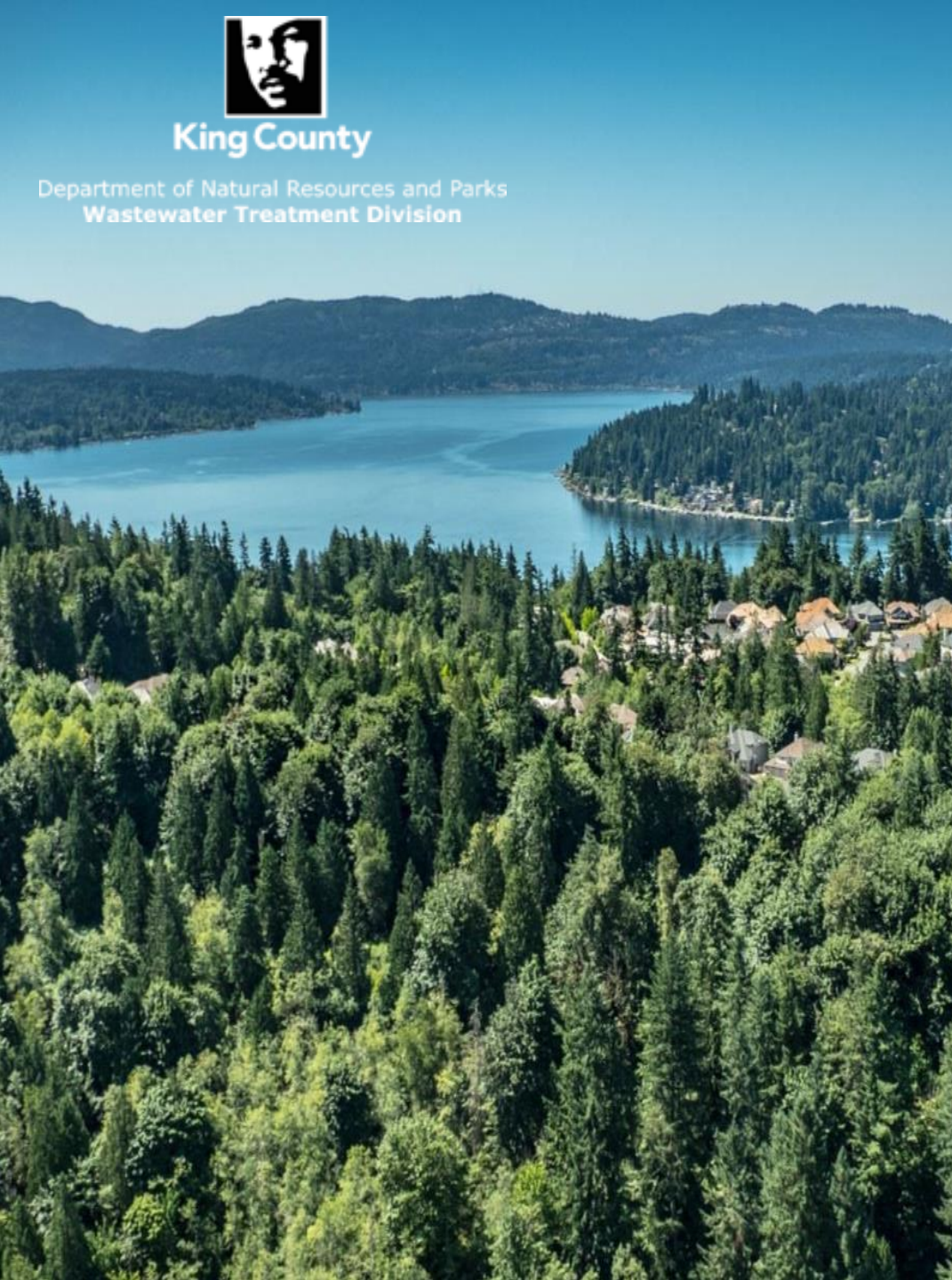




**King County**

Department of Natural Resources and Parks  
Wastewater Treatment Division



# **Wastewater Treatment Division (WTD) Long Term Capital Improvement Investments**

King County Wastewater Treatment Division (WTD)  
Regional Water Quality Committee

