

WASTEWATER TREATMENT DIVISION

Project Updates

Presented to MWPAAC

May 28, 2013

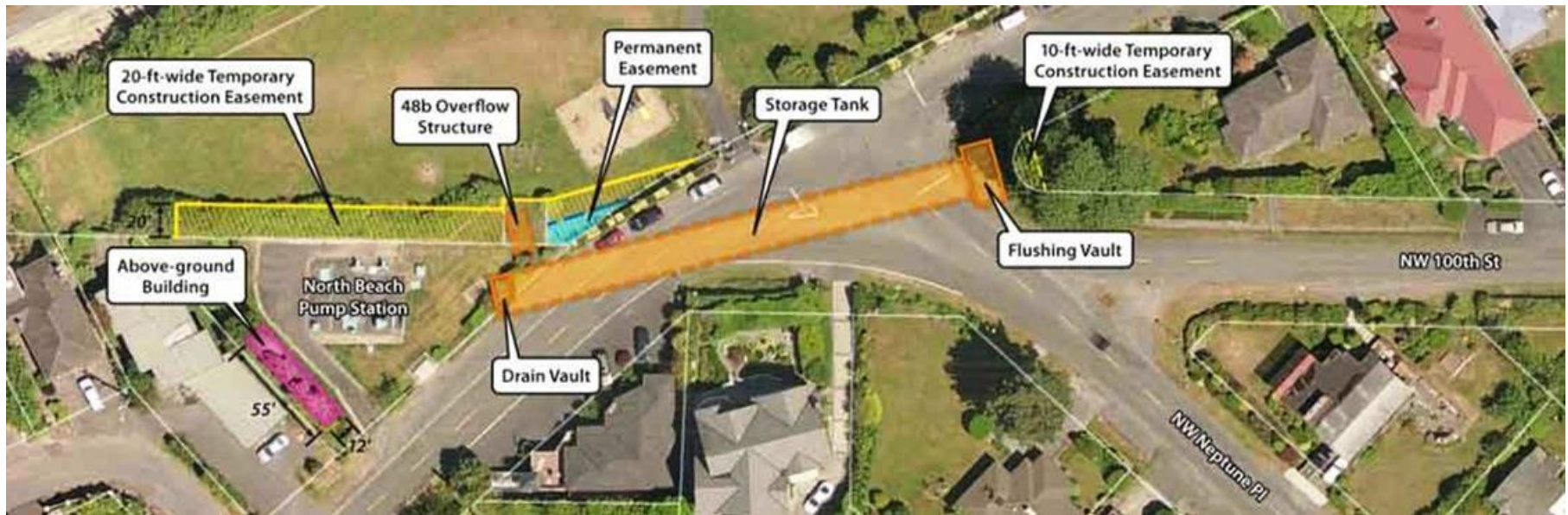
Presentation Overview

Overview of sample capital projects

- ▶ Protecting our Waters projects
 - North Beach CSO
 - South Magnolia CSO
 - Murray CSO
 - Barton GSI
- ▶ Conveyance and pump station improvement projects
 - Sunset/Heathfield Pump Station
 - 63rd Avenue Pump Station Flap Gate
 - North Mercer/Enatai Interceptor Upgrades
 - Lake Hills
 - North Interceptor Bifurcation Structure
 - Bubblers
 - Black Diamond Air Gap
- ▶ Treatment projects
 - Beulah Cove Drip Field
 - West Point Screenings

North Beach CSO Project

- ▶ Purpose – Improve water quality and complete commitments to CSO control
- ▶ Constructing 325 feet of pipe storage – 0.33 million gallons (MG)
- ▶ Construction 5% complete
- ▶ Substantial completion August 22, 2015
- ▶ Construction contract \$9.6m





Contractor trailer mobilized within the pump station perimeter.



