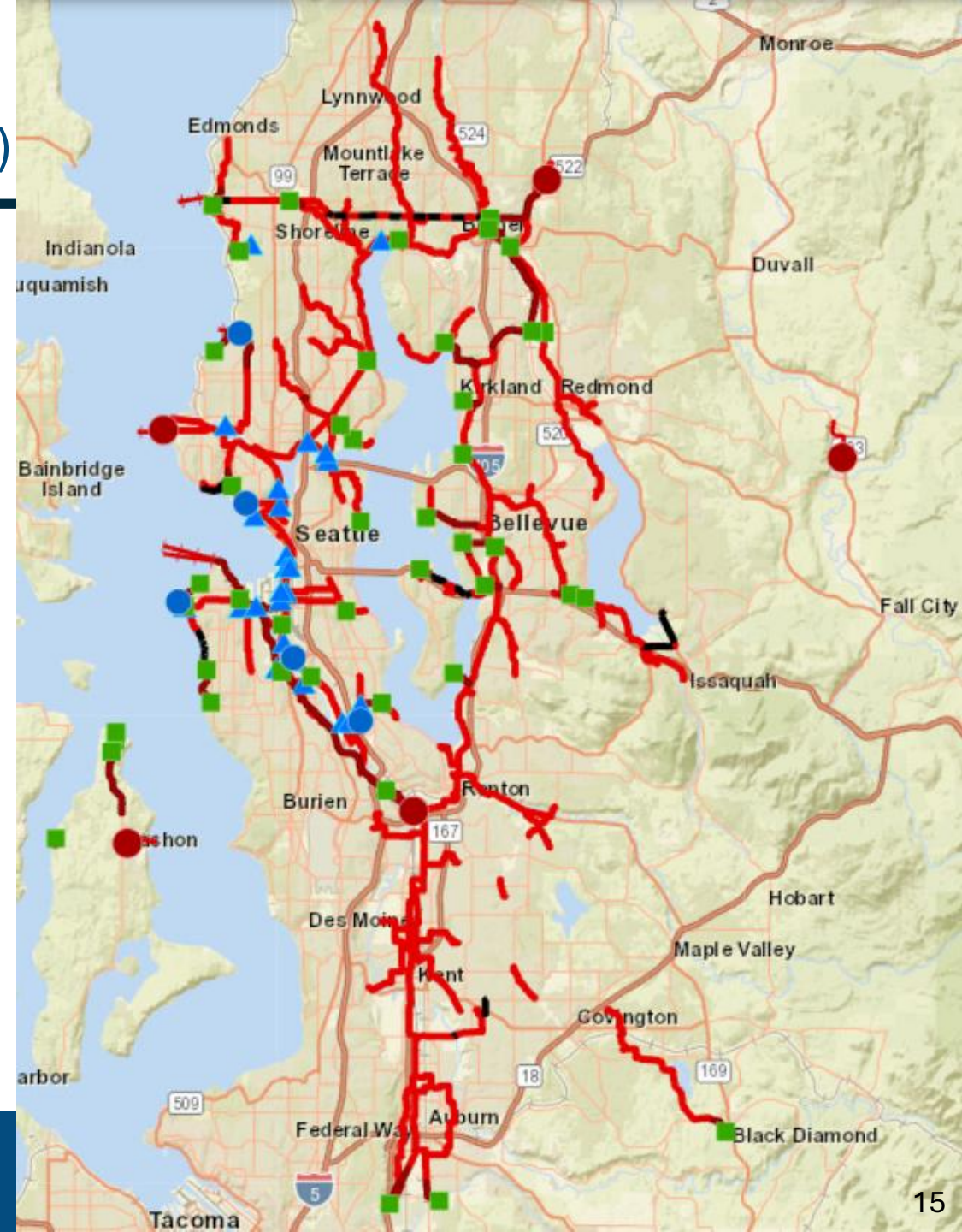
Age (y)	Percentage	Length (mi)
0-50	56%	220
51-75	35%	141
76-100	4%	14
100+	5%	18
No Data	1%	3



Horizontal Assets

(Pressure and Gravity Pipes, Maintenance Structures)

- **383 miles of conveyance pipe**
 - Of these, 45 miles are rated as “critical”
 - About 10% (4.4 miles) of these critical pipes have been identified as highly likely to fail
- **System average age: 50 years**
- **Expected lifespan of pipe segments varies from 40 to 80 years**
 - System-wide estimated average remaining useful life is 20 years



Does WTD Have a Backlog of Asset R&R Projects?

Yes

- **Backlog:** known, unfunded and undelivered ***critical*** facilities that are past their useful lives and which may fail at any time (high-risk assets).
- As of November 2025, there were 75 large Asset R&R projects awaiting funding, with an estimate at completion \$2.2 billion (2026 dollars).
- This underestimates the backlog. Many critical assets past the end of their useful lives still not yet included in requested projects.



Matthews Park Pump #1

Current Policies in Code

- **WWSP-9:** To ensure the region's multibillion-dollar investment in wastewater facilities, an asset management program shall be established that provides for appropriate ongoing maintenance and repair of equipment and facilities. The wastewater maintenance budget, staffing levels and priorities shall be developed 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.

