

Bellevue Utilities Lake Washington Lake Line Management Plan Project

**Lake Line 101
Informational Briefing to Medina City Council**

Angela Chung, PE, Senior Project Manager,
Engineering Division
Bellevue Utilities Department
May 9th, 2022



Purpose

Inform City of Medina
Council of Bellevue
Utilities Lake Line
Management Plan
Project and Respond to
Questions



PHOTO: DAVID JOHANSEN VASQUEZ



Agenda

1. A Lake Line History
2. Lake Washington Lake Line Challenges
3. Potential Lake Line Replacement Options
4. Lake Washington Lake Line
Management Plan & Anticipated Schedule



A Lake Line History

- Many species lived in Lake Washington.
- In the 1900s wastewater was being directly discharged into the lake... and development increased

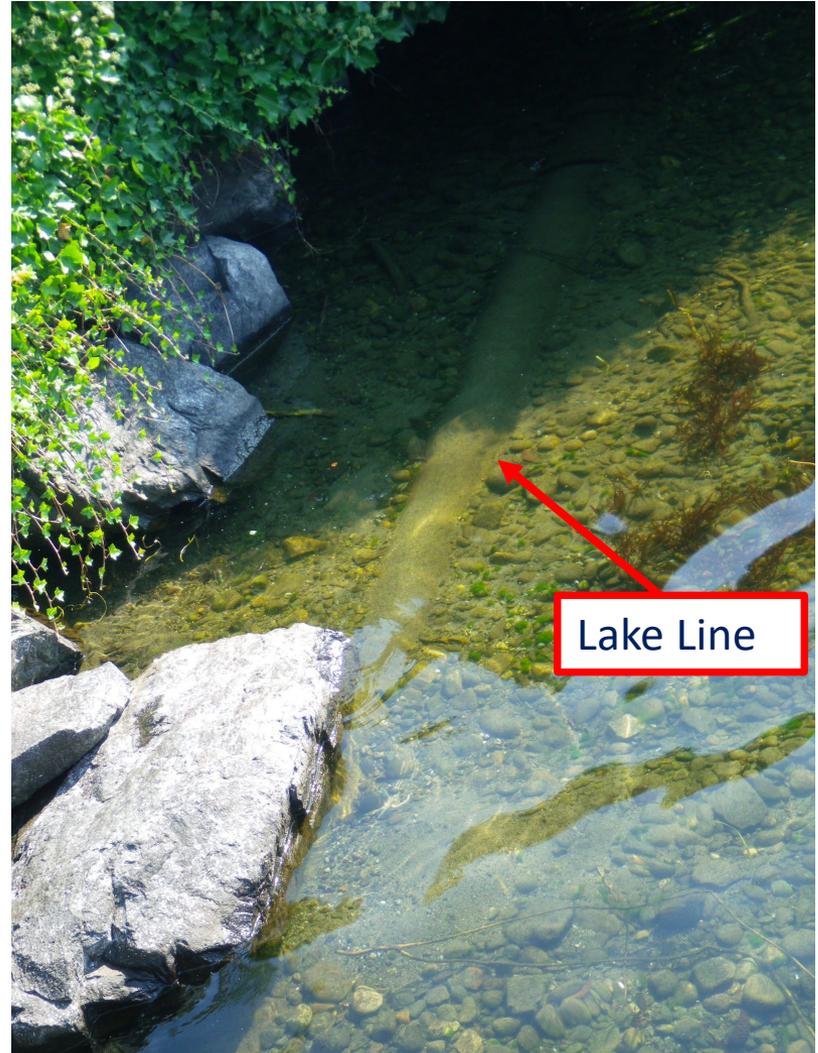


- In 1940s – 50s, the nutrients in the lake caused unpleasant blooms of noxious blue-green algae



...and cleanup begins

- 1950's: Clean-up of Nutrient-rich water begins
- 1950's- 1960's: Lake Line Sewer Mains are installed in Lake Washington
- After the 60s, the Lake Lines were transferred to the City of Bellevue
- By 1975 Lake regained clarity. Present day it is clean enough to swim and recreate and healthier for our returning salmon to spawn.



