

Lake Washington Lake Line Management Plan Update

Update Presentation for ESC

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Engineering

January 7, 2021



City of Bellevue

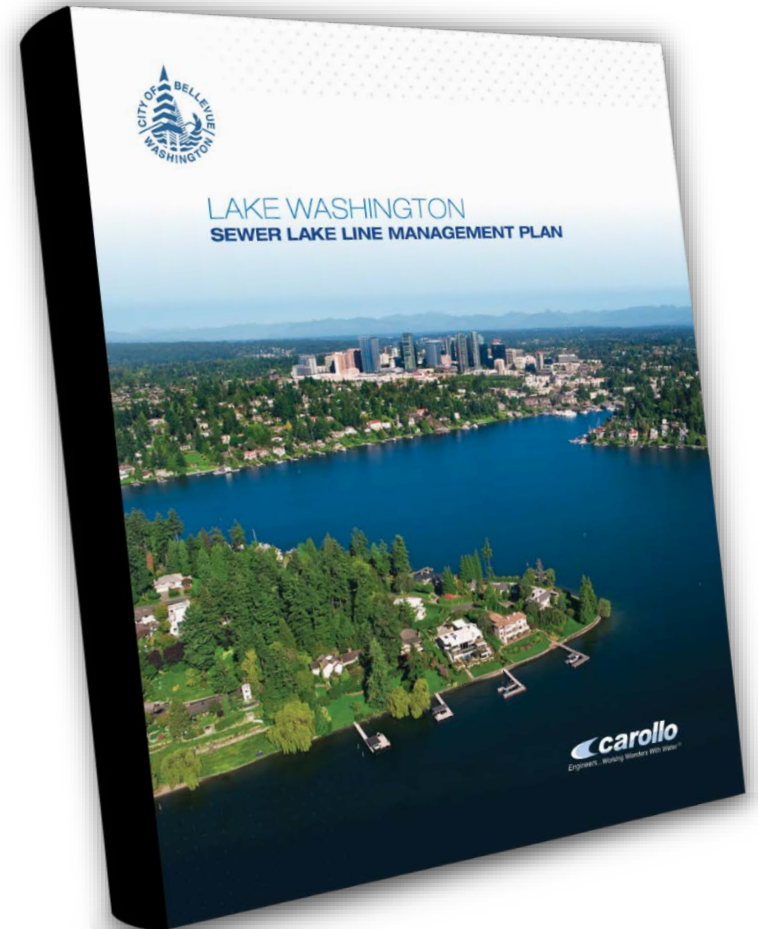
Problem Statement

Our Lake Line infrastructure is aging and may begin to present potential service level, financial, and environmental risks.



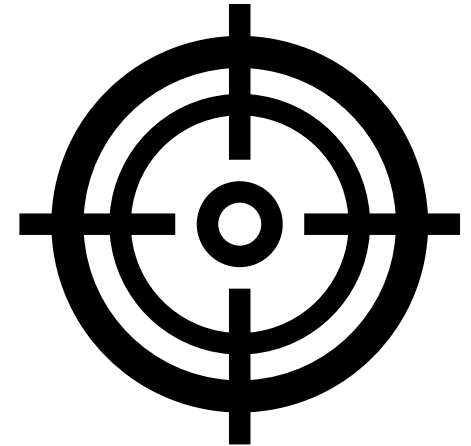
Project Goal

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



Purpose of Meeting

The purpose of this meeting is to update ESC on the progress of the Lake Line Management Plan Project.



Agenda

1. Background/Project Initiation
2. Project Update:
 1. Existing Conditions
 2. Service Areas/Criticality/Toolbox
 3. Public Outreach Plan
 4. Multi-Agency Workshops
 5. Schedule
3. Q&A



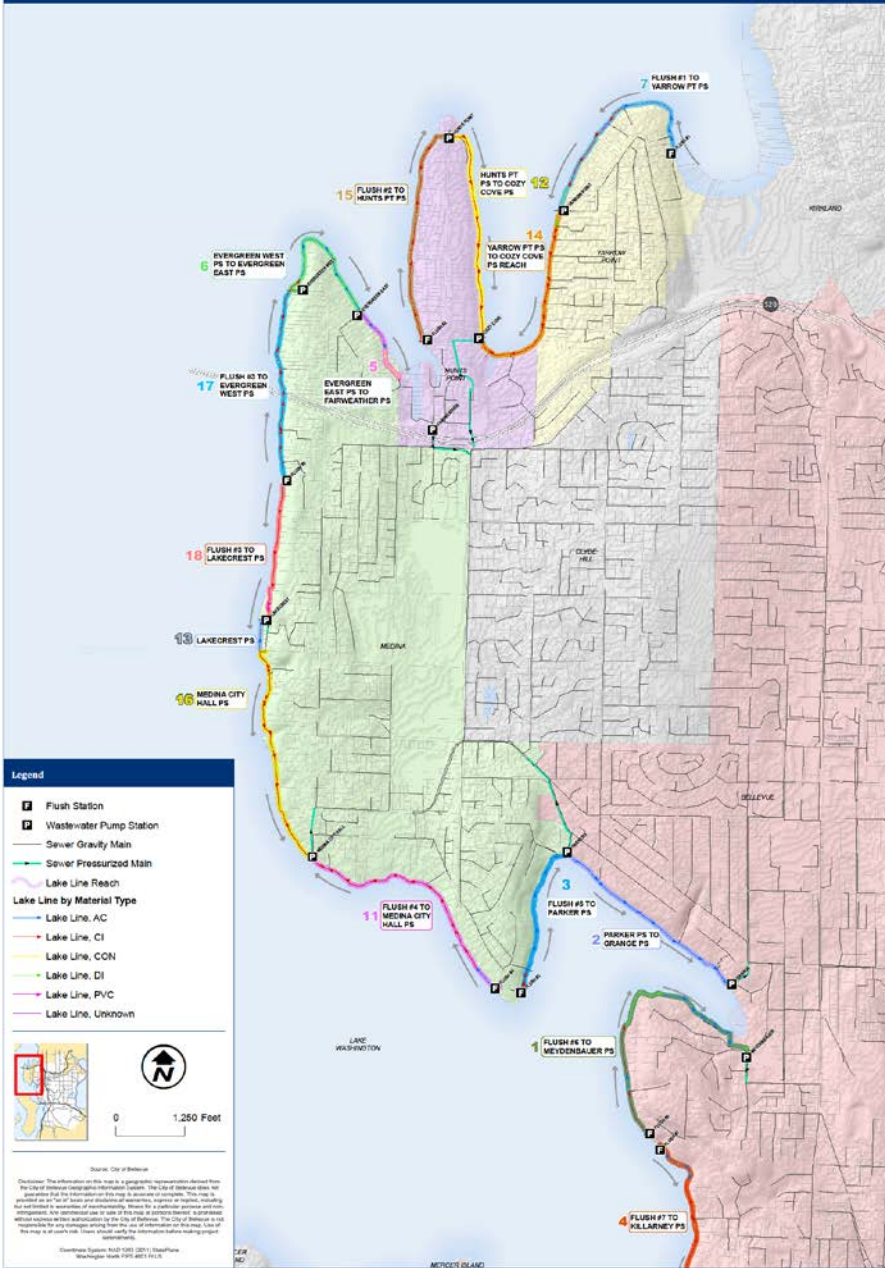
Lake Washington Lake Lines

- Bellevue has 14.6 Miles of Lake Washington Lake Lines
- Lake Lines were installed to prevent sewage discharges into Lake Washington
- Approximately 65 years old
- Limited ability to clean and maintain the lines.
- Challenges of working on these lines:
 - Real Property
 - Technical
 - Specialized equipment
 - Environmentally Sensitive Area
 - Spans many communities