How much should WTD invest annually in Asset R&R?

- **This important question needs additional analysis and will be addressed in the Step 2 work of the RWSP process.**
- **Over the past 10 years, WTD has been investing about \$90 million/year into Asset R&R (ramped up to \$164 million in 2025).**
- **There are indicators this is not enough.**

Forecasted Asset R&R Expenditures

From the 2027 Sewer Rate Forecast:

Asset R&R is **28%** of WTD's first decade rate forecast ('26-'36)

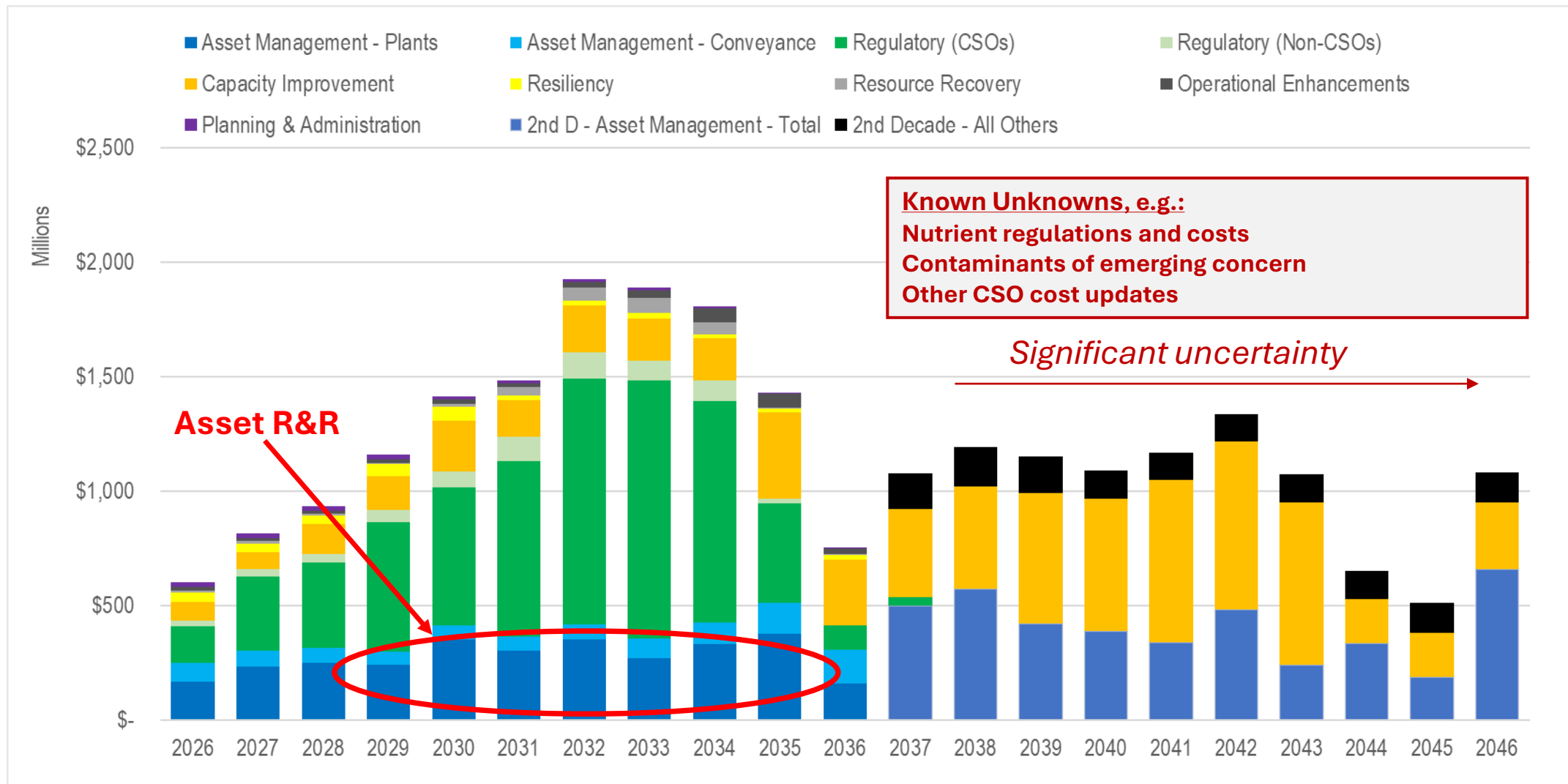
- As of November 2025, **57** large Asset R&R projects in design/construction
- Estimate at completion **\$2.8 billion**

Long-term 20 year ('26-'46) forecast: \$8.1 billion (much uncertainty)



West Point Treatment Plant Digesters

20-Year Capital Forecast



Asset R&R Policy Options – Proactive vs. Reactive

How proactive vs. reactive should WTD be when deciding to refurbish or replace aging infrastructure?