Lake Washington Lake Lines in City of Bellevue Service Area

Jurisdiction	Approx. Length (Miles)	% of total Lk Wa Lake Lines
Yarrow Point	1.5	10%
Hunts Point	2.0	14%
Medina	4.5	31%
Bellevue	5.7	39%
Beaux Arts	0.3	2%
Unincorporated King County	0.6	4%
<i>TOTAL</i>	<i>14.6</i>	<i>100%</i>

Note: City of Renton has 1 tax parcel being served by the Bellevue Lake Line

Problem Statement

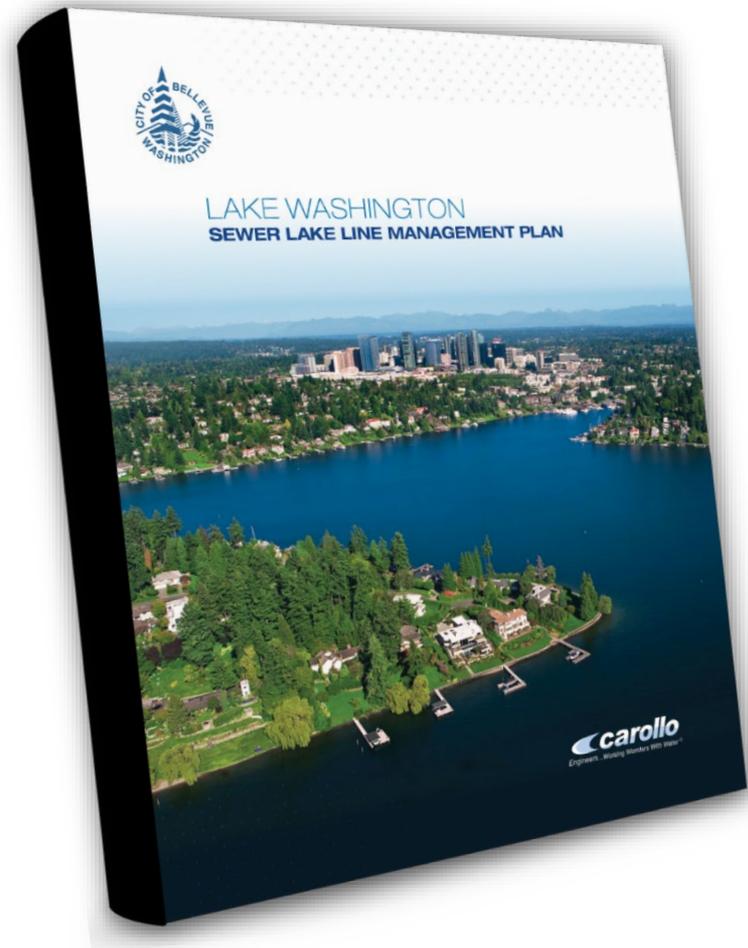


The Lake Washington Lake Line infrastructure is aging and portions may present potential service level, financial, and environmental risks.



Project Goal

Understand, identify, and prioritize the Lake Washington Lake Lines and key operational, financial and capital investment strategies to phase future repair, replacement and operations of the Lake Lines in a Sewer Lake Line Management Plan.



Existing System Knowledge

- Approximately 65 years old
- Missing or inaccurate as-built records
- Sags in the system
- Nightly to Weekly flushing done by O&M
- Risk of Failure: Need more information
- 2016 Condition Assessment



