Sammamish Plateau North Sewer Basins

- 57 Miles Sewer Main
- 1,952 Manholes
- 8 Lift Stations
- 2,222 Acres of Service Area
### Sammamish Plateau Water – Measured Storm Flows

North Lake Lift Station  
Peak Inflow Trigger = 1,200 gpm

<table>
<thead>
<tr>
<th>Dates</th>
<th>Rainfall</th>
<th>Peak Flow</th>
<th>July Base Flows</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/20/2019</td>
<td>4.2”</td>
<td>1,305 gpm</td>
<td>690 gpm</td>
</tr>
<tr>
<td>2/5/2020 to 2/7/2020</td>
<td>3.25”</td>
<td>1,300 gpm</td>
<td>669 gpm</td>
</tr>
<tr>
<td>1/3/2021</td>
<td>2.72”</td>
<td>1,227 gpm</td>
<td>N/A</td>
</tr>
<tr>
<td>1/13/2021</td>
<td>4.2”</td>
<td>1,437 gpm</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Infiltration & Inflow (I&I) – Where Does it Come From?

Infiltration

- Groundwater seeps into sewer pipes through holes, cracks, joint failures, and faulty connections.

Inflow

- Stormwater flows into sewers via roof drain downspouts, foundation drains, storm drain connections, and holes in manhole covers. Grinder pumps connected to sump pumps.

The District’s capacity constraints occur during wet weather events.
Sammamish Plateau Water – Infiltration & Inflow (I&I) Internal I&I Investigation

• Internal Work
  • Manhole plugs
    • Most outside of high traffic lanes remain from previous placement.
    • High traffic areas require multiple visits to ensure continued protection from I&I.

• Data Analysis
  • Trend analysis of all North Sewer System lift stations to point out areas to prioritize work.
  • Example of Trend Information.
Sammamish Plateau Water – Infiltration & Inflow (I&I)
Internal I&I Investigation

• Video Inspection of Sewer Mainlines
  • If done when ground is saturated it can pinpoint areas of intrusion.

• Jetting or cleaning sewer pipes. This is done to support the ability to effectively perform video inspection.

• I&I Pictures are not from the District system.
Sammamish Plateau Water – Infiltration & Inflow (I&I) Consultant Engagement

• Smoke Testing of the Entire North Sewer System – G&O Consultant Proposal
  • One month to develop the plan specific for our system.
  • One month to do the smoke testing.
  • Estimated testing to be completed by the end of September.
    • We are discussing how this can be expedited.
  • Technical Memorandum would be completed by October.
  • Estimated Cost of $73,000
Sammamish Plateau Water – Infiltration & Inflow (I&I) Consultant Engagement

• ADS Environmental Services provided a flow monitoring plan consisting of:
  • Mobilization of Flow Monitors
  • 10 Flow Monitors placed for 12 months
  • 20 Flow Monitors placed for 8 months which will be placed based on early information from the first group of flow monitors
Sammamish Plateau Water – Infiltration & Inflow (I&I) Consultant Engagement

• ADS Environmental Services
  Continued:
    • Proposal Pricing of $360,000
    • One year schedule proposal - August 2021 through August 2022.
Sammamish Plateau Water – Infiltration & Inflow (I&I) Consultant Engagement

• ADS Environmental Services Continued:
  • Project Deliverables/Expectations
    • External evaluation of flows in the system.
    • Expertise in I&I investigation and interpretation of flow data.
    • Large number of flow monitors which will provide a comprehensive flow profile for the North Sewer System.
  • Data Editing and Analysis
  • Final Report
## Proposed Schedule

<table>
<thead>
<tr>
<th>I&amp;I Proposed Work</th>
<th>Initiation of Project</th>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Work</td>
<td>2/2021</td>
<td>Ongoing – Manhole plugs will be finished by mid – November.</td>
</tr>
<tr>
<td>G&amp;O Smoke Testing</td>
<td>7/2021</td>
<td>10/2021</td>
</tr>
<tr>
<td>ADS Environmental Services Flow Monitoring and Analysis</td>
<td>8/2021</td>
<td>8/2022</td>
</tr>
</tbody>
</table>
QUESTION

DOES ANYONE HAVE QUESTIONS?