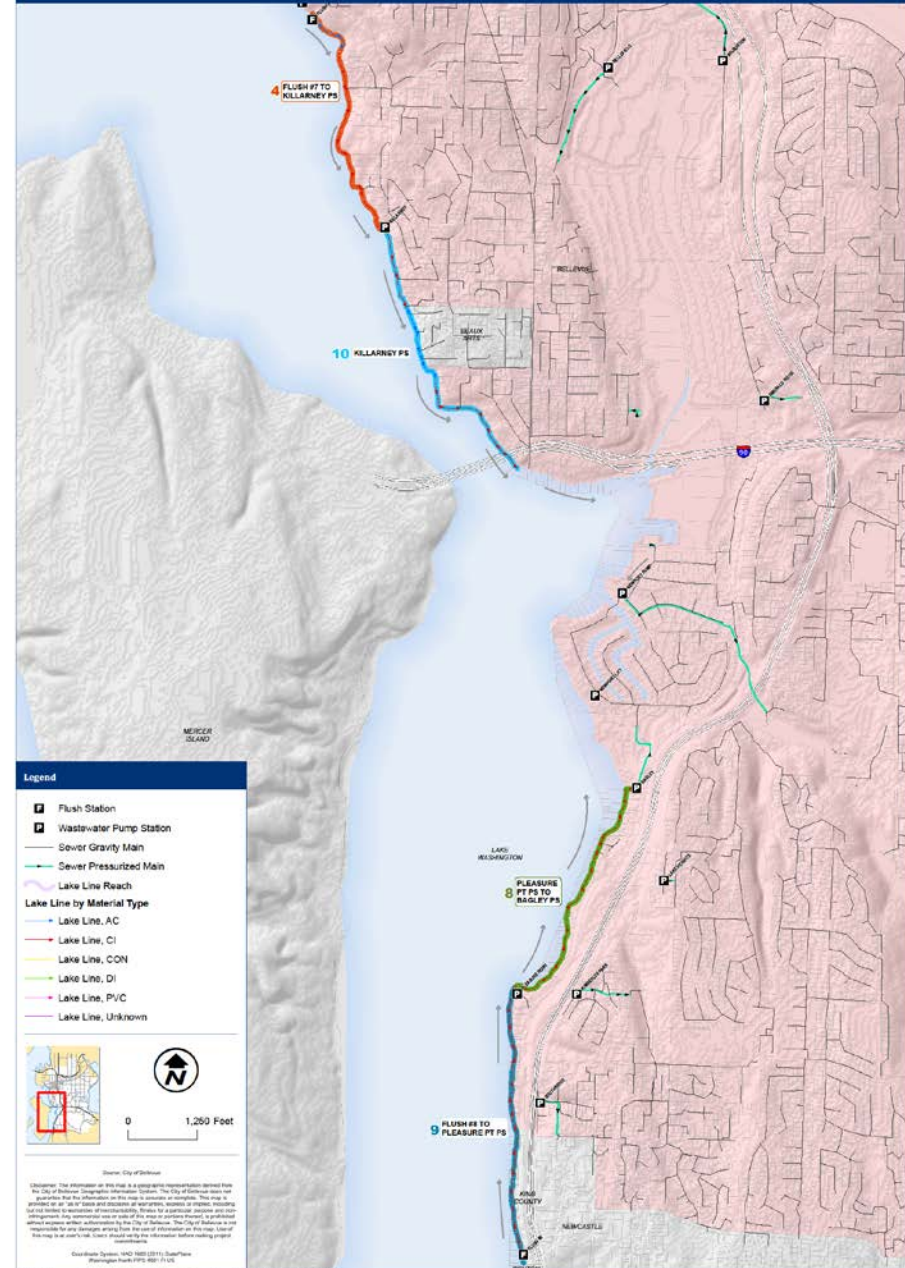
Sewer Lake Line Condition Assessment

City of Bellevue



Sewer Lake Line Condition Assessment

City of Bellevue

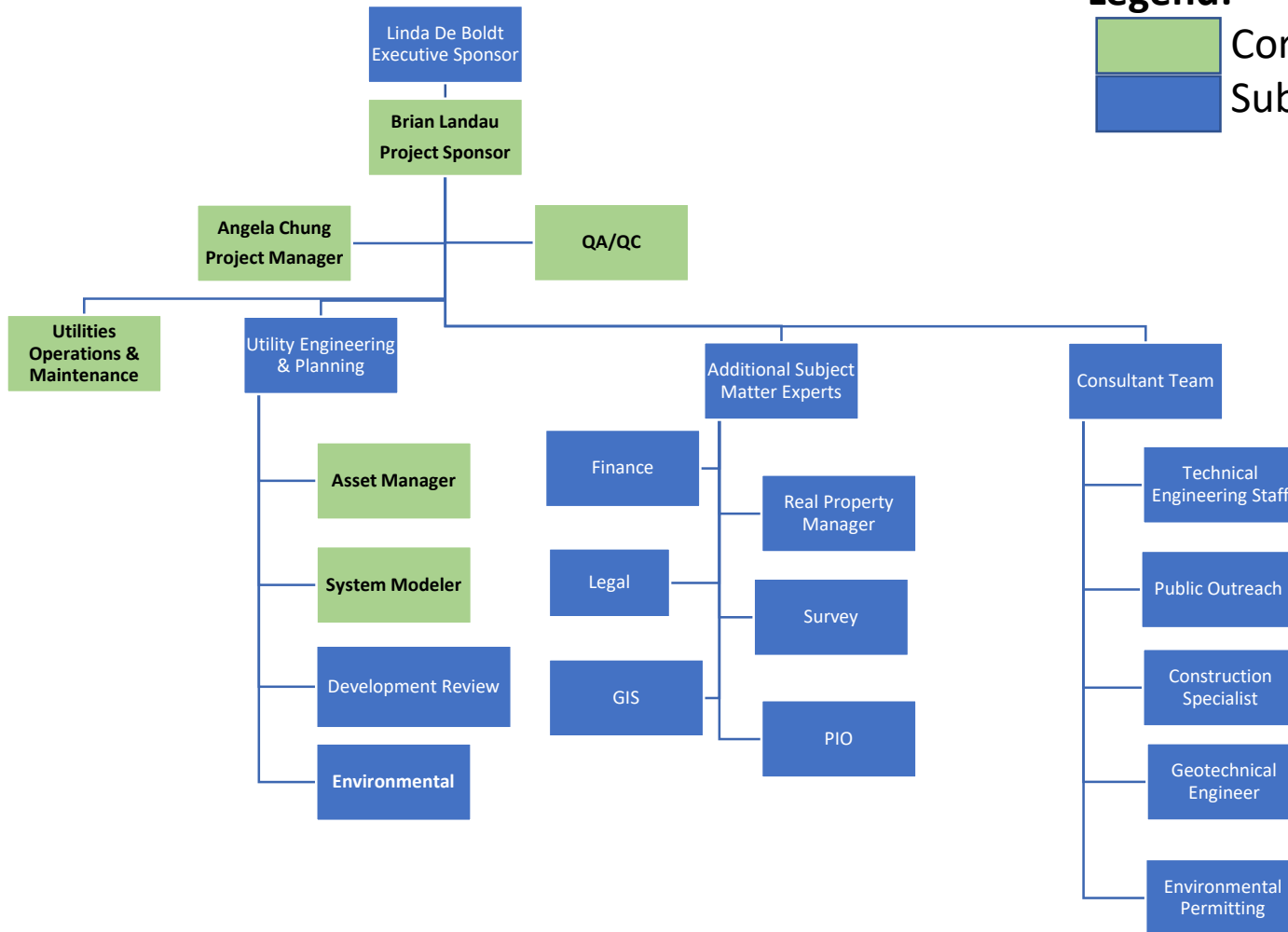


Bellevue Project Team

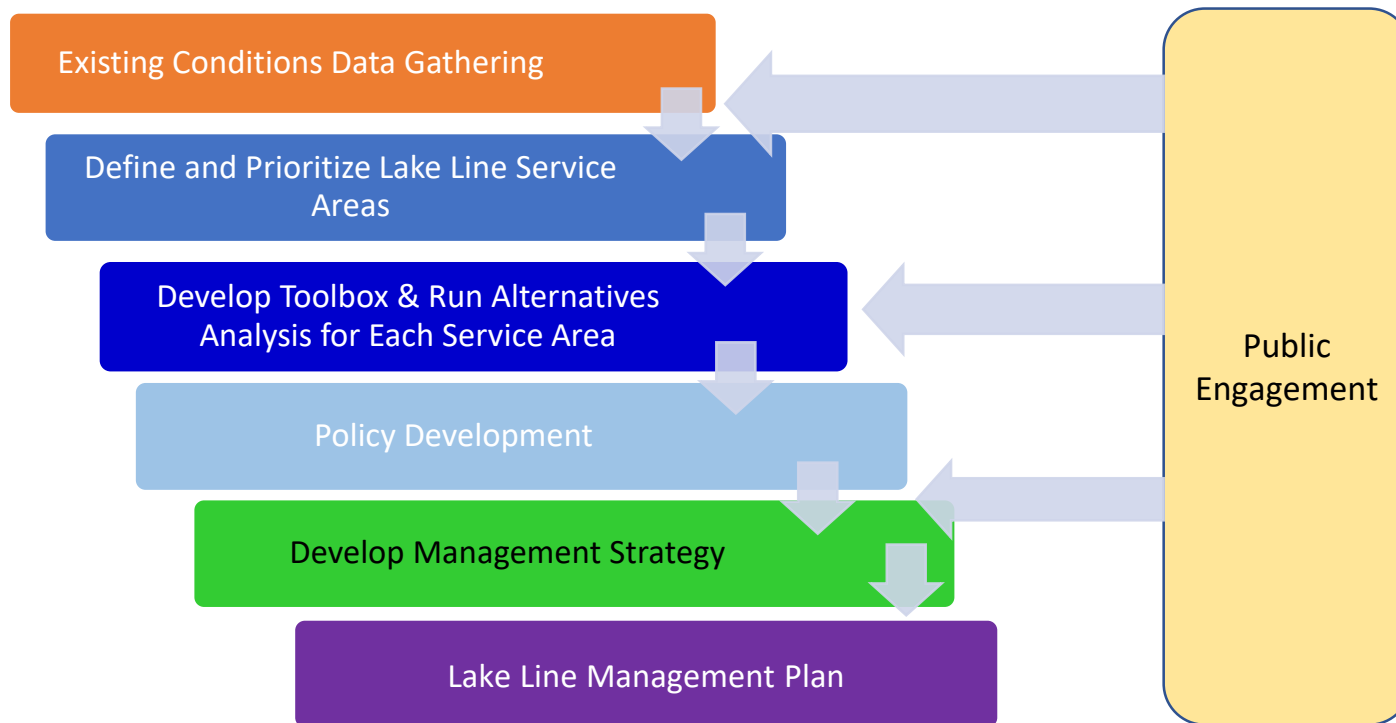
Legend:



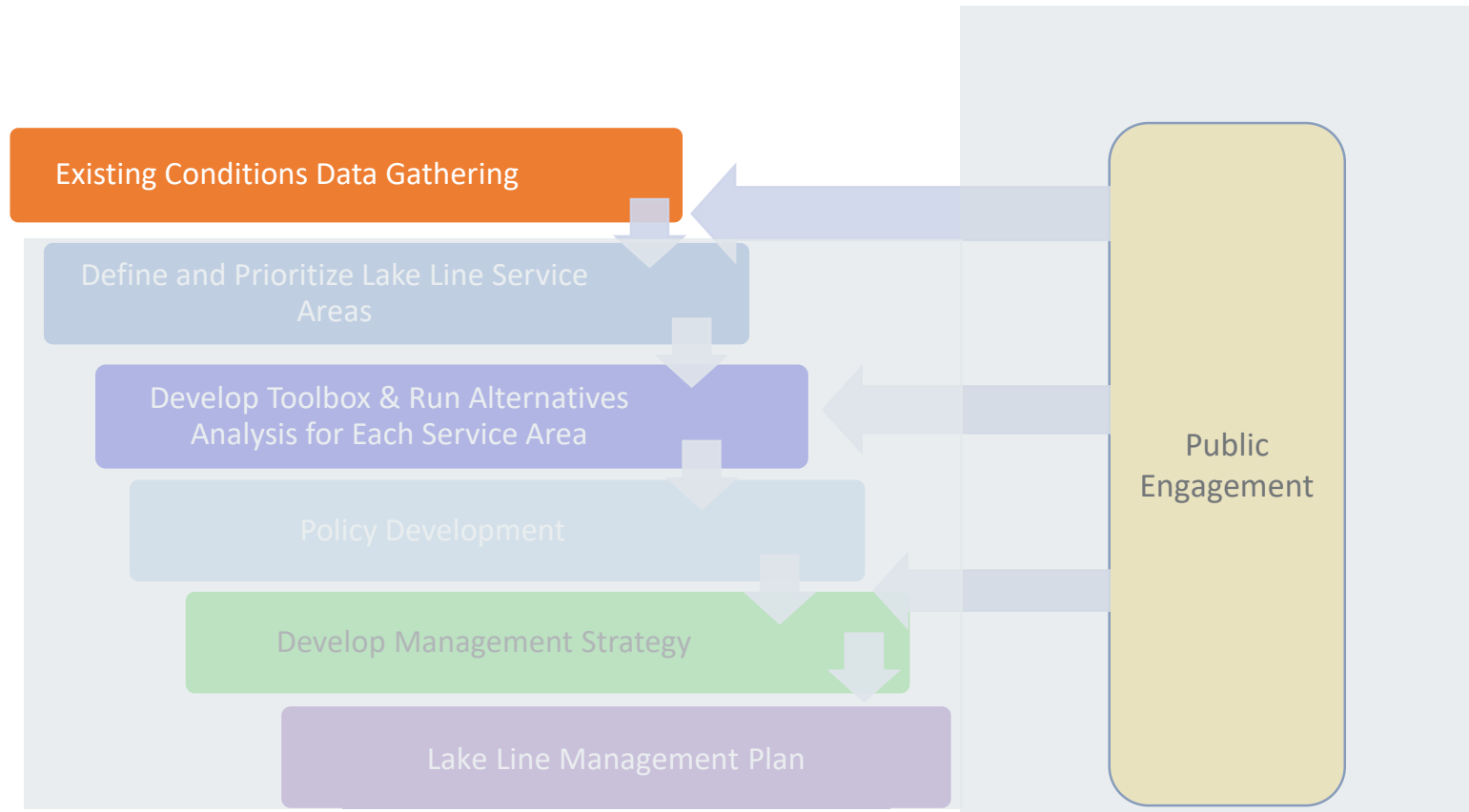
Core team members
Subject matter experts