Potential Options for Lake Line Replacement

- Options Within the Lake
- Options On Shore
- Options Upland



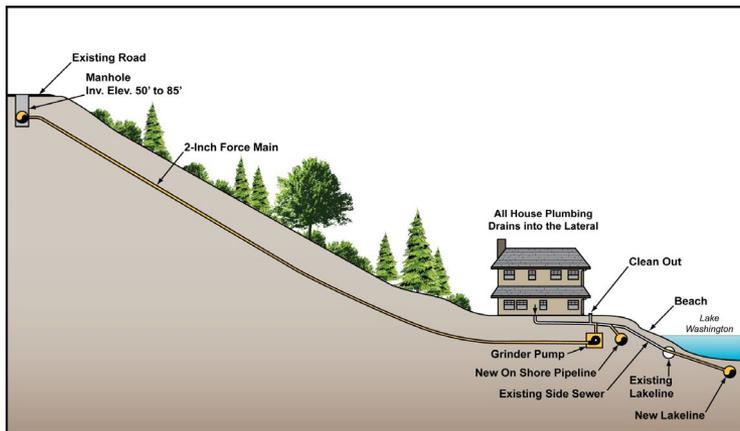
Pipe Bursting



Gravity Sewer Line via Trenchless Technology



Gravity Sewer Line via Open Cut Construction



Grinder Pumps

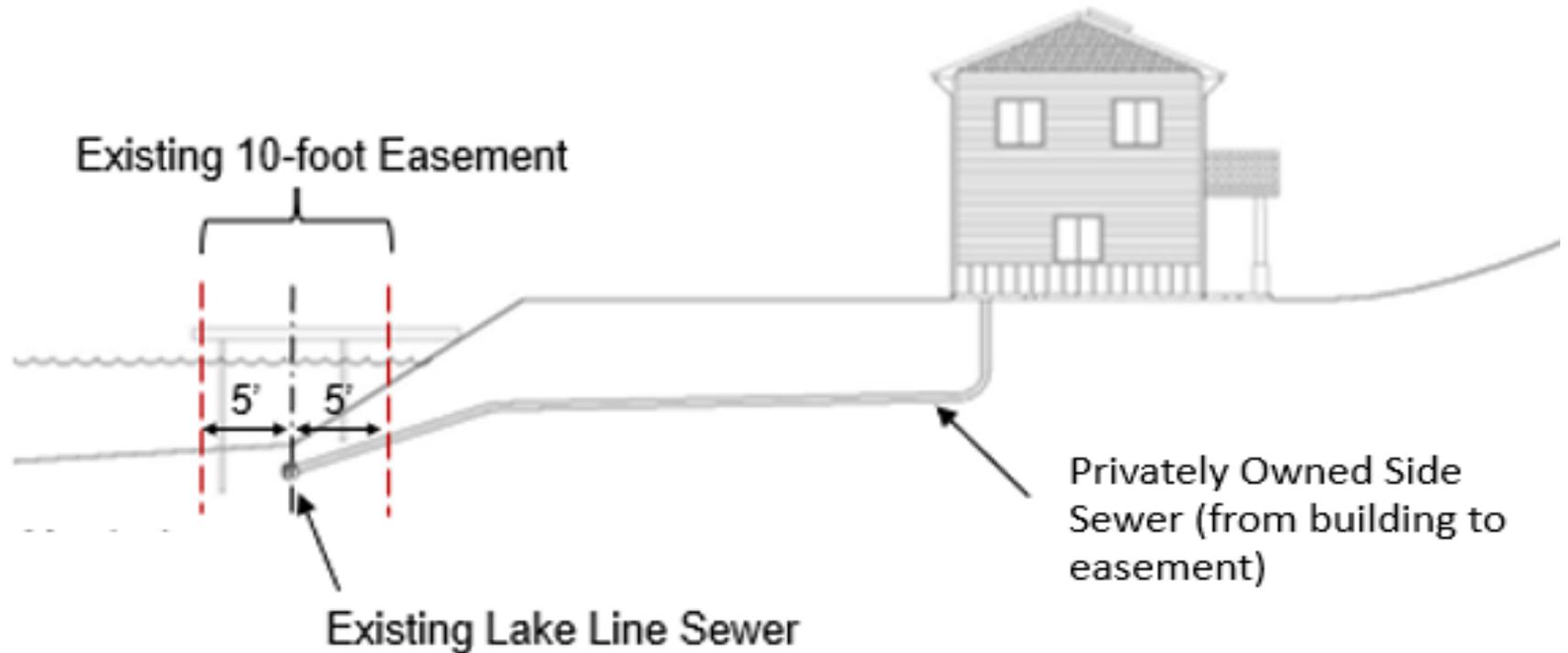


Cured-in-Place Pipe (CIPP)