Policy Options:

- a. **Delay asset renewal and replacement beyond the assets' useful lives until risk is deemed unacceptable.**
- b. **Gradually shift (over next 30 years) from reactive to proactive approach for critical Asset R&R.**
- c. **Quickly transition (over next 10-15 years) to proactive approach for Asset R&R so all critical assets are refurbished or replaced prior to failure.**

Asset R&R Policy Options – Funding – Phase 1

What approach should WTD use to fund Asset R&R projects?

Phase 1: Adopt a cash-funding approach in the sewer rate model that more closely aligns with *true* Asset R&R spending needs.

Policy Options:

- a. Ensure **minimum required** funding for Asset R&R critical assets through **status quo** approach.
- b. Ensure **adequate funding** for asset R&R through transparent and efficient means, with potential **future higher spending** levels.
- c. Ensure adequate funding for asset R&R through transparent and efficient means with potentially **significantly higher future spending** levels.

Asset R&R Policy Options – Funding – Phase 2

What approach should WTD use to fund Asset R&R projects?

Phase 2: Adopt a financial policy that preserves cash funding for Asset R&R vs other portfolio categories.

Policy Options:

- a. Prioritize **flexibility** and **rate management**.
- b. Prioritize **intergenerational equity** while allowing for **some moderate flexibility** and opportunity to manage rates.
- c. Prioritize **intergenerational equity**.

Asset R&R Policy Options – Funding – Phase 3

What approach should WTD use to fund Asset R&R projects?

Phase 3: Adopt a capital portfolio policy that prioritizes Asset R&R projects based on risk and protects them from the impingement of other portfolio categories and drivers.

Asset R&R: Bottom Line Recap

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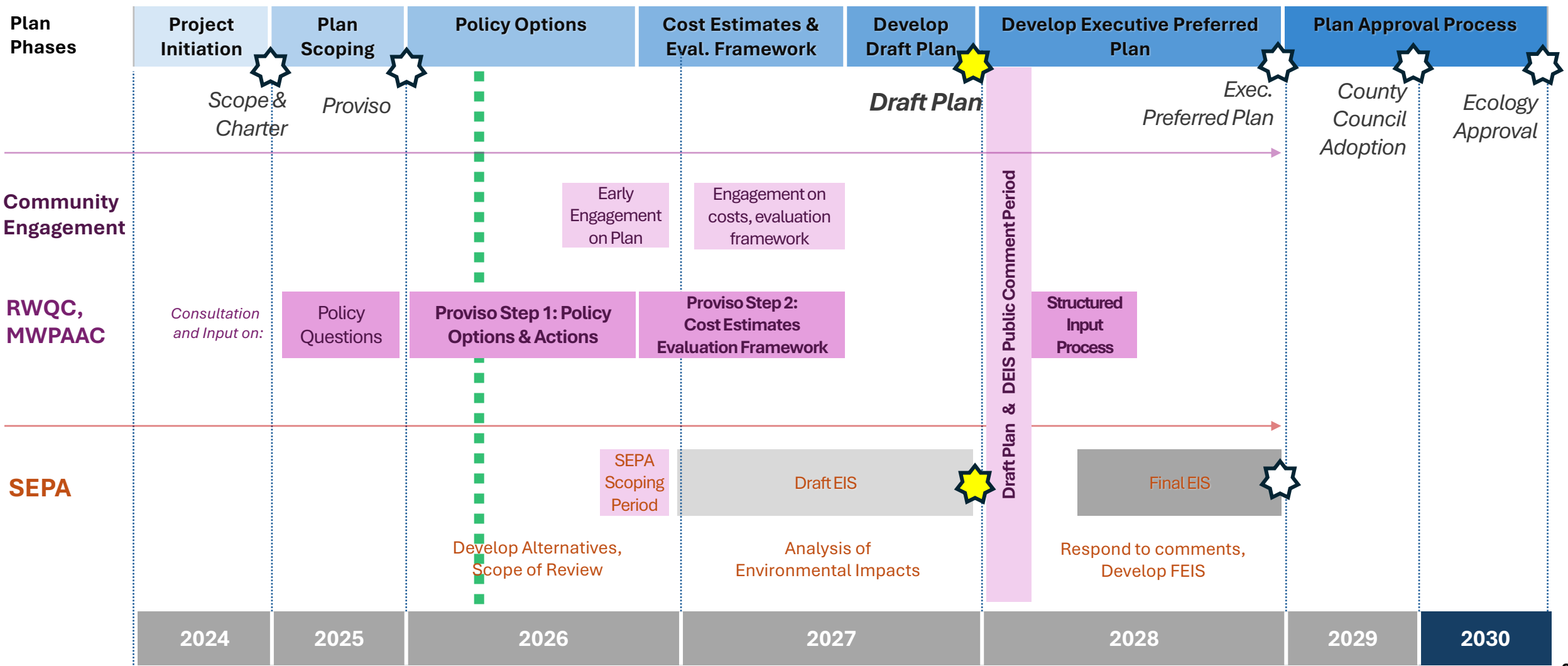
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Questions:

1. Is this the right level of detail - Too much? Too little?
2. Questions on contextual / baseline information?
3. Questions on range of policy options?
4. Are there additional or modified policy options we should consider?