One way traffic bypass around project location installed by Sound Transit

South Magnolia CSO Project

- ▶ Purpose – Improve water quality and complete commitments to CSO control
- ▶ 1.8 MG storage tank, 2700 ft gravity pipeline
- ▶ Construction 2% complete
- ▶ Substantial completion October 23, 2015
- ▶ Construction contracts: Storage \$12.5m, pipeline \$9.4m



S Magnolia Conveyance Alignment



Murray CSO Project

- ▶ Purpose – Improve water quality and complete commitments to CSO control
- ▶ 1 MG storage tank
- ▶ Construction 10% complete
- ▶ Substantial completion August 31, 2016
- ▶ Construction contract \$20.8m

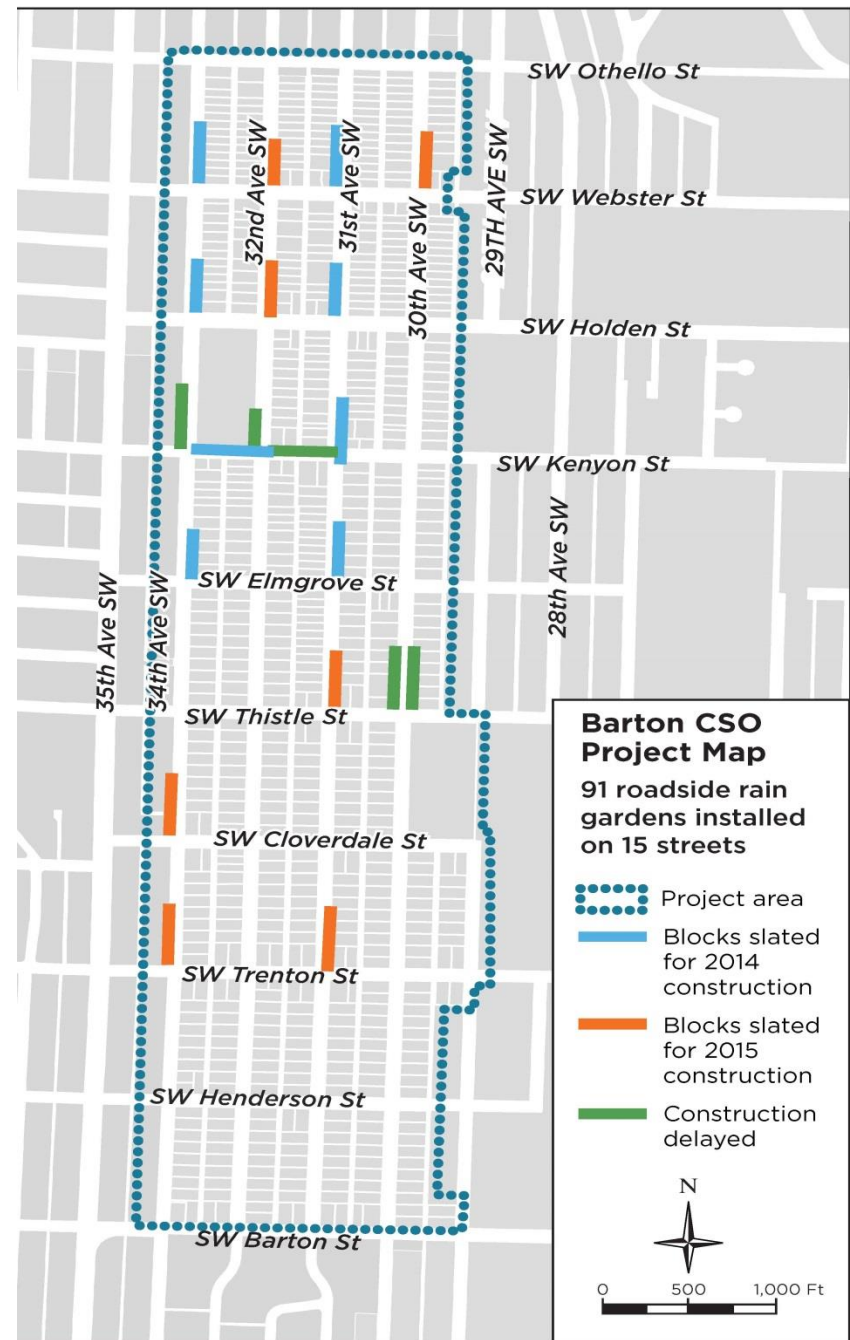


Checking secant pile casing for 'plumbness' with a hand level.



