Overview

- History of Capital Investments
- Project Prioritization Process
- Next Steps
History of Capital Investments
History of Significant System Upgrades

1960s - Metro establishment-construction of treatment plants, pump stations, 100+ miles of interceptor sewers

1980s - South plant expansion and new effluent discharge to Puget Sound

1990s - West Point secondary treatment

2000s - South plant expansion, multiple CSO facilities

2010s - Brightwater, multiple CSO facilities
Historical Capital Investments

Historical Capital Expenditures and 6-Year Forecast (Inflation-Adjusted)
Capital Fund Financing History

• In 2017:
  • Implementation of 40 percent cash funding practice to reduce the growth of outstanding debt

• Prior to 2017:
  • King County policy: the sewer rate shall be set so that net revenues are sufficient to yield at least 1.15 times coverage on all debt service payments made during the year
Expected Life of Common Wastewater Assets

- Transformers and Switchgear: 40 years
- Motors and Motor Control Centers: 40 years
- Power Distribution Panels: 40 years
- Large Pumps: 35 years
- Emergency Generators: 30 years
- Flowmeters: 25 years
- Variable Frequency Drives: 15 years
Expected Life of Wastewater Conveyance Pipe Materials

- Plastic (PVC, HDPE)*: Min 0, Max 100
- Cast Iron: Min 40, Max 80
- Clay: Min 40, Max 60
- Reinforced Concrete Pipe: Min 40, Max 60
Example: Projected End of Life of Major West Point Secondary Expansion Assets

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- **IPS/EPS Variable Frequency Drives**: In progress, completion 2020
- **Liquids Stream Flowmeters**: Partially in progress
- **IPS/EPS Pumps**, **IPS/EPS Motors**, **Power Distribution Panels**, **Motor Control Centers**, **Transformers and Switchgear**: Not started
Project Prioritization Process
Asset Management Capital Project Requests

- When O&M determines that a capital project is warranted, capital project request process is formally submitted for evaluation.

- Form used is intended to provide information for scoring and to help define project scope.

- For asset management projects, questions on the form focus on condition, criticality, obsolescence, and organizational impact of failure.

Information requested:
- Asset names and numbers
- Basic need for a project
- Potential consequences if problem is not addressed
- Whether operational changes have been pursued to solve problem
- Potential solution and rough order of magnitude cost
- Permit and code implications
- Safety implications
Project Prioritization

- Projects are scored using objective criteria applied using a numerical scale.
- Scores are applied by a ranking team comprised of subject matter experts (SMEs).
- Team members discuss each project request together and seek out any additional information that may be needed to help develop a common understanding of the project request.
- Team member scores are aggregated to determine a calculated consensus score.
- All project requests are scored in this manner and the consensus scores are used to determine priority.
- Prioritized project lists are elevated to management for budget consideration.
Ranking Team Composition

Between all categories, there are around 60 SMEs working on ranking teams. Some of these SMEs work on multiple teams.

- Asset Management Conveyance (10 members)
  - Hydrogen Sulfide Rehabilitation Program Manager (Lead)
  - Engineering Group Corrosion Lead
  - Conveyance Inspection Supervisor and Staff
  - Offsite Conveyance System Managers
  - Asset Management Supervisor and Staff (backups)

- Asset Management Plants (6 members)
  - Asset Management Supervisor (Lead)
  - Treatment Plant Managers
  - Reliability Engineers
Criteria and Scales

• The criteria and scales are written so that they incorporate objective and measurable data in the scoring when possible.

• Not all considerations are measurable, so human judgement is used.

• Relies on a calculated consensus among ranking team members to counter bias.

• Criteria do not fit all projects well, so teams can also elevate projects for management consideration regardless of score, if warranted.

• Please refer to handout for details.
Inventory Analysis - # of Active Projects and Project Requests

Asset Management - Plants

- Priority Inventory

Asset Management - Conveyance

- Priority Inventory

King County
Department of Natural Resources and Parks
Wastewater Treatment Division
Next Steps
2022 Rate Setting Process Milestones

- August 6 - Capital Funding Analysis
- September 3 - Operating Forecast
- October 1 - Rate Strategy and Reserves Management
- November 5 - Projected Year-End Update
- December 3 - TBD
Next Steps

- Schedule for Asset Management Briefings with MWPAAC
- Info on upcoming Asset Management Webpage
Summary

- Over time, significant investments have been made into the conveyance and treatment system. Many assets are reaching end of life.

- WTD uses objective and measurable criteria to prioritize asset management projects.

- WTD will continue to engage with MWPAAC on how to best address asset management in the regional wastewater system.
Questions?

Bruce Kessler  Deputy Division Director  bruce.kessler@kingcounty.gov
Crystal Fleet  Capital Portfolio Planning and Analysis Unit Manager  crystal.fleet@kingcounty.gov
Sharman Herrin  Government Relations Administrator  sharman.herrin@kingcounty.gov