Significant Challenges

- **Real Property**
- **Technical challenges**
- **Environmentally sensitive**
- **Impacts to waterfront property owners**
- **No single “fix-all” solution**
- **Public Outreach: Affects multiple communities in multiple jurisdictions**

Working with Property Owners



Example cross section





Technical Challenges

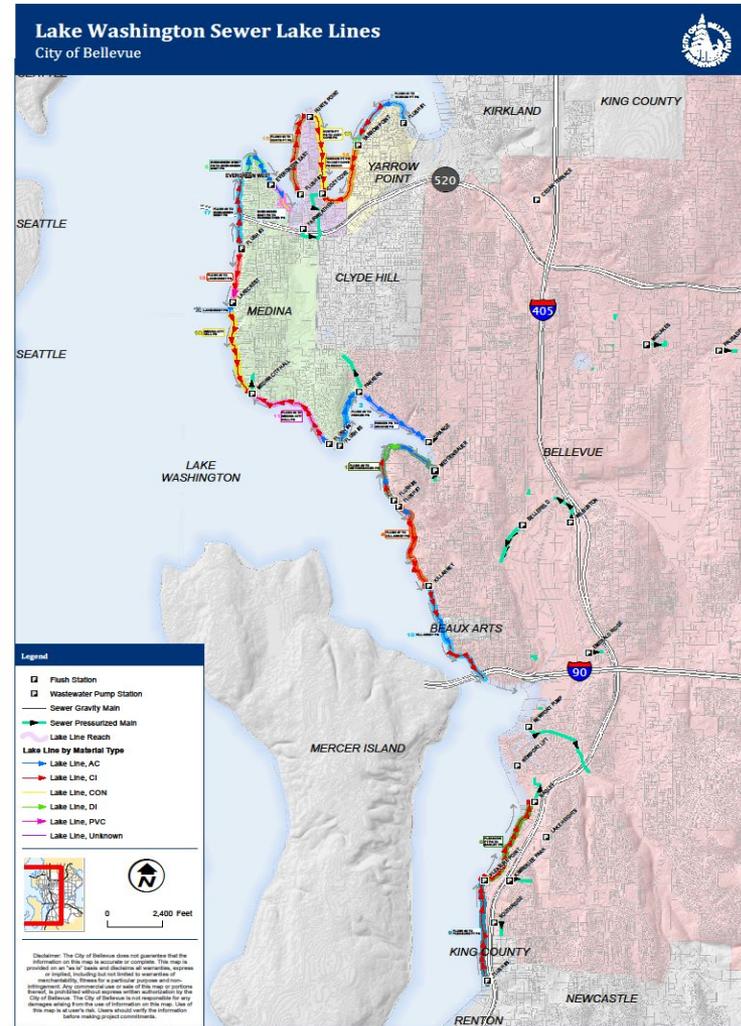


Environmentally Sensitive

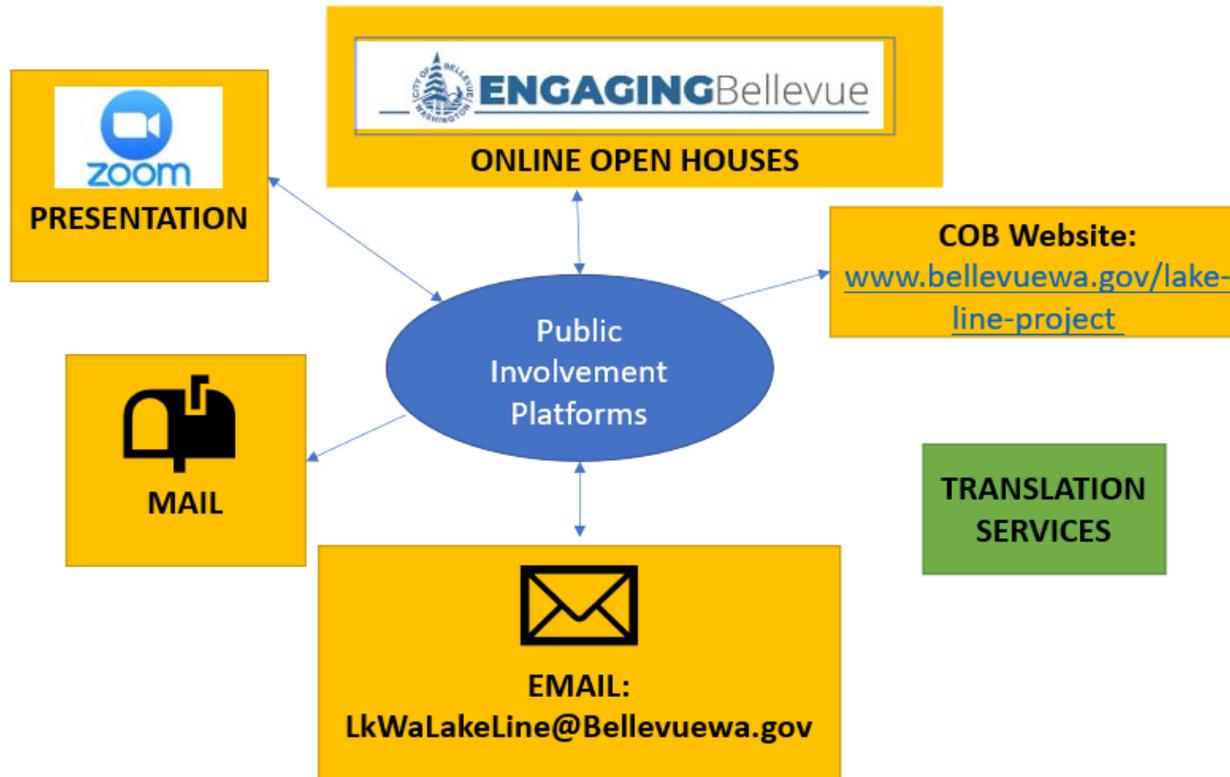


Communities and Public Outreach

Yarrow Point
Hunts Point
Medina
Bellevue
Beaux Arts
Unincorporated King
County



Public Involvement Plan – Engagement Platforms



Lake Washington Lake Line Management Plan and Schedule



Lake Washington Lake Line Management Plan Components

This plan will include:

- Community involvement
- Environmental Policy Act (SEPA) & Environmental Impact Statement (EIS)
- Decisions based on financial, environmental, and social risks and benefits analysis