Barton CSO GSI Project

- ▶ Purpose – Improve water quality and complete commitments to CSO control
- ▶ Removes 5.88 MG/year of flow from the combined sewer system
- ▶ Construction 5% complete
- ▶ Substantial completion November 30, 2015
- ▶ Construction contract \$5.5m



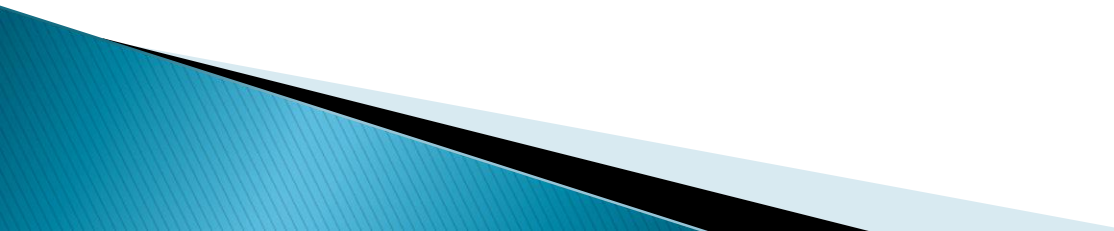


Barton GSI – Installation of swales



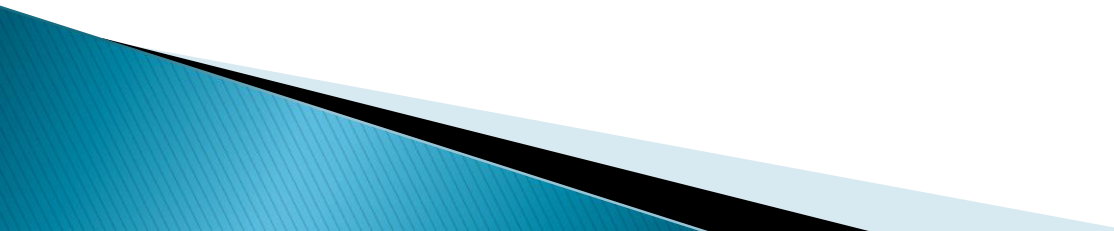
Landscaped
swales during
plant
establishment
period

Sunset/Heathfield Pump Station

- ▶ Project Purpose: Upgrade existing pump stations and forcemain capacity from 21 mgd to 30 mgd, improve station reliability. Increased pumping capacity to meet growth projections and improve reliability in conveying S. Lake Sammamish basin flows to South Plant.
 - ▶ Alternative Selected: Construct two separate pump stations with four single stage pumps at each facility
 - ▶ Schedule: Baseline 4th Qtr 2014, construction start 2nd Qtr 2016, substantial completion 2nd Qtr 2019
 - ▶ Total Project Cost: \$90 million
 - ▶ Agency Coordination: City of Bellevue, Army Corps, USFWS, WDFW, Ecology, DAHP, WSDOT
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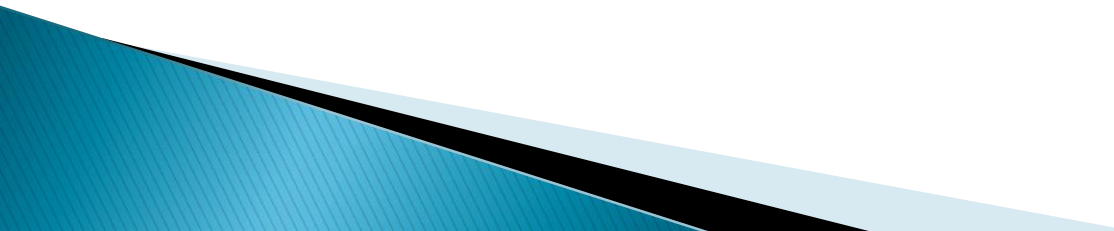
63rd Ave. Pump Station Flap Gate

