2021 Asset Management Plan

August 16, 2021

Asset management is fine tuning District practices, enhancing tools to increase return on investment and enrich sustainability
Presentation Outline

- Asset Management at the District
- 2015-2020 Asset Management Advancements
- Replacement Value and Asset Changes Since 2015
- Water System Overview and Conclusions
- Sewer System Overview and Conclusions
- Next Steps
Asset Management at the District

- Reframed asset management efforts in terms of “sustainability”
- Integrated enterprise system
- Utilizes a credible, singular asset registry
- A budget and financial reporting structure which aligns asset classes with planning and financial reporting
- A live rate model to allow for annual review of financial trends associated with effective asset management, including capital replacement planning
- Managed our revenue requirements to fully fund the future replacement costs within our replacement assumptions as of 2020
- An inherent part of organizational culture
2015-2020 Asset Management Advancements

- The District further defined its commitment to asset management with the adoption of a corporate asset management policy. It was named “Sustainability Policy” to be better understood by a wider audience.

- Updated key asset data points including the useful life schedule, consequence of failure ratings, levels of service, and water and sewer main replacement costs. These data points were updated 5 years following initial development, as scheduled per the 2016 Asset Management Plan.

- Refined the asset registry and inserted asset sections to the plan covering 100% of assets and their subcomponents pertinent to sustained water and sewer service, including pumps and motors at wells, booster stations and lift stations.

- The District implemented Reliability Centered Maintenance (RCM) to optimize operations and maintenance by minimizing reactive time, and set up tools to identify if the appropriate preventive maintenance is being performed at the optimum intervals.

- Shifted funding for critical vertical assets, vehicles and large equipment and water storage tank coating replacements from the operating fund to the R&R fund. (portions of these capital projects related to growth are still funded from GFCs).

- Since 2020, capital rehabilitation and replacement reserve contributions are funded at 100% of the target.
Total Replacement Value

- 2021 Asset Management Plan comprises 100% of the total replacement value.
- District assets with all data as of August 2020:

**2020 Total Replacement Value of District Assets: $1,175,521,000**

- Water Assets, $767,553,000
- Sewer Assets, $384,559,000
- District Headquarters, $13,314,000
- Other, $23,410,000
- Technology Hardware and Software, $4,706,000
- Vehicles & Equipment, $5,390,000
Replacement Value and Asset Changes Since Last Asset Management Plan

Total 2020 system replacement value $1,175,521,000

<table>
<thead>
<tr>
<th>Changes Attributable to:</th>
<th>2015 Replacement Value</th>
<th>Abandoned assets</th>
<th>New/Added Assets or Refined Costs</th>
<th>2015-2020 Total Inflation (18%)</th>
<th>2020 Replacement Value</th>
<th>Total Replacement Value Change</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water</strong></td>
<td>$ 583,806,000</td>
<td>$ (131,000)</td>
<td>$ 93,609,000</td>
<td>$ 104,130,000</td>
<td>$ 781,414,000</td>
<td>$ 197,608,000</td>
</tr>
<tr>
<td><strong>Sewer</strong></td>
<td>$ 291,359,000</td>
<td>$ (111,000)</td>
<td>$ 50,704,000</td>
<td>$ 52,155,000</td>
<td>$ 394,107,000</td>
<td>$ 102,748,000</td>
</tr>
</tbody>
</table>

New assets added from 2015 to 2020

Water & Sewer
- District headquarters decant and fueling facility

Water
- 13 miles of water mains
- 5 PRVs
- Water storage tank coatings

Sewer
- 15 miles of gravity and low-pressure sewer mains
- 2 lift stations

Abandoned Assets
- 1 lift station
- 1 PRV
Water System
Water System Summary

66% of the District’s asset registry

Water Assets by Business Function

<table>
<thead>
<tr>
<th>Business Function</th>
<th>2020 Replacement Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Mains</td>
<td>$ 683,655,000</td>
</tr>
<tr>
<td>Wells</td>
<td>$ 21,350,000</td>
</tr>
<tr>
<td>Booster Pump Stations</td>
<td>$ 4,127,000</td>
</tr>
<tr>
<td>Water Storage Tanks &amp; Coatings</td>
<td>$ 44,862,000</td>
</tr>
<tr>
<td>Other</td>
<td>$ 27,420,000</td>
</tr>
<tr>
<td><strong>Total Water Assets</strong></td>
<td><strong>$ 781,414,000</strong></td>
</tr>
</tbody>
</table>
Condition of the Water System