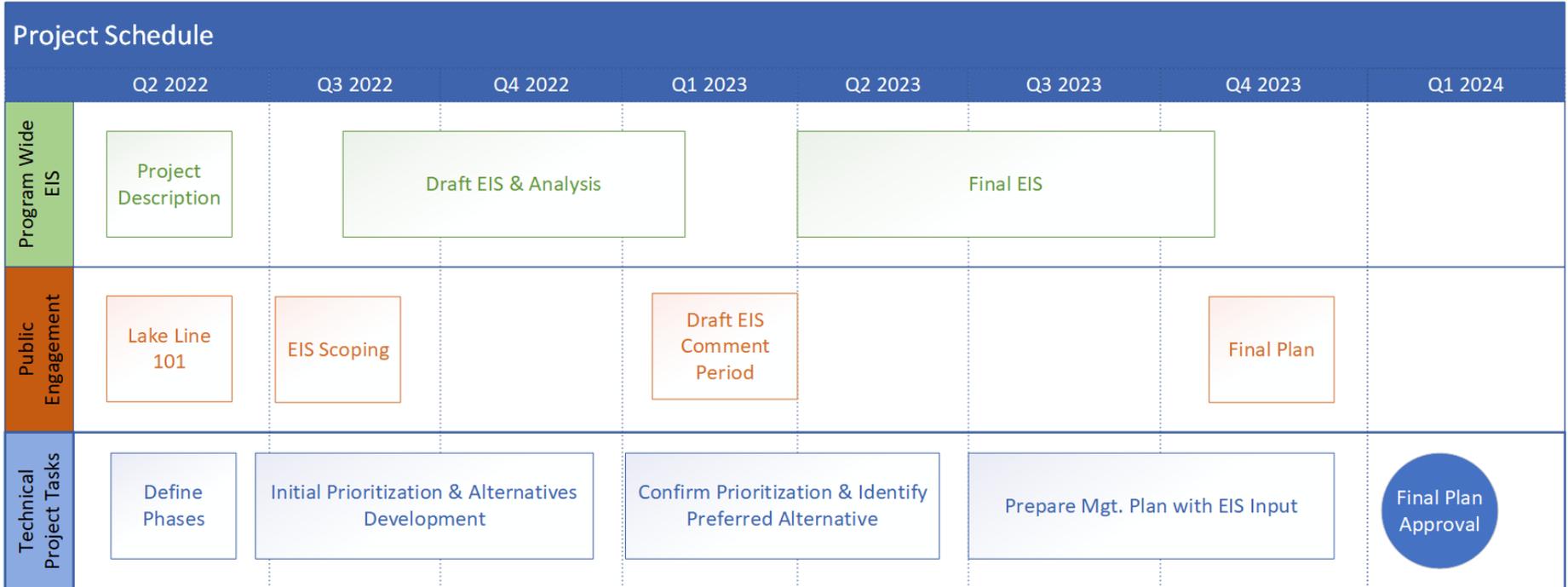


This plan will help determine:

- Operational strategies and capital improvement projects.
- Construction Phasing & Timing