- ▶ Project Purpose: Prevent seawater from entering the pump station wet well during high tides. Reduce volume of seawater pumped to West Point and reserve wet well capacity for combined sewer flow.
 - ▶ Alternative Selected: Install flap gate on overflow pipe
 - ▶ Schedule: Construction August – October 2014
 - ▶ Total Project Cost: \$286,000
 - ▶ Agency Coordination: City of Seattle
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63rd Ave. Pump Station



North Mercer/Enatai Interceptor Upgrades

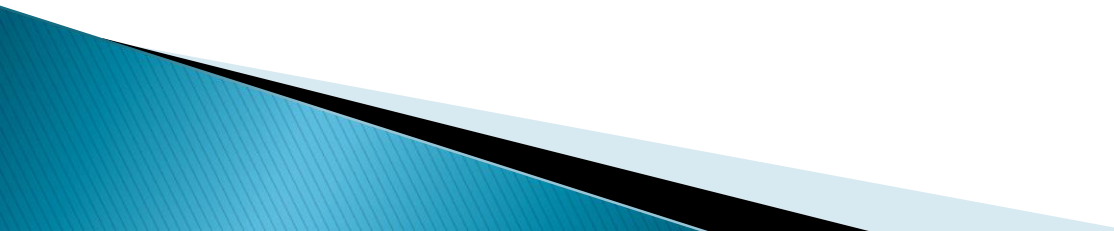
- ▶ Project Purpose: Increase capacity in the North Mercer Island and Enatai Interceptors to meet the 20-year peak flows projected through 2060. Reduces the potential for sanitary sewer overflows.
 - ▶ Status: Alternative analysis
 - ▶ Schedule: Baseline 1st Qtr 2016, construction 2019, substantial completion 2022
 - ▶ Total Project Cost: \$64M
 - ▶ Agency Coordination: Cities of Bellevue, Beaux Arts and Mercer Island, Ecology, WSDOT, Parks (Luther Burbank Park, Enatai Beach Park, and Mercer Slough Nature Park), Sound Transit, Tribes
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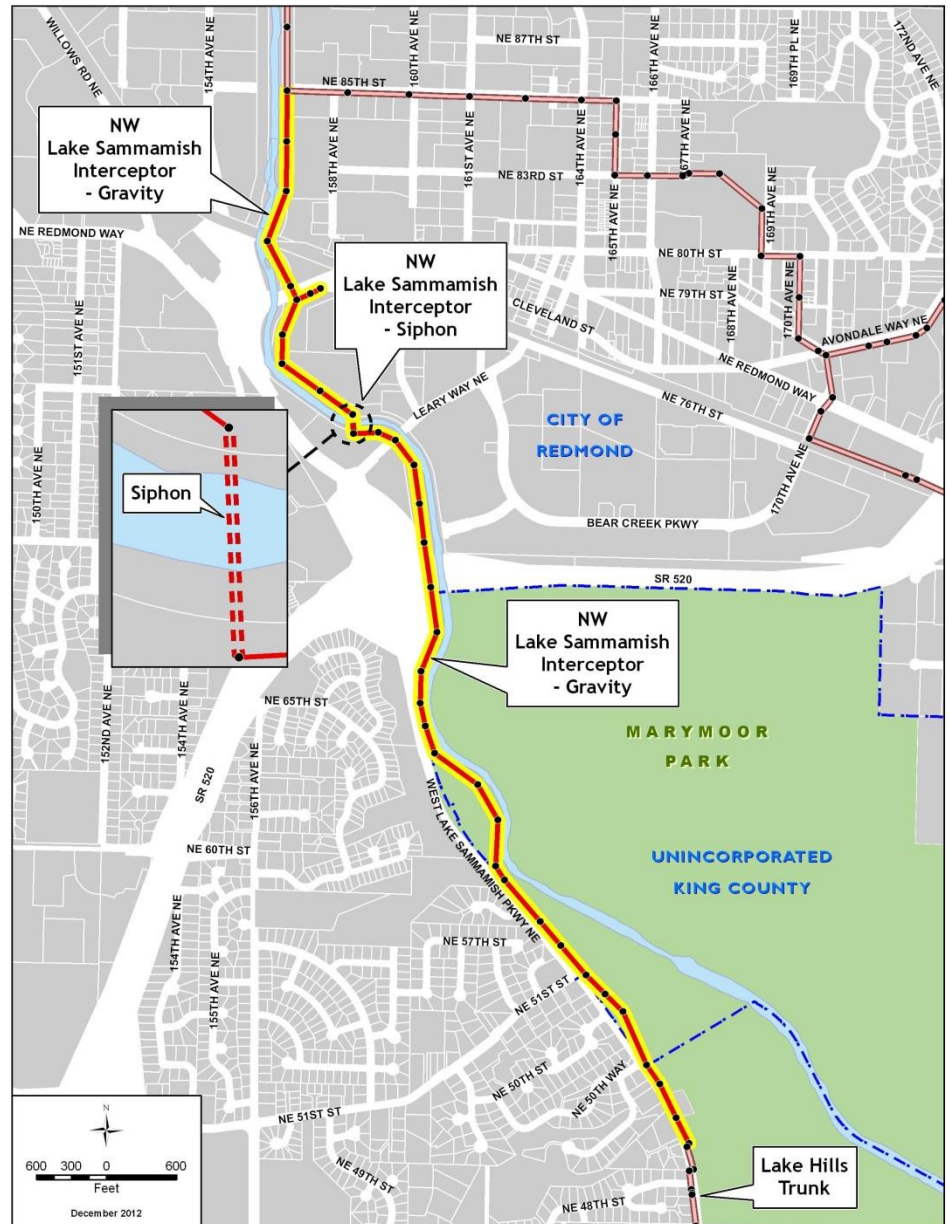