April 05, 2023

# Big Picture

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- Growth in the WTD capital program means rates are forecast to continue to increase, which worsens affordability especially for the most vulnerable.
- Long-term capital program and rate forecasts will continue to be affected by:
  - Capital projects and upgrades from known and anticipated regulatory requirements
  - Asset management projects necessary to maintain the systems and prevent overflows
  - Capacity projects need for growth and required by contracts
- Additional funding sources, potentially from the state and federal government, are crucial to improve long-term sewer rate affordability.
- WTD will continue to provide transparent information and analyses to inform decision-maker discussions on capital program and sewer rate drivers.



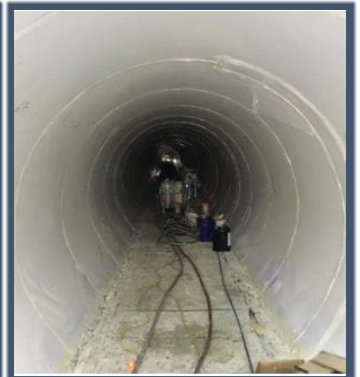
Regulatory



Asset Management Plants



Capacity Improvement



Asset Management  
Conveyance



Resiliency



Resource  
Recovery

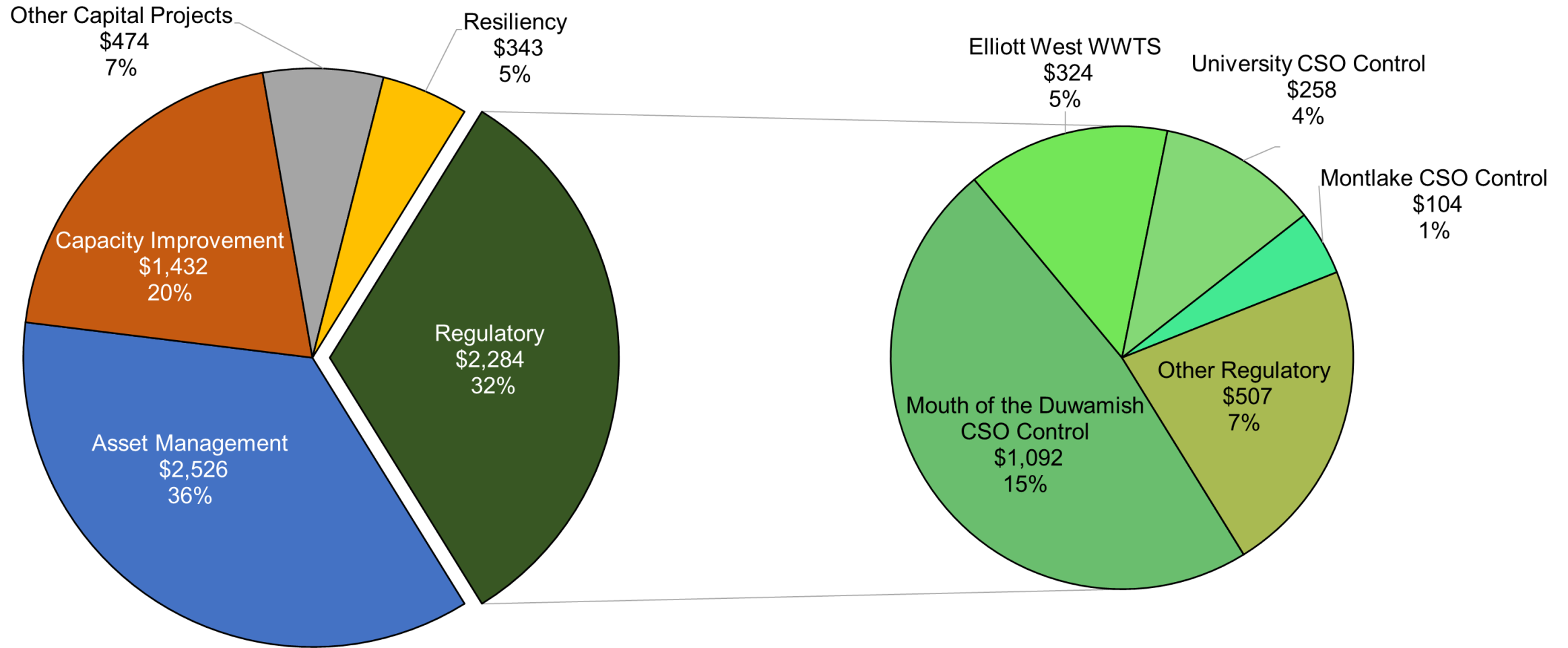


Operational  
Enhancements

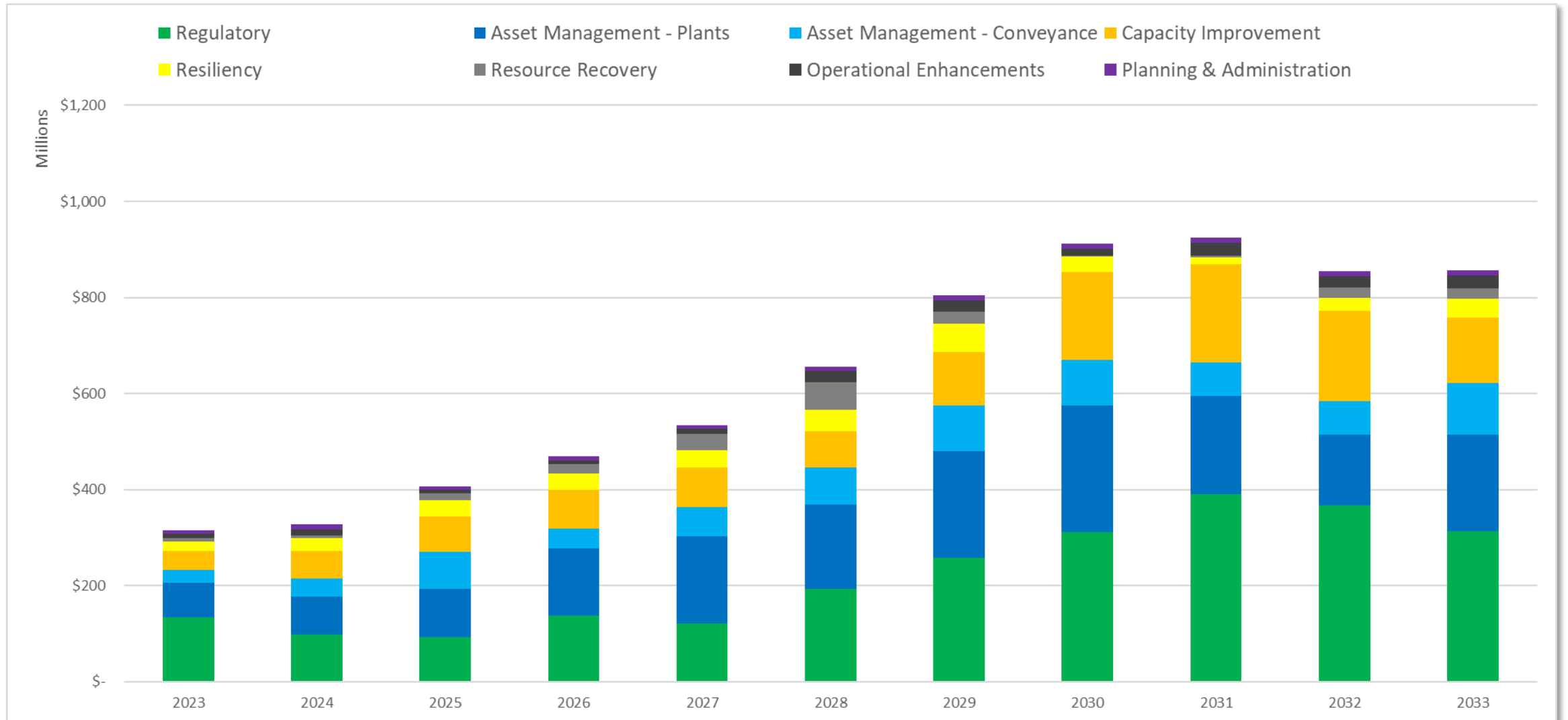
Planning & Admin

## WTD Capital Categories

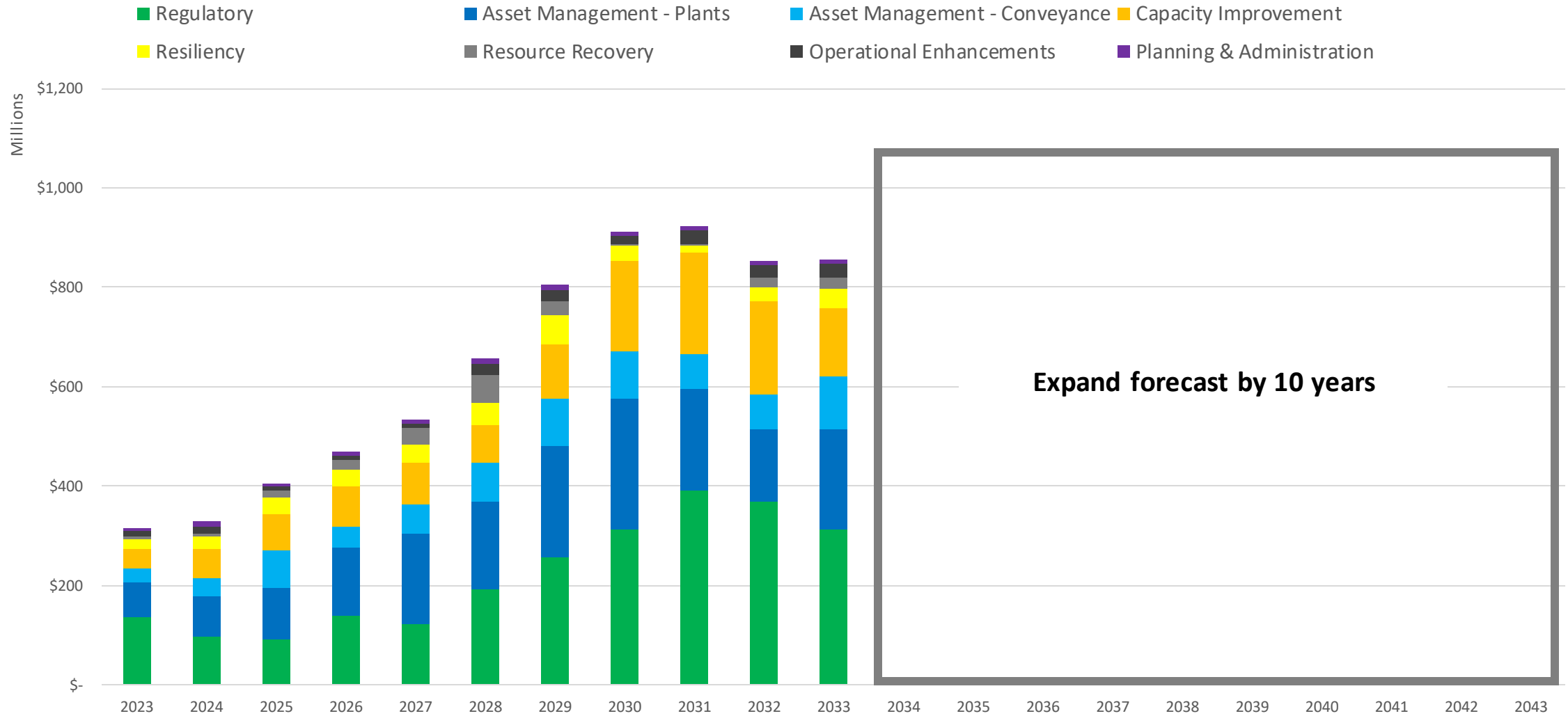
# 2023-2033 Capital Improvement Program Expenditure Forecast (\$7,059 M)



