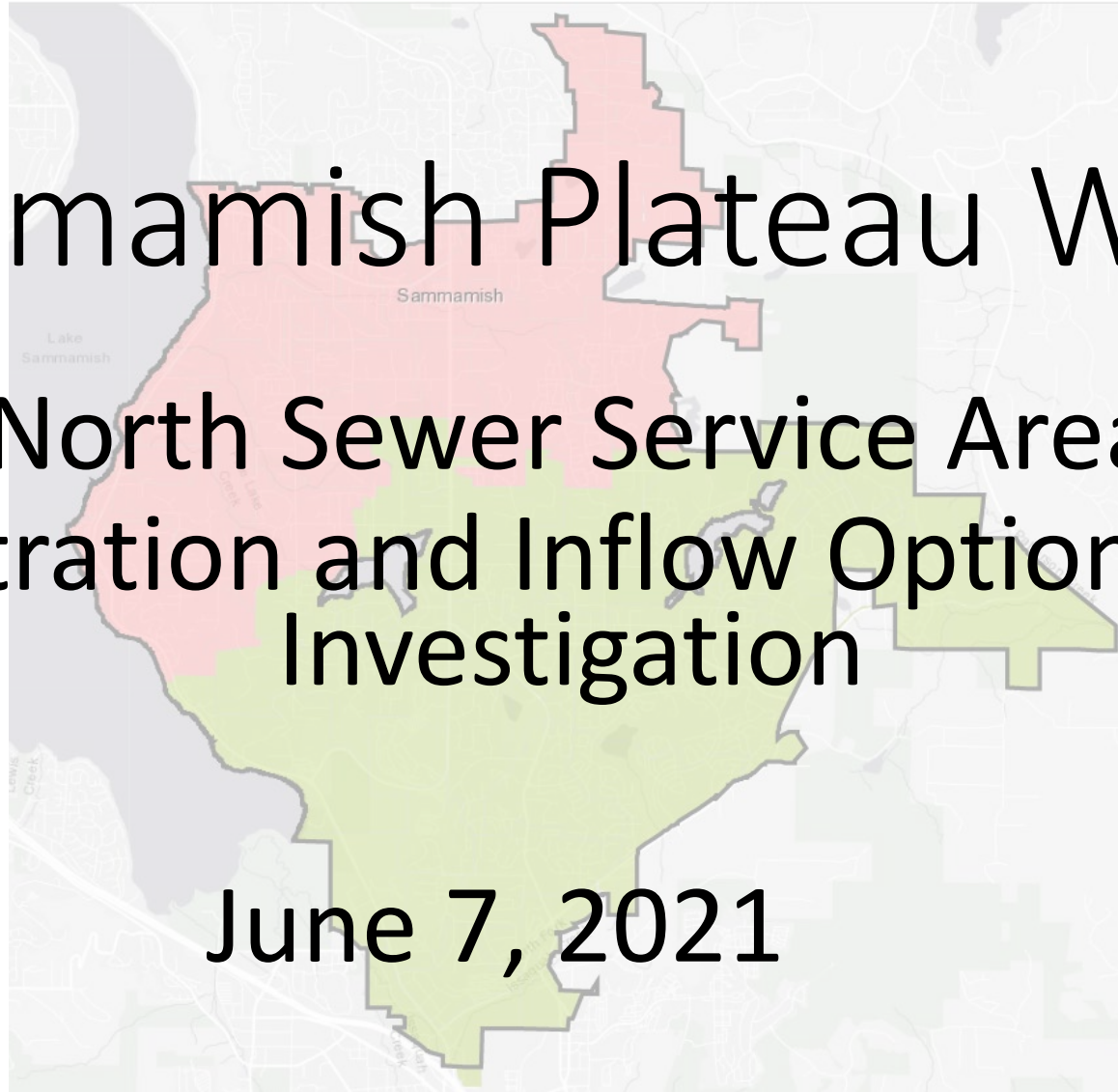


Sammamish Plateau Water

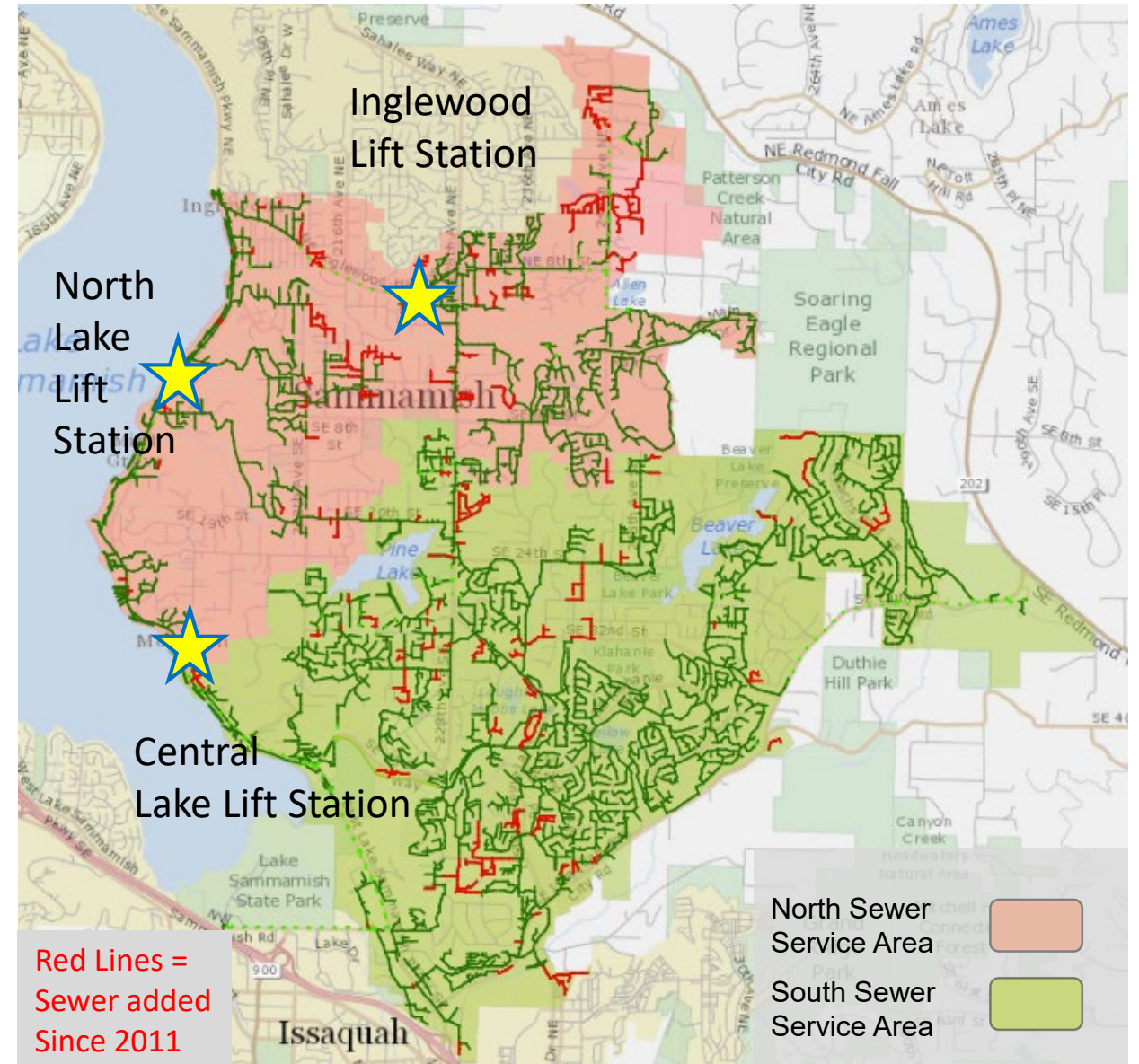
North Sewer Service Area Infiltration and Inflow Options for Investigation