Lake Line Management Plan Framework



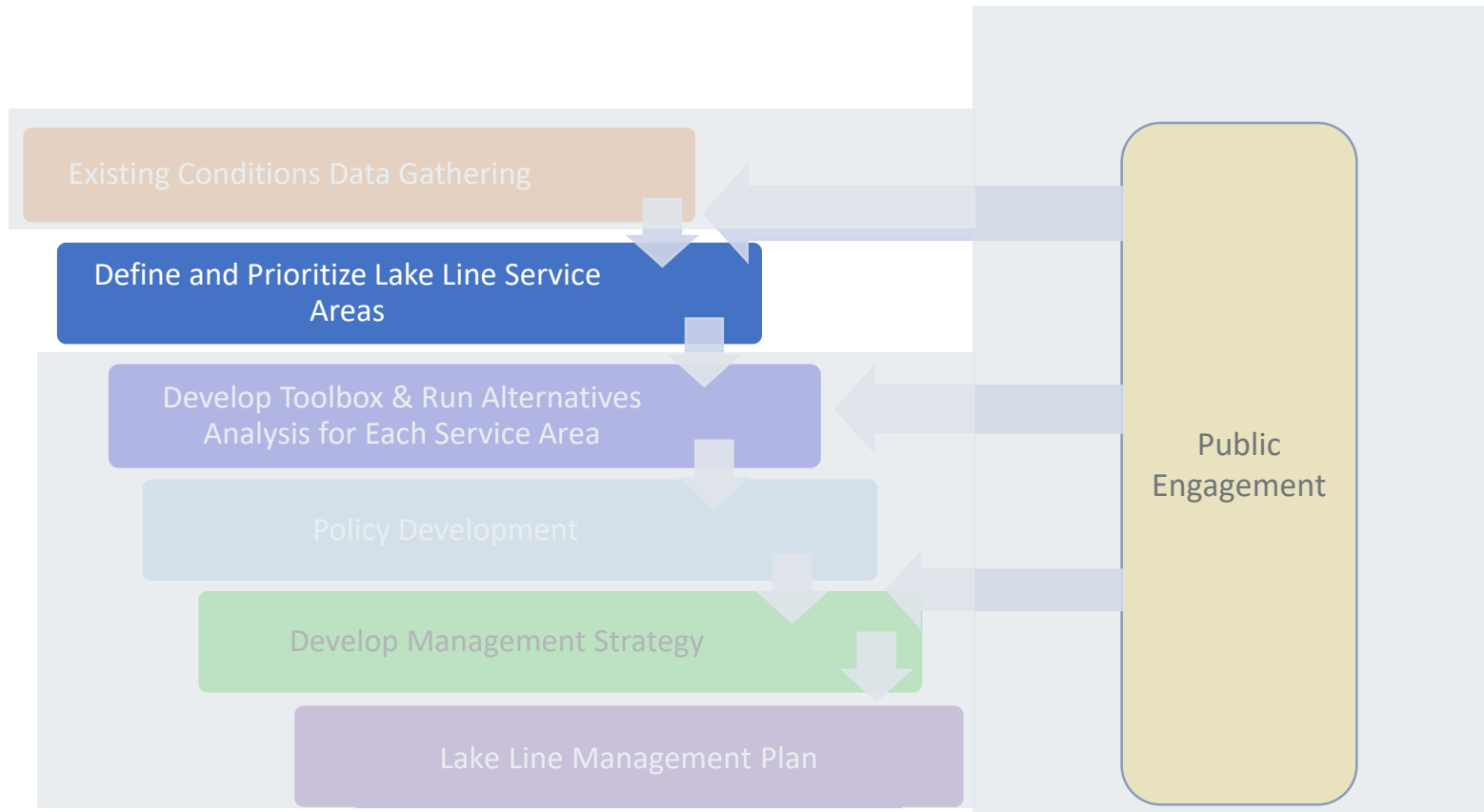
Existing Conditions Data Gathering



Existing Conditions Data

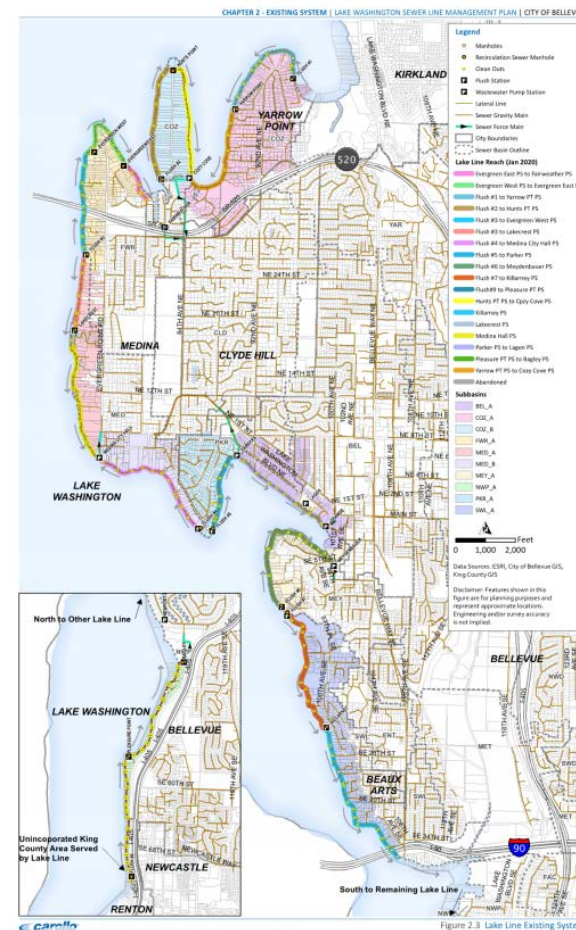


Begin to Define and Prioritize Service Area

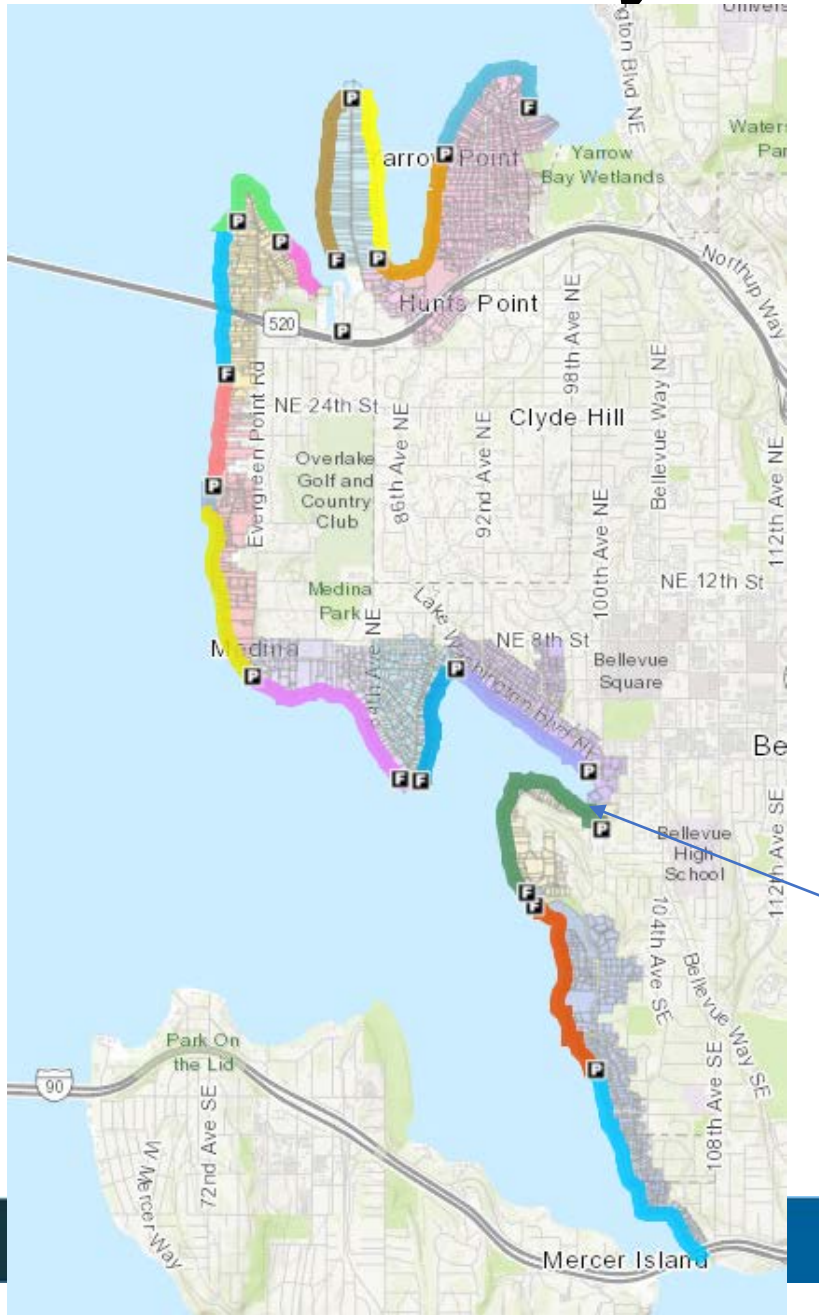


Define and Prioritize Service Areas

- Reaches/Service Areas
 - Pump station-to-pump station definition
 - Consistent with prior reports
- Manageable evaluation size
 - 17 reaches
 - Range of ~1,500 LF to 6,000 LF pipe
 - Similar characteristics in reach/service area
- Captures multiple components of system (pipes & pump/flush stations)



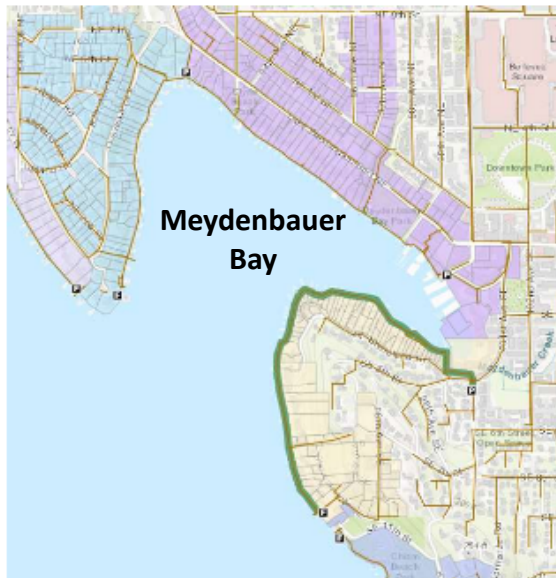
Lake Line Systems Data on GIS



Type of Data	Data shown
Reach	Flush #6 to Meydenbauer PS
Owned by	City of Bellevue
Managed by	City of Bellevue
Asset Number	197752
Pipe Material	Asbestos Cement
Diameter	8"
From Manhole	194402
To Manhole	194419
As-built Length	5360
Grid ID	D-8
Site Address	9810 SE Shoreland Dr
Fish Spawning Area	Yes

Lake Line -Quick Reference

Meydenbauer: MEY_A_1



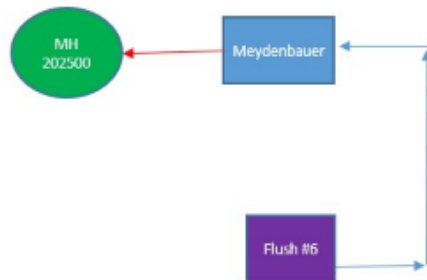
This service area originates at Flush #6, just north of Chism Beach Park, and flows around Moorland to the Meydenbauer PS near the south end of Whalers Cove in Meydenbauer Bay.

Quick Facts:

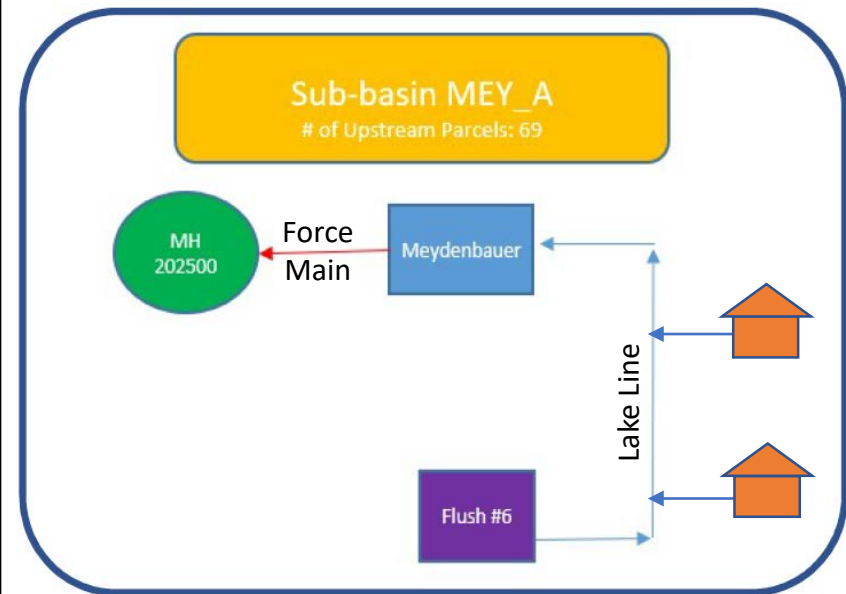
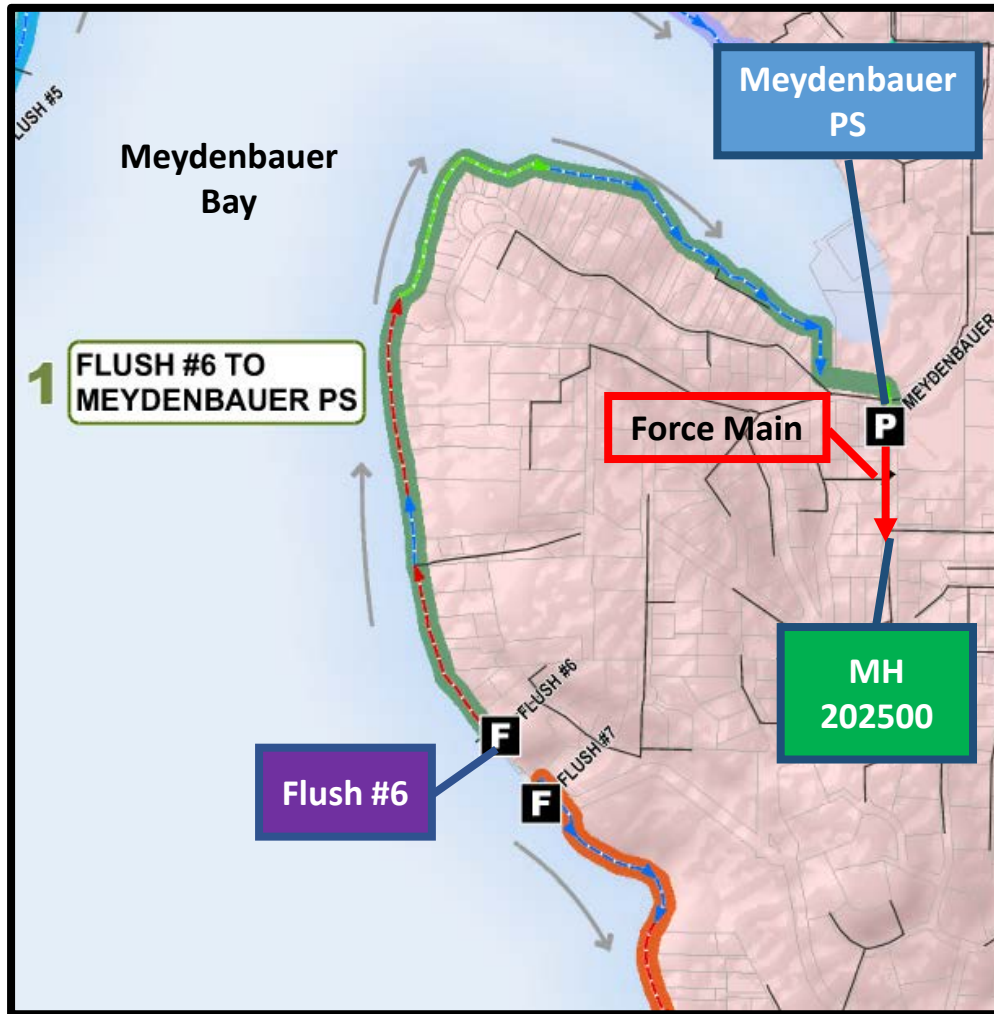
- Reach is located within Bellevue city limits.
- Contains approximately 5,366 LF of 8" diameter ductile iron pipe and pipe of other materials.
- Lake line is located both in the lake and onshore.
- Flush #6 has a vehicle access easement from private (secured) driveway, but is typically accessed by foot from Flush Station #7 reserved utility parking.
- The Meydenbauer PS is located within the 100th Ave SE right-of-way, with street parking adjacent to the station.
- Public spaces along reach include Wetherhill Nature Preserve.
- Available in-water work window (unless an extension is obtained) is July 16th – April 30th.
- Serves 97 customers, 74 of which are along the reach.