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File Name: Q:\WTD\Projects\N Mercer Enatai\Projects\N Mercer Enatai Interceptors_Map3.mxd
Date Source: KC-WTD GIS, December 11th, 2012

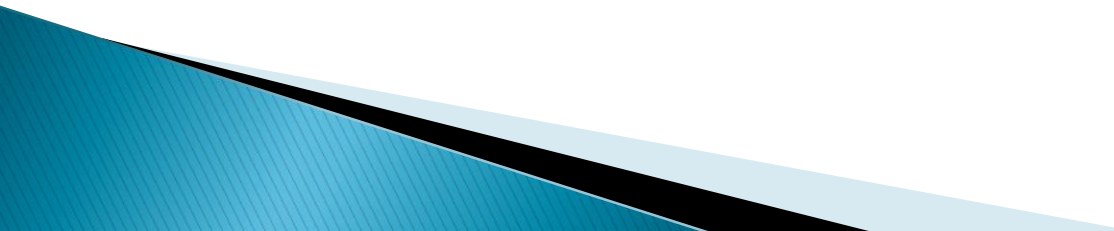
North Mercer Island Interceptor and Enatai Interceptor Upgrade Project Vicinity Map

Lake Hills Trunk

- ▶ Project Purpose: Increase capacity of the 4.5 mile Lake Hills Trunk and NW Lake Sammamish Interceptor to convey 20-year peak flows projected through the year 2060. Also improves reliability – this is the oldest pipe in the system (1959)
 - ▶ Project status: Alternative analysis
 - ▶ Schedule: Baseline 1st Qtr 2016, construction 2018
 - ▶ Total Project Cost: Planning level estimate \$47M – \$94M
 - ▶ Agency Coordination: Cities of Redmond and Bellevue and King County Parks (Marymoor Park)
- 



Beulah Park Drip Field

- ▶ Project Purpose: Improve the community wastewater septic drain field on Vashon Island. Ensures service for 60 homes, eliminates surface ponding and permit violations, and improves water quality.
 - ▶ Alternative Selected: Replace the drip irrigation drain system
 - ▶ Schedule: Baseline 3rd Qtr 2014, construction 2nd Qtr 2015, substantial completion Oct 2015
 - ▶ Total Project Cost: \$700,000
 - ▶ Agency Coordination: King County Health Dept. and DDES.
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Beulah Park Wastewater Treatment System



This drain field is in your care.

This drain field is a delicate part of an expensive wastewater treatment system that is paid for by the residents it serves.



Do: Enjoy the community green space for passive recreational uses like walking and sitting by Beulah Park residents.