- Financial Strategy



Anticipated Project Schedule



Questions?



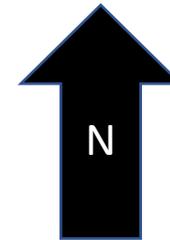
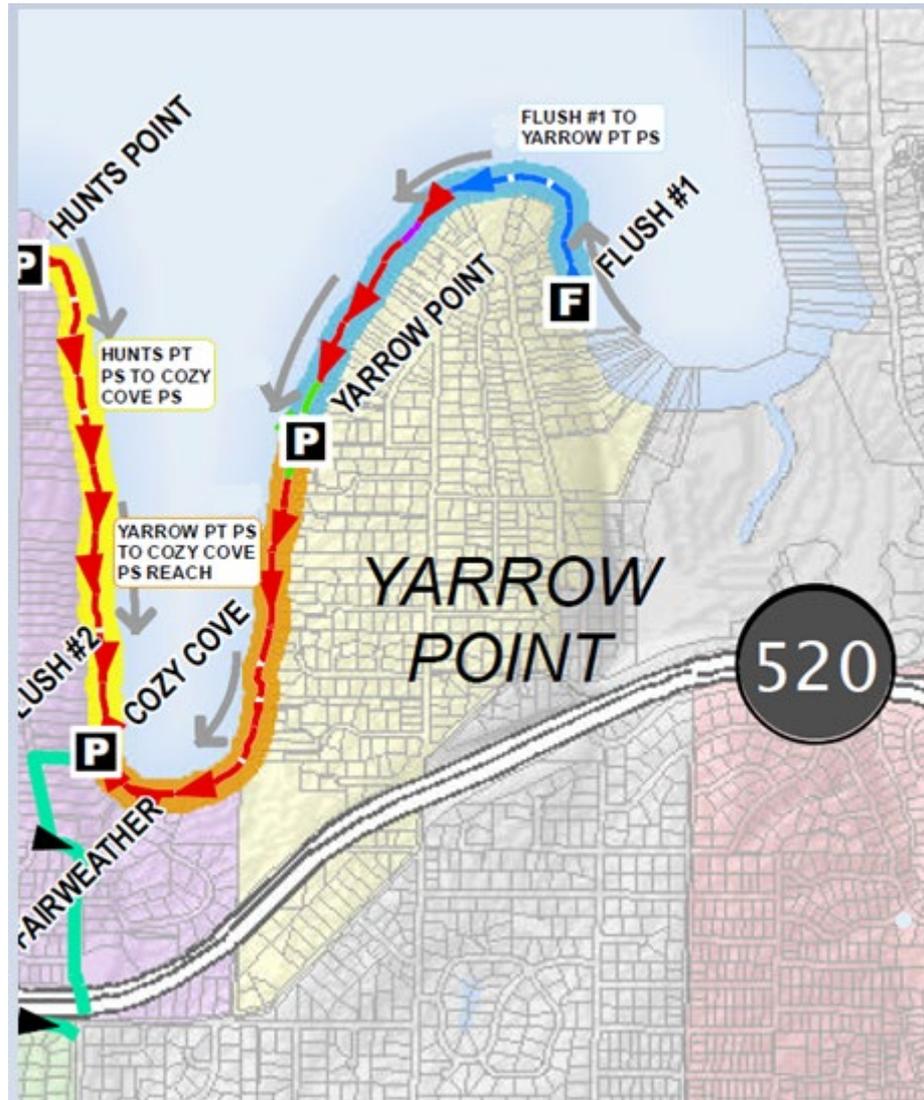
END