# Projected Capital Spending



# Projected Capital Spending



# Regulatory Requirements Outlook

## Included in 2024-2033 Projection

(10-Year Total Before Accomplishment Rate)

- Consent Decree CSO costs through 2033 (\$2.5B)
- Elliott West WWTS Modifications (\$420M)
- Initial Nutrient Removal Optimization Costs (\$50M)
- Lower Duwamish Cleanup and Sediment Management Planning (\$60M)
- West Point Power Quality and Reliability Completion (\$40M)

## Not Included in 2024-2033 Projection

- Consent Decree CSO costs through 2034 – 2040 (\$1.8B+ to complete)
- Draft NPDES Permit Impacts to Elliott West (\$50M+) and Alki (TBD) Facilities
- Potential Future Nutrient Permit Impacts (TBD)
- Potential Sediment Cleanup CD Impacts (TBD)
- PFAS (TBD)

# Regulatory Project Example – West Duwamish Wet Weather Storage Facility

- Prevent overflows into the Duwamish River during large storms before conveyance to West Point Treatment Plant
- 1.25-million-gallon underground storage facility near SW Michigan St and 2nd Avenue SW in Seattle
- Required by Consent Decree
- Project recently reached 60% design milestone
- Estimate at completion \$110M





# Capacity Improvement (System Expansion) Outlook

## Included in 2024-2033 Projection

(10-Year Total Before Accomplishment Rate)

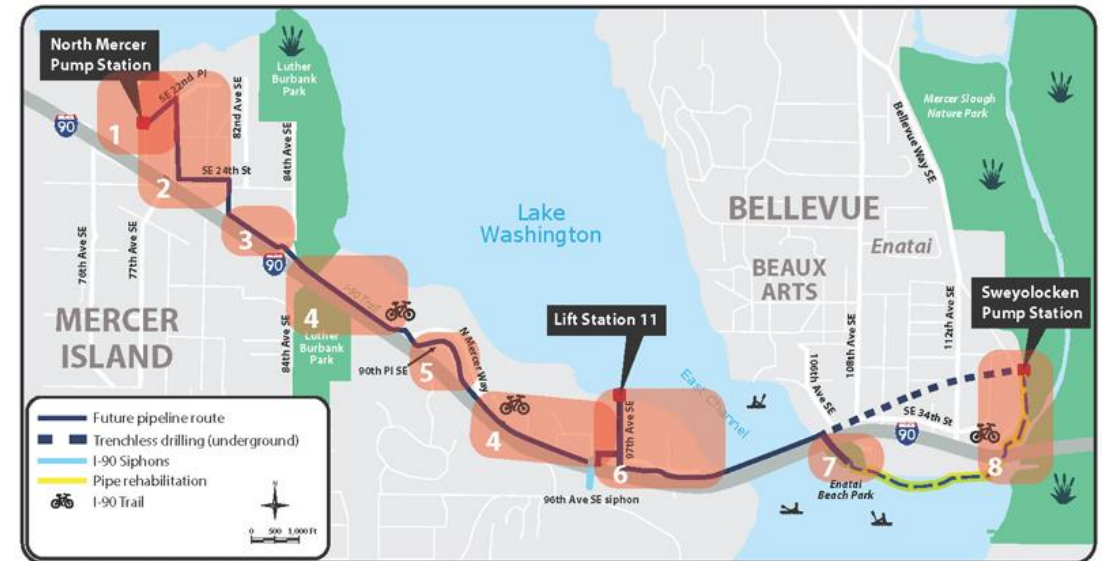
- Near Term Treatment Plant Capacity Projects (\$570M)
- Near Term Higher Risk CSI Projects (\$870M)
  - Driven by population growth and/or experiencing recent overflows
  - 2017 CSI Update: 2010 Level of Service (LOS) < 5 or 2030 LOS < 2