Don't: Do anything that could puncture the surface of the drain field (like dig, drive stakes, wear shoes with cleats, play team sports, bike or plant anything). Grass has been planted on the drain field and is the best cover. King County mows the grass periodically.

Help keep ivy and other plants from invading the drain field. Keep the plants on your property under control and off the drainage field! Maintain vegetation to prevent encroachment of trees, shrubs and invasive weeds whose roots may clog the drain field.

Report problems. Odors, wet spots in dry weather or exposed pipes may be an early sign of a problem. Report any problems by calling the King County 24-hour plant emergency number at 206-684-2404.

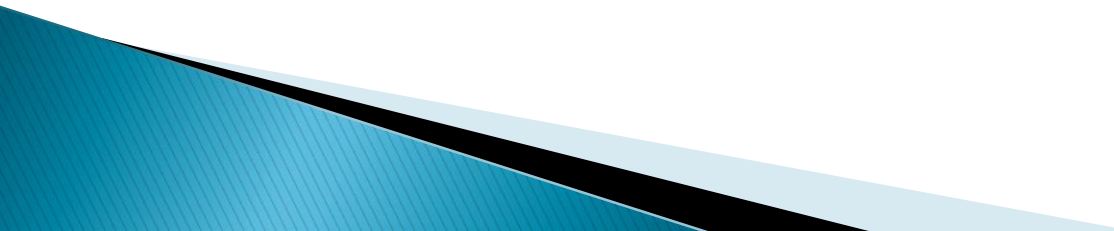
Dog etiquette on the drain field. If you let your dog on the drain field, be sure to scoop up the poop and dispose of it properly. Also, keep your dog from digging.

Thanks for helping to protect your community system.

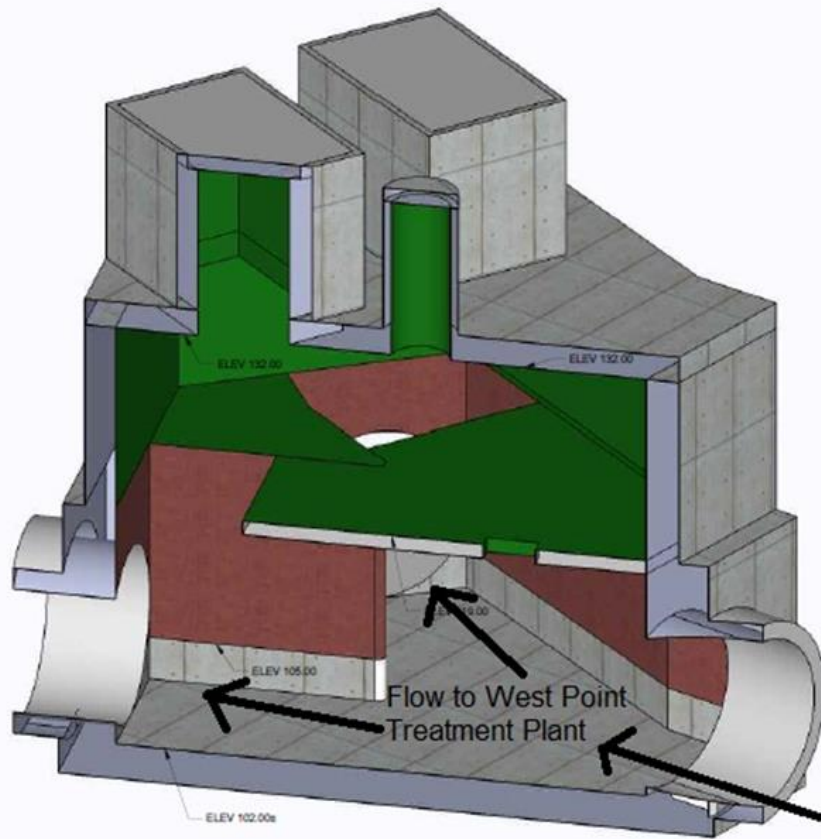
 King County
Department of
Natural Resources and Parks
Wastewater Treatment Division