Medina



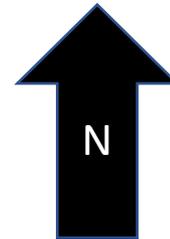
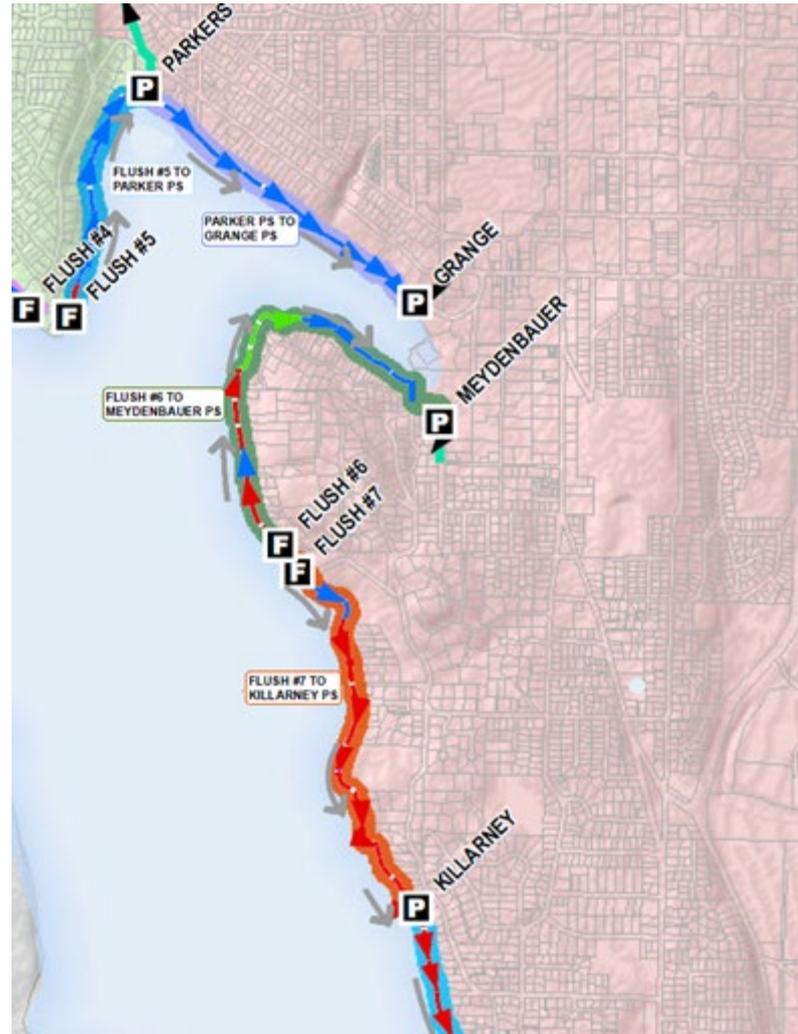
Yarrow Point



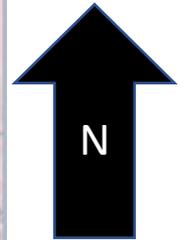
Hunts Point



Bellevue



Beaux Arts



Unincorporated King County