Sub-basin MEY_A

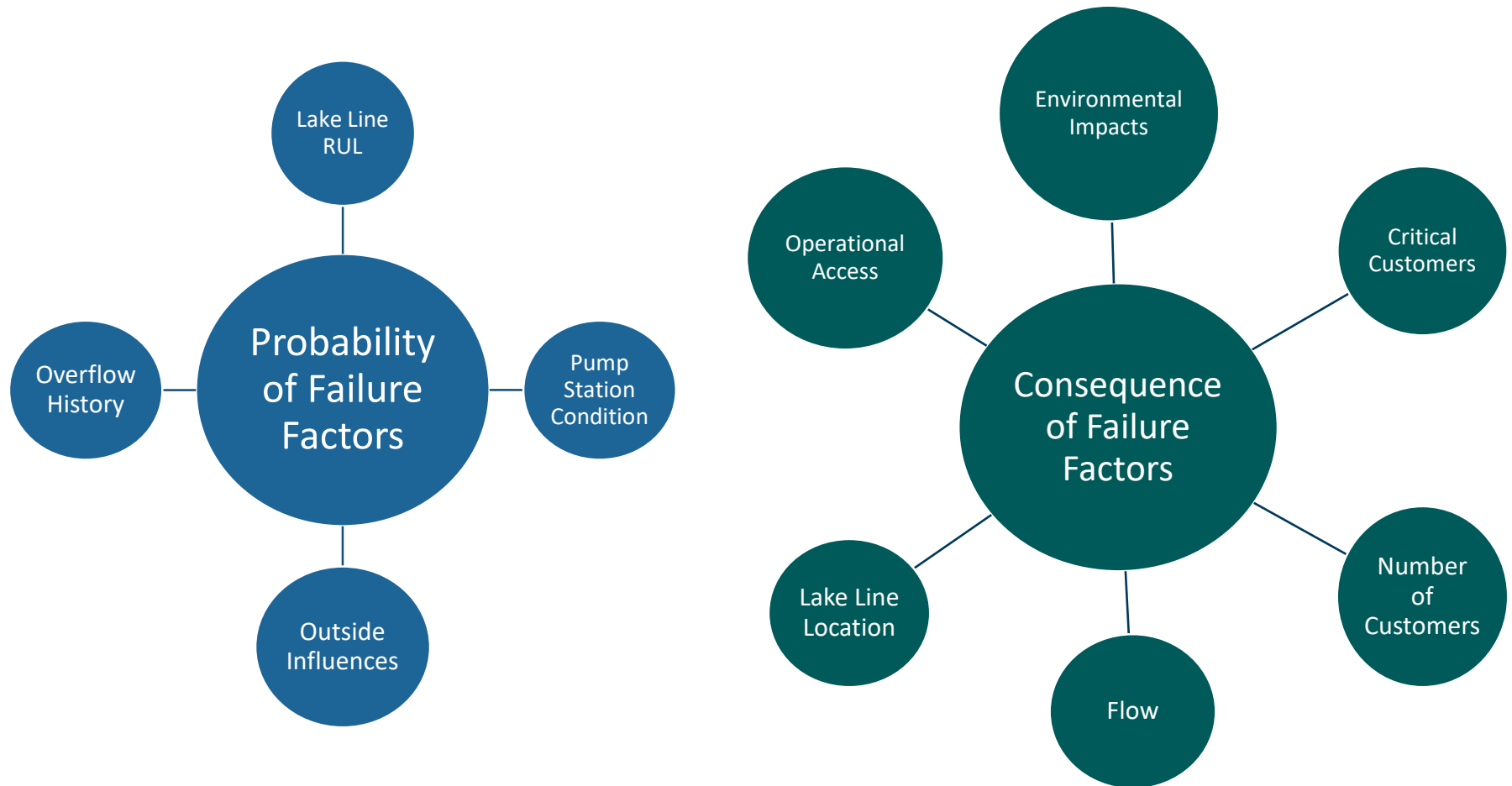
of Upstream Parcels: 69



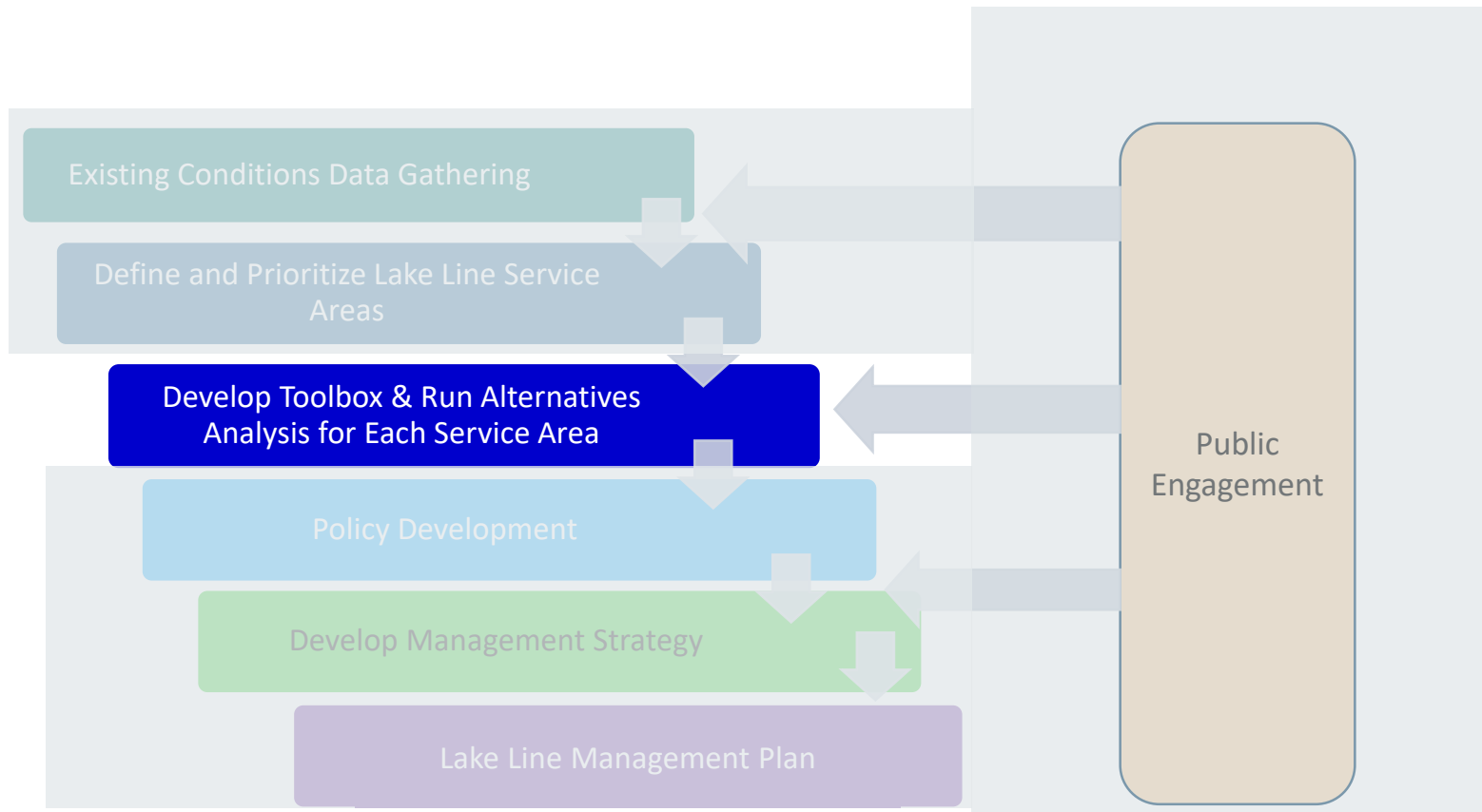
Expanded Quick Reference



Reach Prioritization for Future Projects



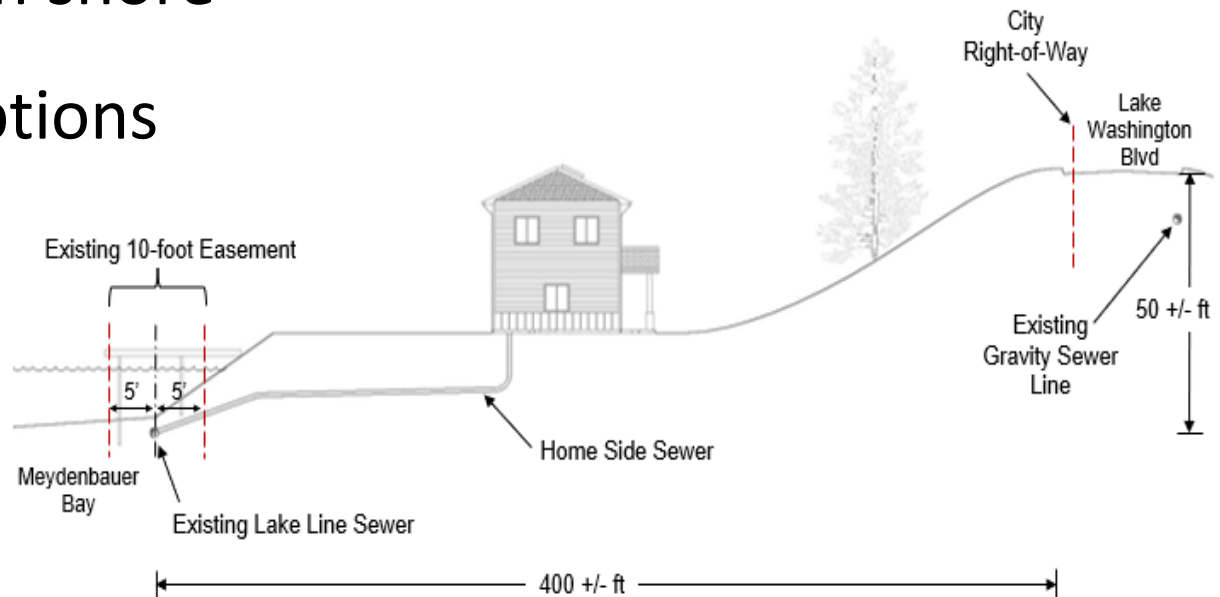
Develop Toolbox Options



Project Options (Toolbox)