## Not Included in 2024-2033 Projection

- Near Term Lower Risk CSI I/I (\$420M+ Estimate at Completion)
  - Driven by Inflow and Infiltration, but no recent overflows
  - 2010 LOS < 5 or 2030 LOS < 2
- Other Conveyance Areas Nearing Capacity (\$TBD)
  - 2010 LOS 5 < 10 or 2030 LOS 2 < 5
  - In 2016 Plan \$320M total, highly uncertain estimates
- Longer Term Treatment Plant Capacity Needs (\$TBD)

# Capacity Project Example - North Mercer Enatai Upgrade

- Increase capacity of the North Mercer Island and Enatai Interceptors, which serve the areas of North Mercer Island, southwest portion of Bellevue, and the Town of Beaux Arts Village
- Over 17,000 feet of new pipe, rehabilitation of existing pipe, and upgrade of the pump station
- Project improves capacity and replaces poor condition assets
- Construction 2022 though 2025
- Estimate at completion \$180M



# Asset Management (Renewal and Replacement) Outlook

## Included in 2024-2033 Projection

(10-Year Total Before Accomplishment Rate)

- Continuing and Ongoing Investment in Asset Replacements (\$560 M)
- Tier 1: Equipment or pipeline currently in poor condition, unserviceable, or with unavailability of spare parts (\$1.9 B)
- Tier 2: Equipment or pipeline showing wear, age, or corrosion indicating future failure. Equipment is functional but expected to perform poorly or fail soon (\$532 M)

## Beyond 10-Year Outlook

- Maintenance Management System asset inventory and forecasted engineered end-of-life for assets by facility and conveyance line
- Continued addressing of asset replacement backlog
- Large re-investments for facilities like Brightwater, West Point & South Plant secondary expansions
- Large amount of uncertainty for
  - Differences in asset condition vs. expected engineered life
  - Project scoping: Longer term asset data is not yet formulated into capital project scope with project-level cost estimates

# Asset Management Project Examples– South Plant DAFT Tank Rehabilitation

- Replacement and rehabilitation of metal components and equipment in the Dissolved Air Flotation Thickener (DAFT) tanks at the South Treatment Plant
- Despite periodic re-coating, significant corrosion throughout, failure disrupts solids treatment
- Estimate at Completion: \$50M



# Asset Management Project Examples – Lake Hills Interceptor Rehabilitation



- Rehabilitation of 7,200 linear feet of pipeline in Bellevue
- Significant concrete corrosion throughout
- Rehabilitation with “pipe within a pipe” - less ground disturbance than replacement
- Construction this summer
- Estimate at Completion: \$27M

# Other Capital Categories

# Variables over the Long-Term

## Variables Affecting the CIP Forecast

- Individual project cost and timing estimates
  - Assumptions for regulation and population growth
- Accomplishment Rate
- Inflation/Escalation Rate

## Variables Dependent on the CIP Forecast

- Annual cash-funding target
  - Annual debt balance
  - Annual debt service
- Operations and maintenance

# Summary

- Near and long-term capital program and sewer rates will continue to be driven by regulatory, capacity and asset management needs.
- Actual project costs will continue to be defined/refined, but continued high levels of investment is likely.
- WTD will continue to:
  - Be transparent, communicative and responsive
  - Identify and implement cost savings
  - Seek alternative sources of funding



# Questions

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