June 7, 2021



Sammamish Plateau North Sewer Basins

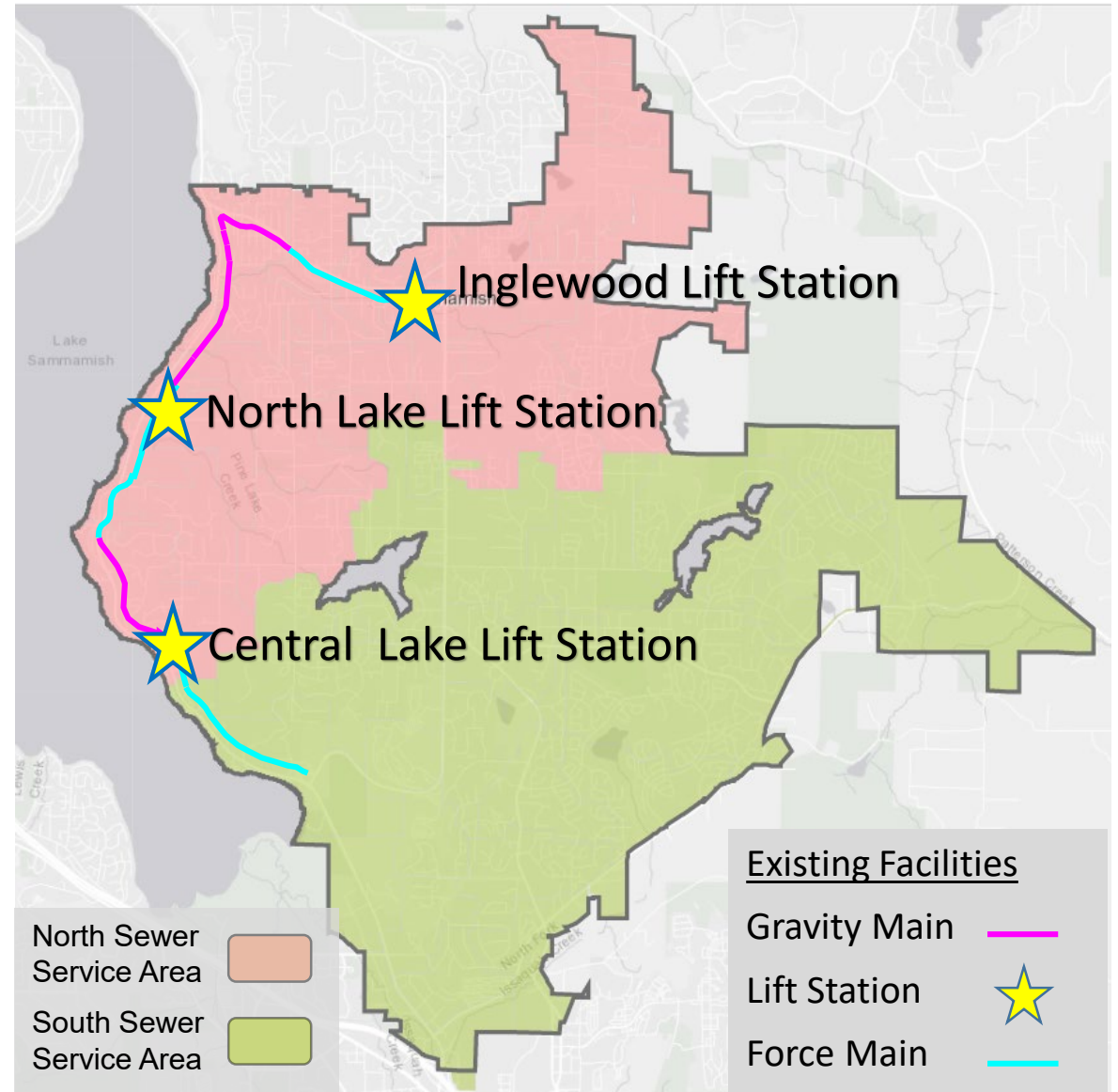
- 57 Miles Sewer Main
- 1,952 Manholes
- 8 Lift Stations
- 2,222 Acres of Service Area