Three Main Options Per Reach:

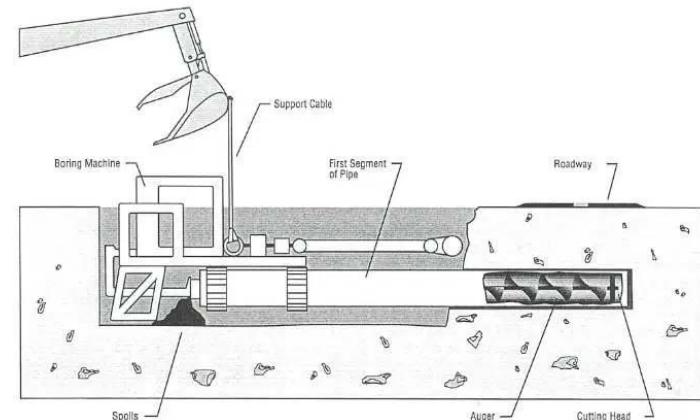
- Options within the lake
- Options on shore
- Upland options



Potential Options within the Lake



Gravity Sewer Line via Open Cut Construction



Gravity Sewer Line via Trenchless Technology



Cured-in-Place Pipe (CIPP)

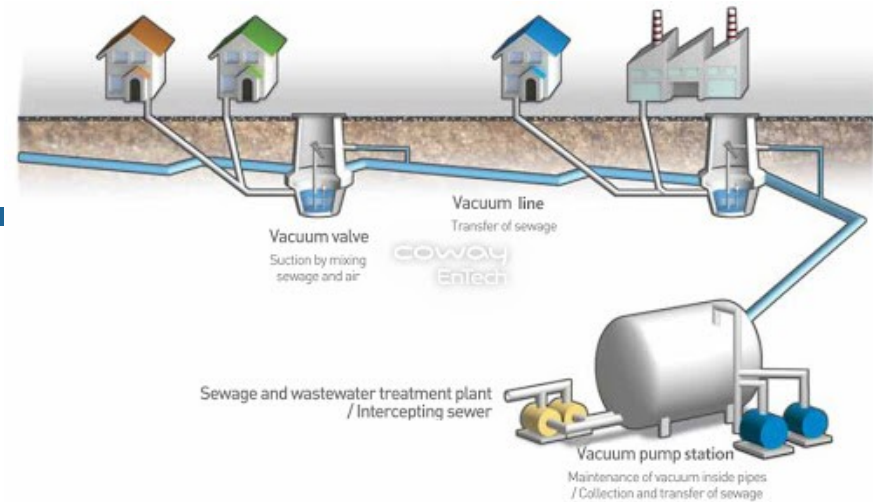


Pipe Bursting

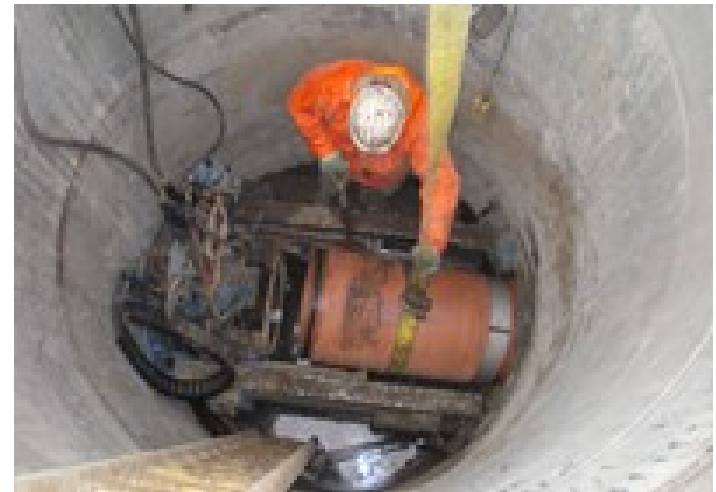
Potential Options On Shore



Gravity Sewer Line via Open Cut Construction



Vacuum Sewers

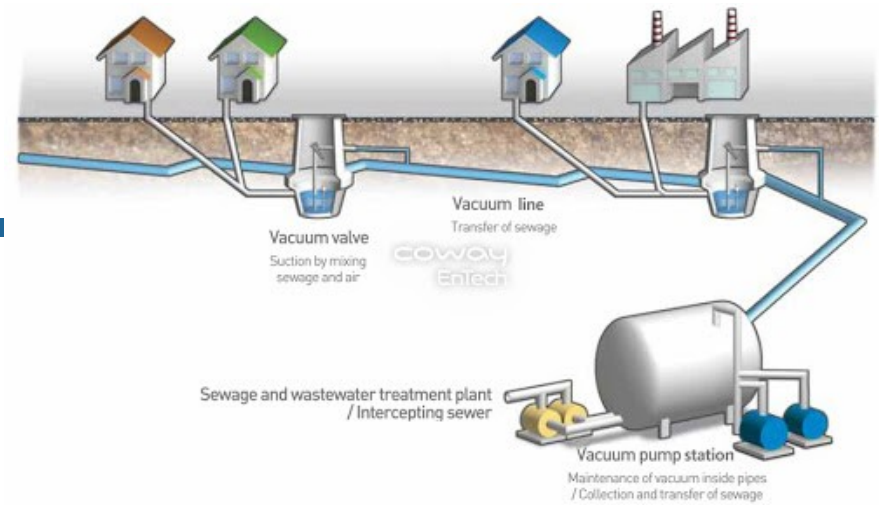


