WTD Capital Improvement Program
Submitted as Part of King County 2017-18 Budget

Presented to
Metropolitan Water Pollution Abatement Advisory Committee
General Meeting
October 26, 2016
Today’s Presentation

• Share information about the Six-Year WTD CIP Budget as Submitted as Part of King County Executive 2017-2018 Budget Submittal
• Share Information on Specific Key Capital Projects
Objectives of capital program

• Ensure continued and efficient operation and reliability of existing wastewater assets
• Enhance regional water quality in compliance with regulations
• Provide capacity sufficient to meet long-term needs of people and businesses in service area
• Facilitate creation of resources from wastewater
WTD CIP Budget – Interrelated Processes

Rate Setting determines revenue
- Program-level capital spending
- Cashflow based
- Accomplishment rate
- Project-level budget still developing

Budget process sets appropriation
- Project-level capital needs
- Balances to rate process spending plan
- Full budget
- Appropriation is authority to spend

King County Budget Process

Additional Department and Executive Review

Rate Setting Process
WTD CIP Budget – monitoring planned and actual

• Performance is monitored on an on-going basis
• Each year (Q1) all projects are reviewed, prioritized and reforecast
• Each June and Q3 all projects are discussed, evaluated and updated for progress and outlook
• Project spending is tracked monthly
Background on WTD CIP Budget Request

• There is no change to the bottom-line capital spending between the 2017 rate and the 2017-18 budget

• Drivers for capital program are the same as those identified in the rate process:
  – Ensure continued regulatory compliance
  – Provide base level of asset management for all infrastructure
  – Continue support for key initiatives
### 2017/2018 WTD Six-Year CIP Expenditure Plan

#### 2017/2018 WTD CIP 6 Year Expenditure Plan

<table>
<thead>
<tr>
<th>Project Title</th>
<th>2017/18</th>
<th>2019/20</th>
<th>2021/22</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Treatment Plant Total</td>
<td>33,013,126</td>
<td>18,597,557</td>
<td>2,544,342</td>
<td>54,155,025</td>
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<tr>
<td>West Point Treatment Plant Total</td>
<td>29,428,325</td>
<td>38,565,628</td>
<td>24,817,579</td>
<td>92,811,533</td>
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<tr>
<td>Local Treatment Facilities Total</td>
<td>4,179,074</td>
<td>7,273,440</td>
<td>8,277,198</td>
<td>19,729,711</td>
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<tr>
<td>Conveyance Pipelines and Storage Total</td>
<td>123,020,549</td>
<td>142,537,309</td>
<td>163,256,850</td>
<td>428,814,709</td>
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<tr>
<td>Conveyance Pump Station Total</td>
<td>3,442,203</td>
<td>12,918,630</td>
<td>11,964,236</td>
<td>28,325,069</td>
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<tr>
<td>Combined Sewer Overflow Control Total</td>
<td>126,957,792</td>
<td>228,743,412</td>
<td>262,956,515</td>
<td>618,657,719</td>
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<tr>
<td>Inflow &amp; Infiltration Total</td>
<td>768,582</td>
<td>62,265</td>
<td>-</td>
<td>830,847</td>
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<tr>
<td>Biosolids Total</td>
<td>8,918,063</td>
<td>3,426,405</td>
<td>4,051,395</td>
<td>16,395,863</td>
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<td>Water Reuse Total</td>
<td>4,764,447</td>
<td>3,990,428</td>
<td>3,331,348</td>
<td>12,086,222</td>
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<tr>
<td>Environmental Lab Total</td>
<td>6,514,788</td>
<td>1,776,977</td>
<td>2,190,358</td>
<td>10,482,123</td>
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<tr>
<td>Central Functions Total</td>
<td>21,180,402</td>
<td>29,826,216</td>
<td>23,013,314</td>
<td>74,019,932</td>
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<tr>
<td>Minor Asset Management Total</td>
<td>46,135,521</td>
<td>37,937,735</td>
<td>30,093,558</td>
<td>114,166,814</td>
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<tr>
<td><strong>Total WTD CIP</strong></td>
<td><strong>408,322,873</strong></td>
<td><strong>525,656,002</strong></td>
<td><strong>536,496,693</strong></td>
<td><strong>1,470,475,568</strong></td>
</tr>
</tbody>
</table>
Project Examples by CIP Category