Sammamish Plateau Water – Measured Storm Flows

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

Dates	12/20/2019	2/5/2020 to 2/7/2020	1/3/2021	1/13/2021
Rainfall	4.2"	3.25"	2.72"	4.2"
Peak Flow	1,305 gpm	1,300 gpm	1,227 gpm	1,437 gpm
July Base Flows	690 gpm	669 gpm	N/A	N/A



Infiltration & Inflow (I&I) – Where Does it Come From?

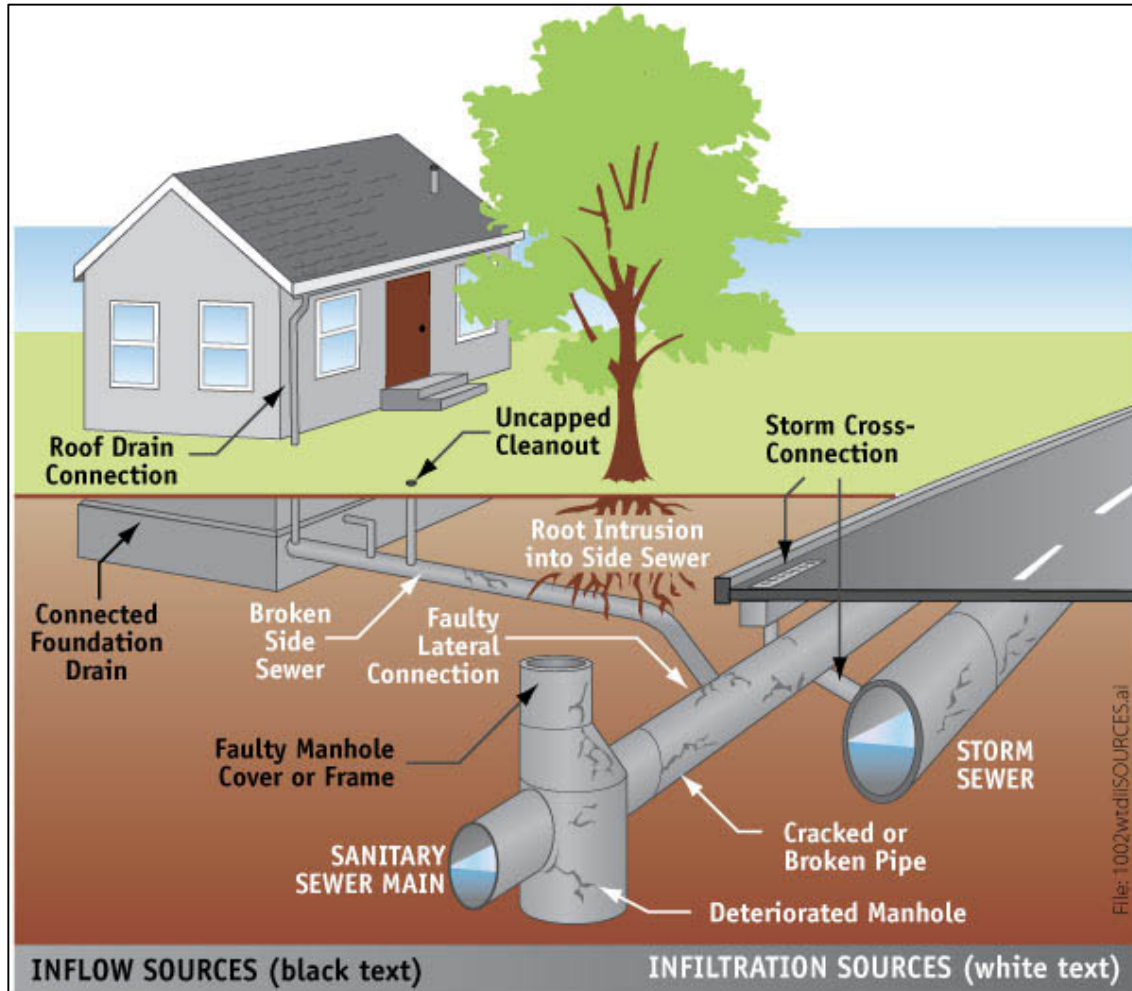


Image source: kingcounty.gov – I/I resources