Gravity Sewer Line via Trenchless Technology

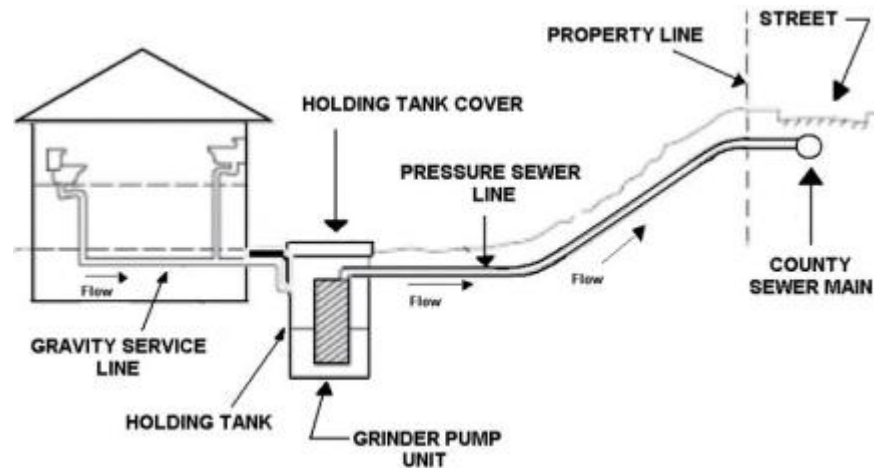
Potential Upland Options



Gravity Sewer Line

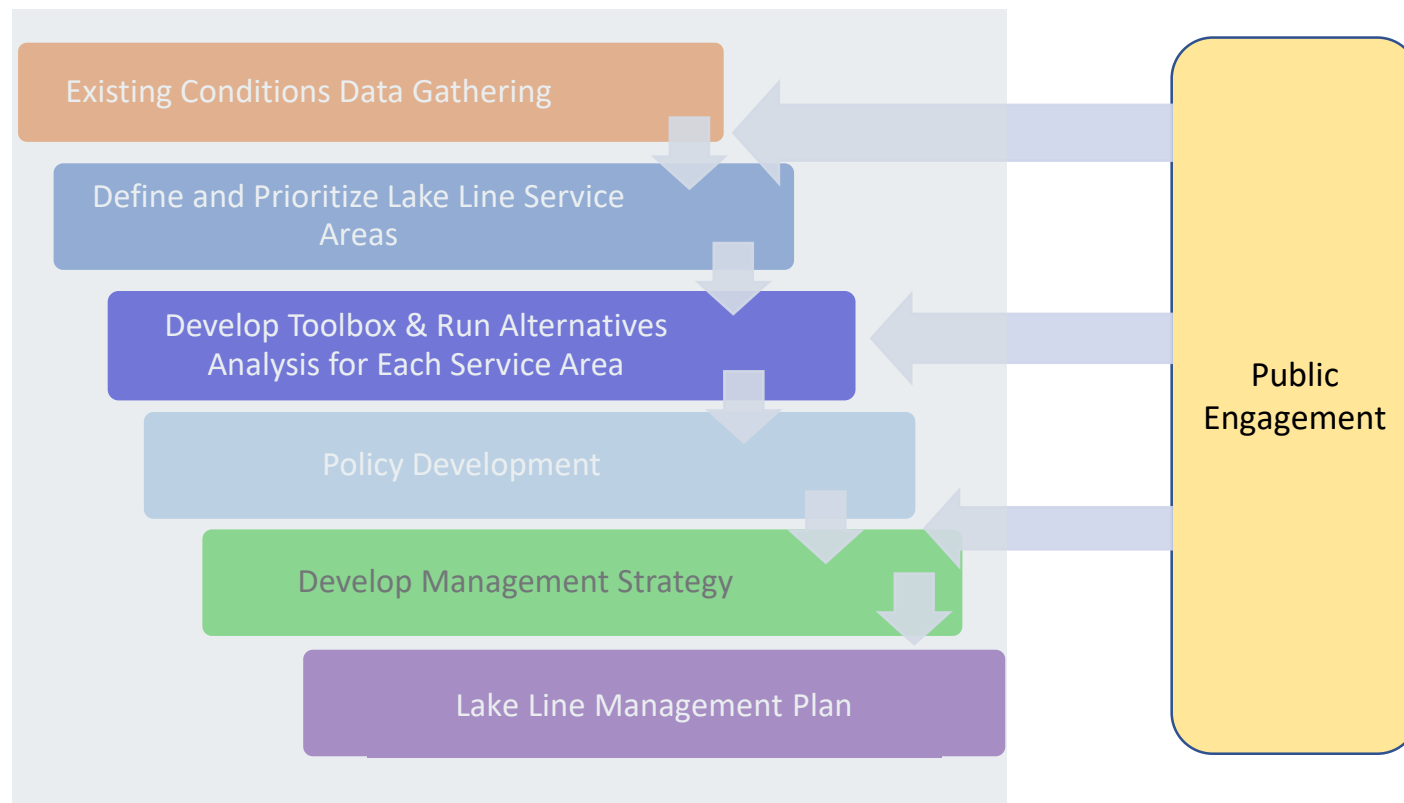


Vacuum Sewers



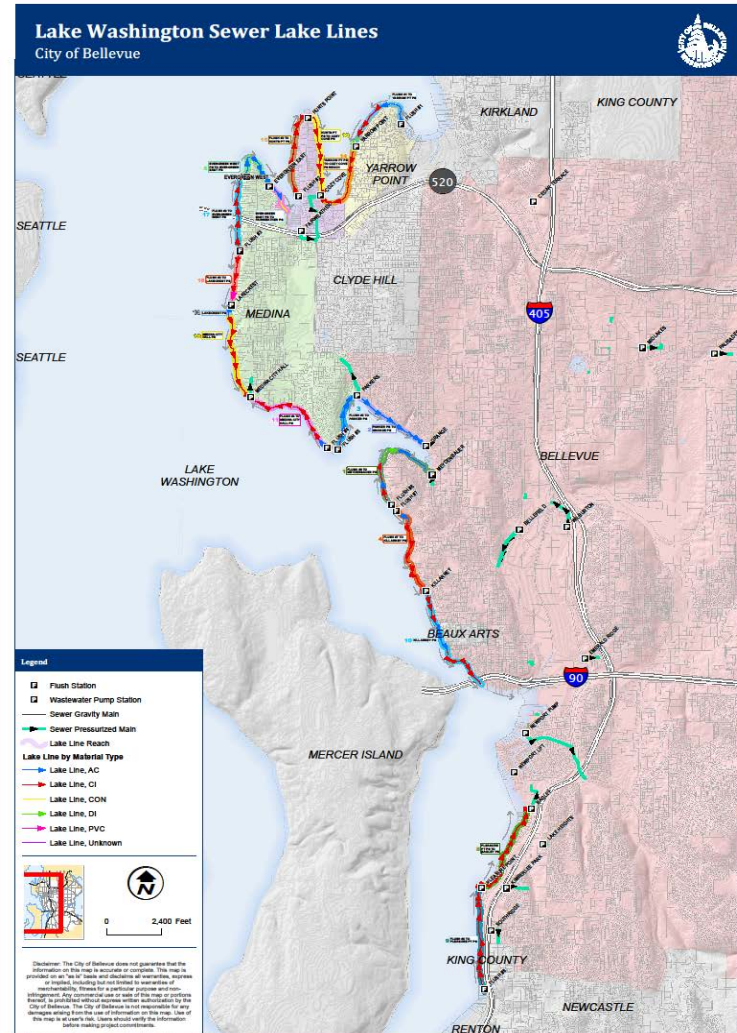
Grinder Pumps

Public Engagement

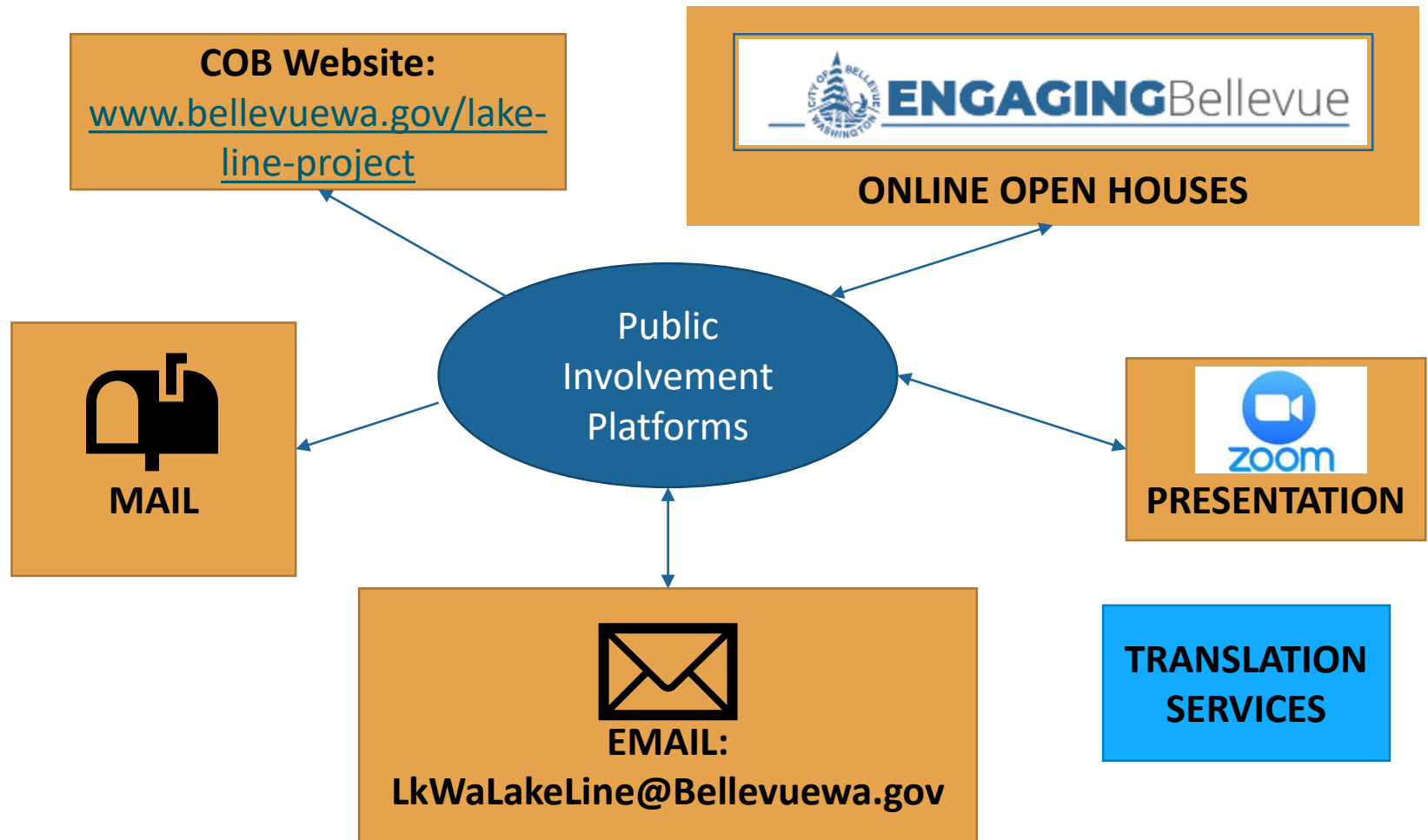


Community Engagement

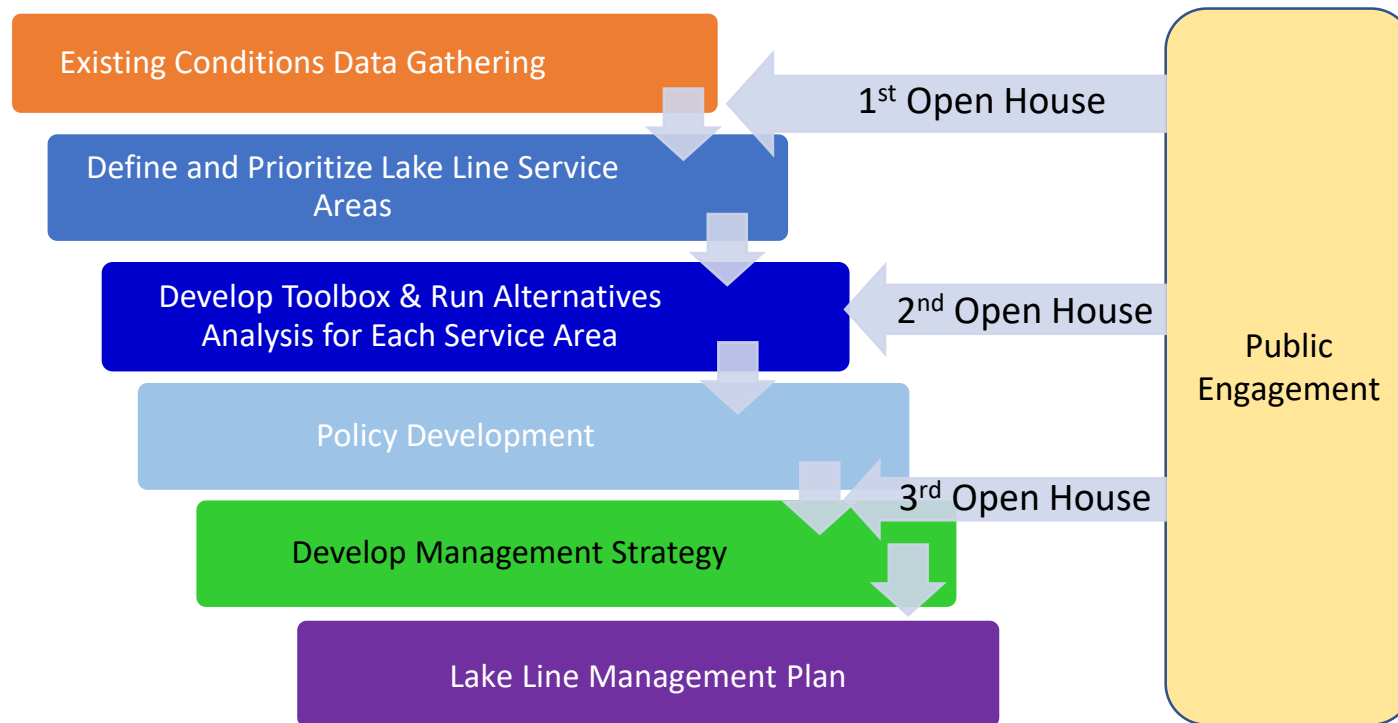
**Yarrow Point
Hunts point
Medina
Bellevue
Beaux Arts
Unincorporated King
County**



Public Involvement Plan – Engagement Platform



Public Engagement



Lake Line Multi-Agency Workshops