<table>
<thead>
<tr>
<th>Component</th>
<th>Very Good</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Very Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Mains</td>
<td>6%</td>
<td>44%</td>
<td>52%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Wells</td>
<td>9%</td>
<td>48%</td>
<td>50%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Booster Stations</td>
<td>-</td>
<td>50%</td>
<td>50%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Water Storage Tanks</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18%</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>18%</td>
</tr>
</tbody>
</table>

Percentage breakdown: 6% Very Good, 44% Good, 52% Fair, 50% Poor, 53% Very Poor.
100% Of Annual Replacement Reserve Contribution Targets Met

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Replacement Reserve Target</td>
<td>$6,204,000</td>
<td>$6,625,000</td>
<td>$7,064,000</td>
<td>$7,154,000</td>
</tr>
<tr>
<td>Allocation to Capital Replacement Reserves</td>
<td>$4,616,000</td>
<td>$5,925,500</td>
<td>$6,560,000</td>
<td>$7,154,000</td>
</tr>
<tr>
<td>Reallocation of Debt Service Payments</td>
<td>-</td>
<td>-</td>
<td>$504,000</td>
<td>-</td>
</tr>
<tr>
<td>Total Water Capital Replacement Allocation</td>
<td>$4,616,000</td>
<td>$5,925,500</td>
<td>$7,064,000</td>
<td>$7,154,000</td>
</tr>
<tr>
<td>Annual Allocation % of Target</td>
<td>74%</td>
<td>89%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Long-Term Capital Replacement Funding Strategy

Total Water Projected Replacement Reserve Expenditures and Cashflow at the End of Each Decade

- CP - Future Renewal/Replacement
- Water Capital Replacement Fund Balance Using Asset Management Target

Decades:
- 2021-2030
- 2031-2040
- 2041-2050
- 2051-2060
- 2061-2070
- 2071-2080
- 2081-2090
- 2091-2100
- 2101-2110
- 2111-2120
- 2118-2127
- 2128-2137

Expansions:
- $150,000,000
- $200,000,000
- $250,000,000
- $300,000,000
- $350,000,000
Sewer System
Sewer System Summary

34% of the District’s asset registry

Sewer Assets by Business Function

<table>
<thead>
<tr>
<th>Business Function</th>
<th>2020 Replacement Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewer Mains</td>
<td>$370,445,000</td>
</tr>
<tr>
<td>Lift Stations</td>
<td>$14,114,000</td>
</tr>
<tr>
<td>Other</td>
<td>$9,548,000</td>
</tr>
<tr>
<td><strong>Total Sewer Assets</strong></td>
<td><strong>$394,107,000</strong></td>
</tr>
</tbody>
</table>
Condition of the Sewer System

Condition of the Sewer System

- Very Good: 1.0% in Sewer Mains, 0.9% in Lift Stations, 4.2% in Total
- Good: 4.4% in Sewer Mains, 31.6% in Lift Stations, 39.6% in Total
- Fair: 39.9% in Sewer Mains, 68.4% in Lift Stations, 55.2% in Total
- Poor: 54.7% in Sewer Mains, 68.4% in Lift Stations, 55.2% in Total
- Very Poor: 54.7% in Sewer Mains, 68.4% in Lift Stations, 55.2% in Total
## 100% Of Annual Replacement Reserve Contribution Targets Met