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

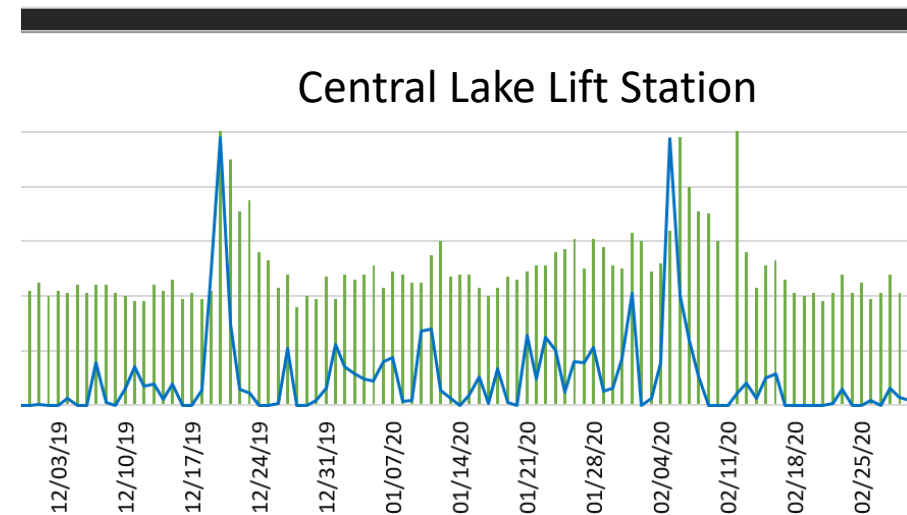
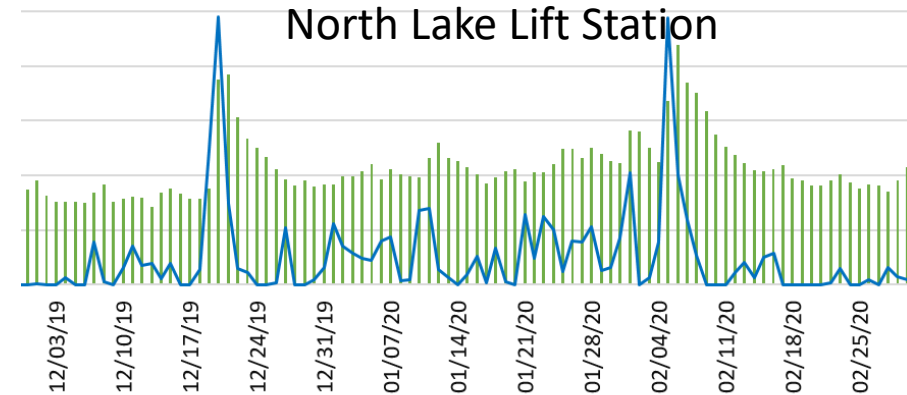
- Internal Work

- 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

I&I Proposed Work	Initiation of Project	Completion Date
Internal Work	2/2021	Ongoing – Manhole plugs will be finished by mid – November.
G&O Smoke Testing	7/2021	10/2021
ADS Environmental Services Flow Monitoring and Analysis	8/2021	8/2022