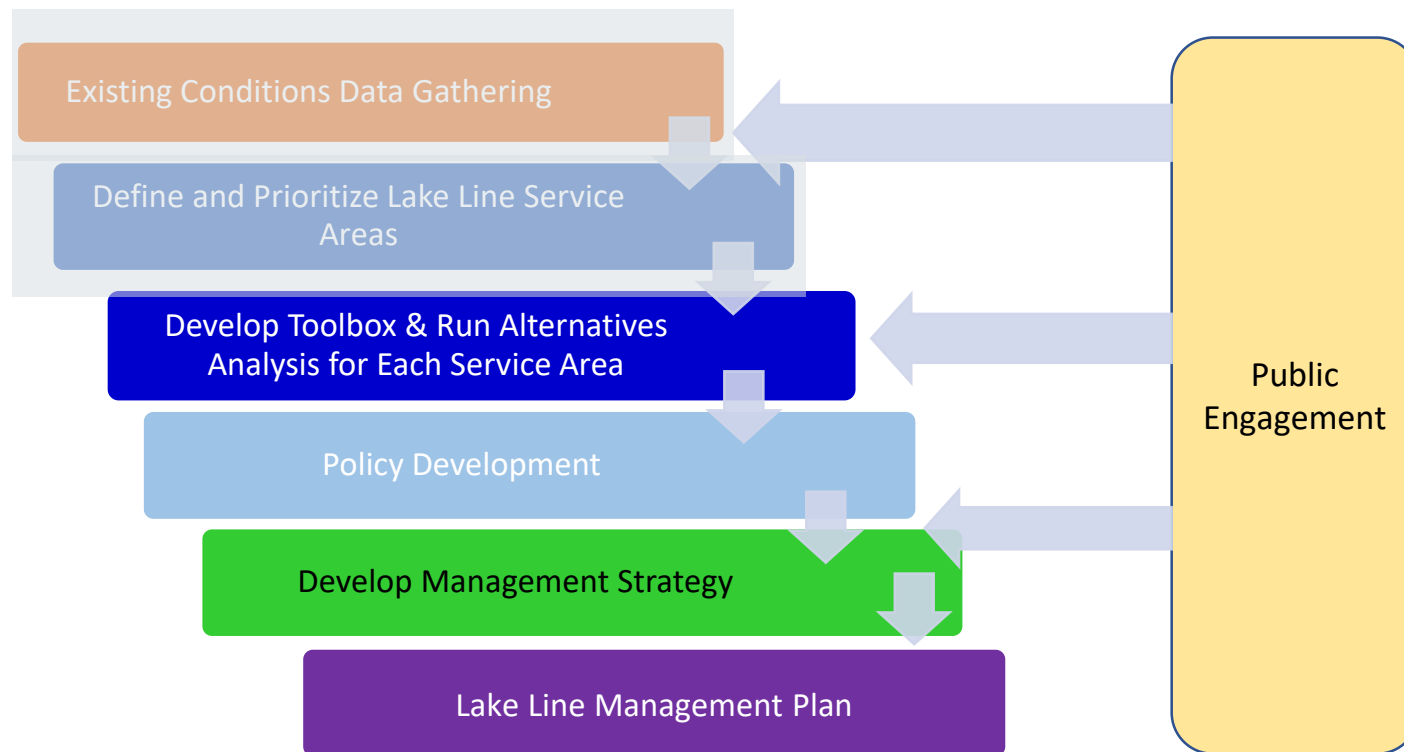


- Three workshops
- 30-60 people attended from 12 agencies
- Presentations:
 - King County Operations and Maintenance
 - Bremerton's Beach Sewers to Grinder Pumps
 - Lake Oswego Interceptor Sewer (LOIS) The Floating Sewer

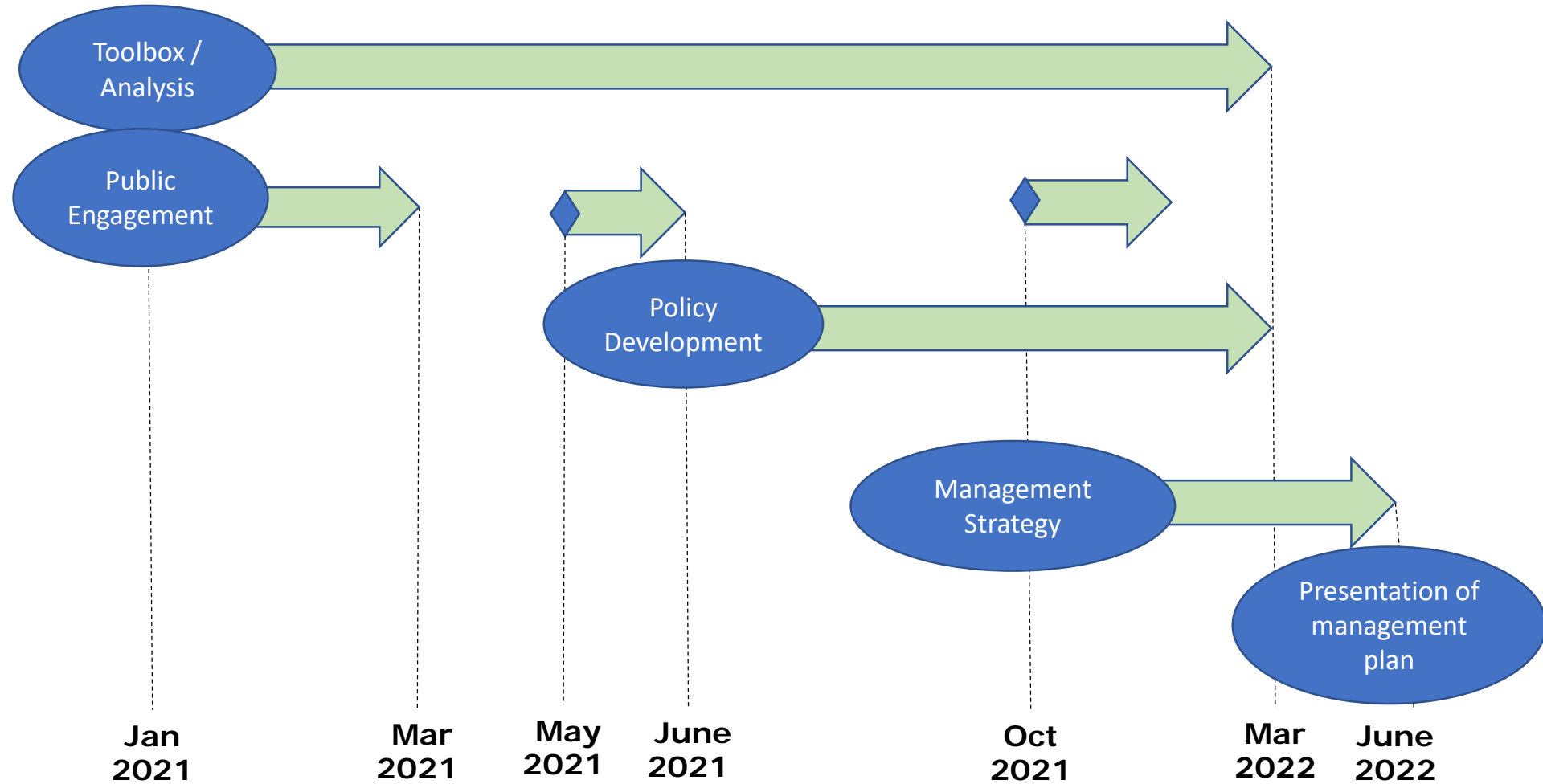
Participating Agencies: Bellevue, Redmond, Renton, Bremerton, Skyway, Sammamish, Shoreline, Seattle, Mercer Island, Edmonds, Everett, King County, Lake Oswego



Remaining Project Tasks



Future: Project Schedule



Questions?



END