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Replacement Reserve Target</td>
<td>$3,028,000</td>
<td>$3,329,000</td>
<td>$3,683,000</td>
<td>$3,755,000</td>
</tr>
<tr>
<td>Allocation to Capital Replacement Reserves</td>
<td>$2,303,000</td>
<td>$3,010,100</td>
<td>$3,255,000</td>
<td>$3,755,000</td>
</tr>
<tr>
<td>Reallocation of Debt Service Payments</td>
<td>-</td>
<td>-</td>
<td>$428,000</td>
<td>-</td>
</tr>
<tr>
<td>Total Sewer Capital Replacement Allocation</td>
<td>$2,303,000</td>
<td>$3,010,100</td>
<td>$3,683,000</td>
<td>$3,755,000</td>
</tr>
<tr>
<td>Annual Allocation % of Target</td>
<td>76%</td>
<td>90%</td>
<td>100%</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

![Sewer Annual Capital Replacement Reserve Fund Balance](chart.png)

- Water RR Fund Balance: $2,626,219, 4,154,024, 4,269,233, 4,555,700, 5,365,298, 6,839,921, 8,732,197, 11,030,487, 14,040,315, 17,862,670, 21,441,512
Long-Term Capital Replacement Funding Strategy

Total Sewer Projected Replacement Reserve Expenditures and Cashflow at the End of Each Decade

- CP - Future Renewal/Replacement
- Total Sewer Capital Replacement Fund Balance Using Asset Management Target

Capital Replacement Expenditures

- Expenditures: $210,000,000

Capital Replacement Reserve Balance

- Balance: $17,583,484, $30,000,000
Water Asset Management Conclusions

- Majority (89%) of the water assets are in good to very good condition and meet the District’s level of service standards
  - 89% of water mains are in good to very good condition
  - 91% of wells are in good to very good condition
  - 100% of Booster Stations are in good to very good condition
  - Vertical assets at wells and booster stations are now included in long-term analysis and critical vertical asset replacements began in 2020 and updated in the proposed 2022-2027 capital plan
  - 100% of Water Storage Tanks are in good to very good condition
Water Asset Management Conclusions

- 84% of District water mains were added between 1980 and 2020, making them less than 40 years old. With a useful life of 80-110+ years the majority of rehabilitation and replacement of the District’s mains will occur between 2091-2130, providing ample time for the District to plan and save.

- The District has developed a plan to fund capital rehabilitation and replacement reserves to ensure future capital replacement requirements can be met, compared to the last AM Plan:
  - Annual Reserves Contribution Compared to Target are now at 100% compared to 60% in 2015, and
  - Balance of Reserves Compared to Replacement Cost Depreciation is at 18% compared to the previous 10%
Majority (95%) of the sewer assets are in good to very good condition and meet the District's level of service standards

- 95% of the District’s sewer mains are in good to very good condition
- 100% of lift stations are in good to very good condition
- Vertical assets at lift stations are now included in long-term analysis and critical vertical asset replacements began in 2020 and updated in the proposed 2022-2027 capital plan
Sewer Asset Management Conclusions

- Overall, the sewer system is relatively new with 98% of the system constructed since 1980, making them less than 40 years old. With a useful life of 60-100 years the majority of rehabilitation and replacement of the District’s mains will occur between 2081-2120, providing ample time for the District to plan and save.

- The District has developed a plan to fund capital rehabilitation and replacement reserves to ensure future capital replacement requirements can be met, compared to the last AM Plan:
  - Annual Reserves Contribution Compared to Target are now at 100% compared to 45% in 2015, and
  - Balance of Reserves Compared to Replacement Cost Depreciation is now at 19% compared to 10%
Next Steps

- Emphasize training and utilization of current systems before adding additional systems or platforms to ensure sustainability of advances made to date.

- Develop processes and standards to further data utilizations, AMI integration, and a culture of data consumers and analysts.

- Continue ensuring new employees are oriented to asset management and their role.

- Complete an in-house asset management program assessment and develop the next 5-year work plan, with specific goals to maintain or advance the District’s maturity level as appropriate for each of the asset management aspects.
Board Discussion and Action

 OPTIONS:

 ▶ Approve the 2021 Asset Management Plan by adopting resolution

 ▶ Provide input to refine 2021 Asset Management Plan for future approval