North Interceptor Bifurcation Structure

- ▶ Project Purpose: Rehabilitate the flow splitting structure that conveys all flows to West Point. Extends the useful life of the flow structure and protects downstream assets.
 - ▶ Alternative Selected: Install new concrete lining system, replace lift slabs, grating, handrails and ladder
 - ▶ Schedule: Construction start June 2014, Substantial completion September 2014
 - ▶ Total Project Cost: \$1.4M
 - ▶ Agency Coordination: City of Seattle, DOT
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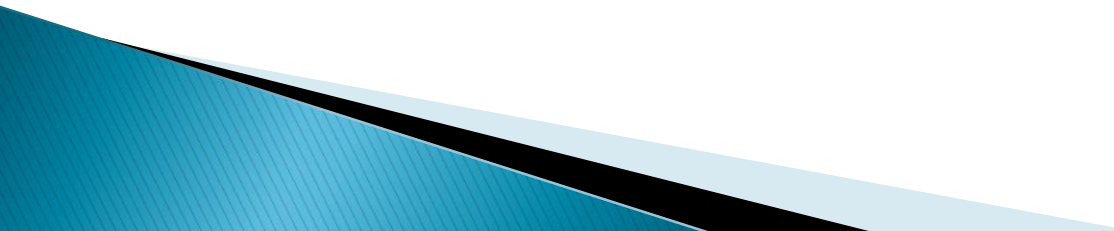
North Interceptor Bifurcation Structure