• South Plant
  – South Plant Biogas and Heat System Improvements

• West Point Plant
  – OGADS Replacement project

• Conveyance System Improvements
  – Sunset & Heathfield Pump Stations Replacement and Force Main Upgrade
  – Lake Hills and NW Lake Sammamish Interceptor Upgrade

• CSO Control Program
  – Georgetown Wet Weather Treatment Station
  – Ship Canal Water Quality CSO Control Project with SPU

• Environmental Laboratory
  – Laboratory Fume Hood Replacement

• Central Functions
  – Resiliency and Recovery Program
  – Project Formulation
South Plant Biogas and Heat System Improvements

• Improves biogas utilization and energy recovery at the South Treatment Plant
• Replaces old and obsolete equipment in service since 1987
• Alternatives evaluated generate about $5 million per year in bio methane sales revenue and export more energy than they consume.
• Project baseline (30% design) anticipated for Spring 2017
• Supports targets and goals established by King County’s Climate Action Plan and ordinances
• Estimated total project cost: $24.7 million
Existing Biogas Treatment System

Scrubbing Towers

Custody transfer system

Binax control panel
West Point OGADS Replacement Project

- Project to replace oxygen generation and dissolution system equipment used in secondary treatment process with energy efficient equipment

- Oxygen generation and dissolution systems accounts for 37% of plant energy consumption
  - Of the high purity oxygen generated, 27% is wasted to the atmosphere
  - Oxygen dissolution system motors unable to be turned down

- Energy consumption of new OGADS anticipate reduction of ~50% from old
  - Testing throughout project to ensure energy targets are met

- Selected alternatives are anticipated to reduce WTD energy footprint by 10%

- Estimated total project cost: $52.9 million
Sunset & Heathfield Pumping Stations and Force Main Upgrade Project
Sunset & Heathfield Pumping Stations and Force Main Upgrades

- Increases pumping capacity to 30 mgd
- Project is nearing design completion
- Construction anticipated to begin January 2017
- Estimated total project cost - $69.7 million
Lake Hills/NW Lake Sammamish Sewer Upgrade

- Increase capacity of 4.5 miles of existing gravity sewer.
- Replace pipe based on condition assessment.
- Selected alternative mostly follows existing pipe alignment.
Lake Hills/NW Lake Sammamish Sewer Upgrade

- Establish project baselines in Q1 2017
- Design and permitting - 2017 – 2018
- Construction – 2019-2021
- Estimated total project cost: $92.4 million
Georgetown CSO Control Project
Georgetown CSO Control Project

- 70 mgd wet weather treatment facility
- High-rate clarification and ultra-violet disinfection
- Site Preparation to begin Spring 2017
- Treatment Station construction late-2017
- Estimated total project cost: $260.7 million
Ship Canal Water Quality Project
CSOs to be Controlled by Ship Canal Water Quality Project

[Map showing the tunnel discharge point and CSO locations in Seattle and King County.]
Ship Canal Water Quality Project Benefits

• Construction of a single storage tunnel replaces the need to construct multiple independent storage facilities in the Wallingford/Ballard area

• Storage Tunnel construction will cause fewer construction disruptions across the project area

• WTD’s estimated share of overall project cost: $133.1 million
Master Plan for Resiliency and Recovery

**Scope:** Develop comprehensive strategy to address a major earthquake, identify vulnerabilities and mitigations to limit damage and speed up recovery

- Consultant team selected
- MWPAAC technical review group formed and currently reviewing Draft Scope of Work
- Plan and prioritized improvements complete Dec. 2017
Environmental Laboratory

- Improve and enhance energy efficiency
  - Replace aging fume hoods with energy efficient equipment
    - Estimated total project cost: $5.8 million
    - Construction 2017/2018
Project Formulation

- Improved definition of scope and cost for new project requests
- Projects include both facility upgrades and projects supporting strategic initiatives
- Provide better information when budgeting and appropriating the project
  - Reduce the volatility of expected project costs
  - More stable planning of our multi-year program
King County Budget Information


Questions?

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