NORTH/EAST ISOMETRIC VIEW
SCALE: NTS

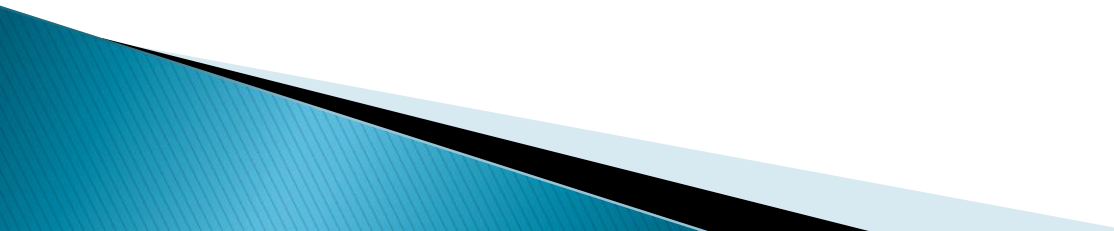


Bubbler Repairs

- ▶ Project Purpose: Repair or replace 8 aging bubbler level measuring devices. Improves the quality of data used to control and optimize system flows.
 - ▶ Alternative Selected: Combination of repair and replacement in-kind with existing bubbler technology.
 - ▶ Schedule: All work completed March 2014
 - ▶ Total Project Cost: \$850,000
 - ▶ Agency Coordination: City of Seattle, SDOT, WSDOT SR99 Contractor, CenturyLink, Seattle Parks Dept.
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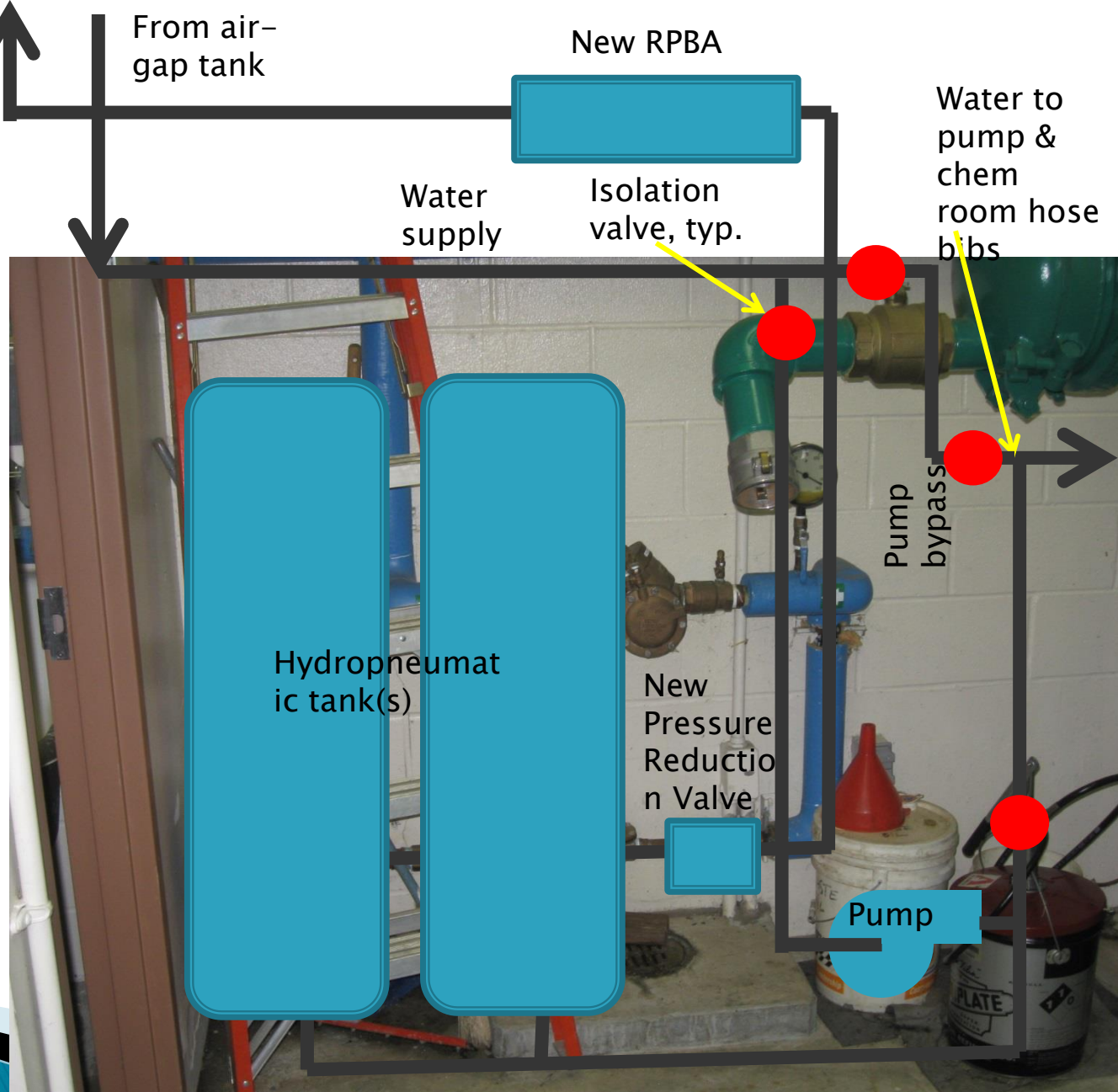


Black Diamond Air Gap Tank

- ▶ Project Purpose: Replace existing air gap tank to meet current code requirements Alternative Selected: Install an air gap tank and booster pump. Will prevent any potential for potable water contamination.
 - ▶ Install air gap tank on platform in generator room
 - ▶ Schedule: Construction August – October 2014
 - ▶ Total Project Cost: \$84,000
 - ▶ Agency Coordination: King County DDES
- 

Alternate – Pump Room North Wall Pump & Hydropneumatic Tank

- ▶ Relocate PRV, RPBA, & gages
- ▶ Need to maintain clearance for pig launcher



West Point Influent Screenings Improvements

▶ Project Purpose:

- Meet recent state biosolids regulations (WAC 173-308-205)
- Replace aging headworks infrastructure at West Point
- Improves biosolids quality and reduces downstream maintenance

▶ Project Status: Construction 80 percent complete Schedule: Construction started Feb 2013; substantial completion Oct 2014

▶ Project Budget: Baseline budget \$27,045,670; Estimate at completion \$22,975,857

Influent Screenings Improvements



New screenings handling building nearly complete



Washer-compactors and grinders (on mezzanine) in new screenings handling building



Electrical room for equipment in new screenings handling building

Influent Screenings Improvements



Bar screens to be replaced in the existing screenings building. New channel gates already installed in front of screens.



Successful transport and Installation of first new 3/8-inch bar screen

Questions?

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