

King County

recycledwater

the right water for the right use

Recycled Water Overview

2016 PNWS Conference - Boise



By:

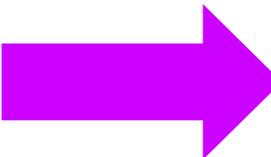
Jeffrey A. Lundt, P.E., Principal Wastewater Engineer
Kristina Westbrook, Recycled Water Program Manager



King County

Department of Natural Resources and Parks
Wastewater Treatment Division

Recycled Water



Recycle valuable resources &
Build a sustainable and resilient future



Terminology:

Recycled Water = Reclaimed Water = Reuse Water

Types of Water

- Drinking water
 - Highest quality water fit for human consumption
- King County Class A recycled water (RW)
 - Highly treated wastewater
 - Safe for many uses
 - Meets strict standards set by state law
 - No longer considered wastewater
- Graywater reuse (not RW)
 - Untreated non-toilet wastewater
- Rainwater harvesting (not RW)
 - Captured stormwater for irrigation



King County Recycled Water History

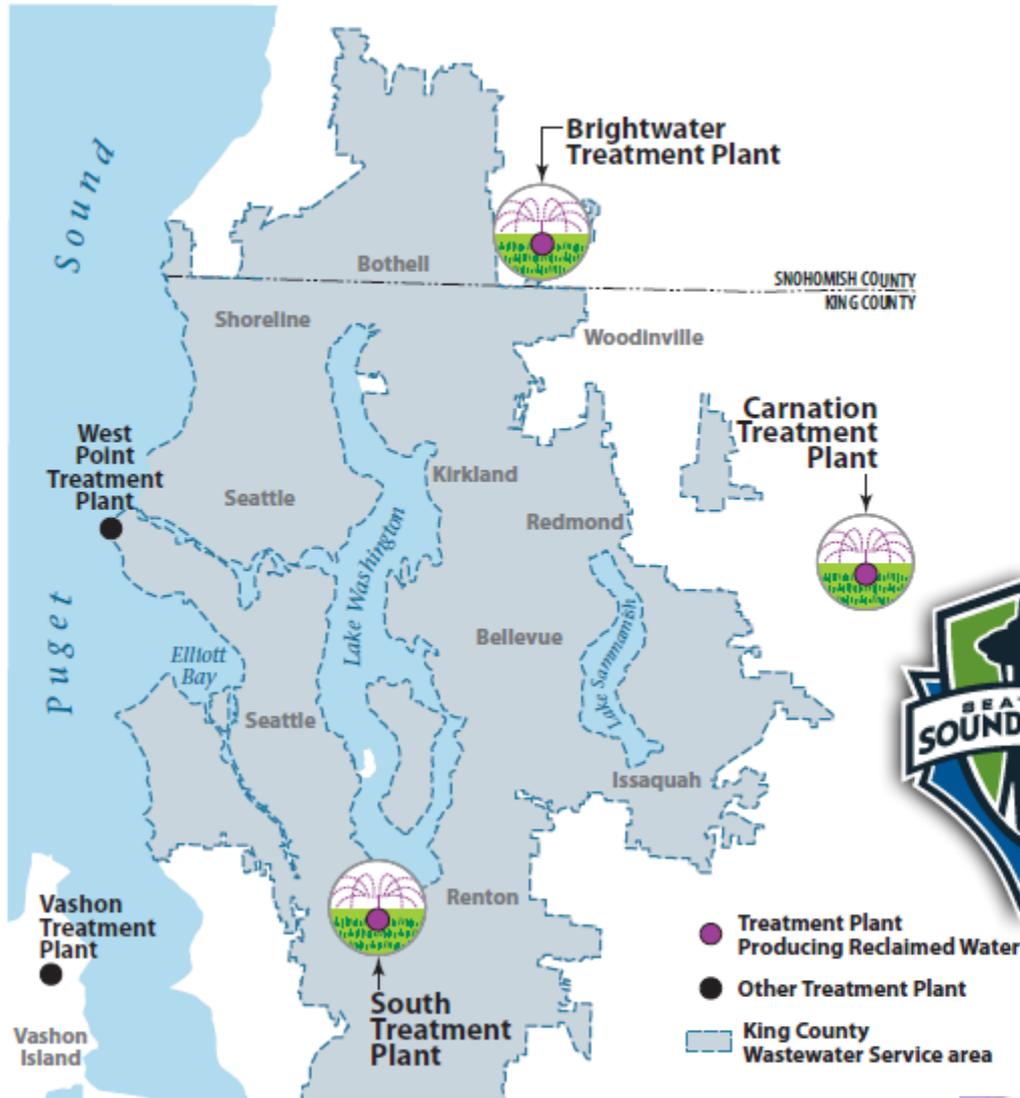
King County has been using recycled water since 1997

- South Treatment Plant (1997)
 - On-site processes
 - Street sweeping, sewer flushing
 - Soccer fields/landscaping irrigation
 - Building heating & cooling (plant effl.)
- Carnation Treatment Plant (2008)
 - Wetland enhancement
- Brightwater Treatment Plant (2013)
 - Landscape irrigation & soccer fields
 - Urinal/toilet flushing
 - Entrance sculpture
 - Golf course irrigation
 - Soon turf production



King County Recycled Water Facilities

KING COUNTY TREATMENT PLANTS PRODUCING RECYCLED WATER



Treatment Process

Brightwater & Carnation
WWTPs - MBRs



South Plant WWTP –
Activated Sludge w/
Filtration



Disinfection

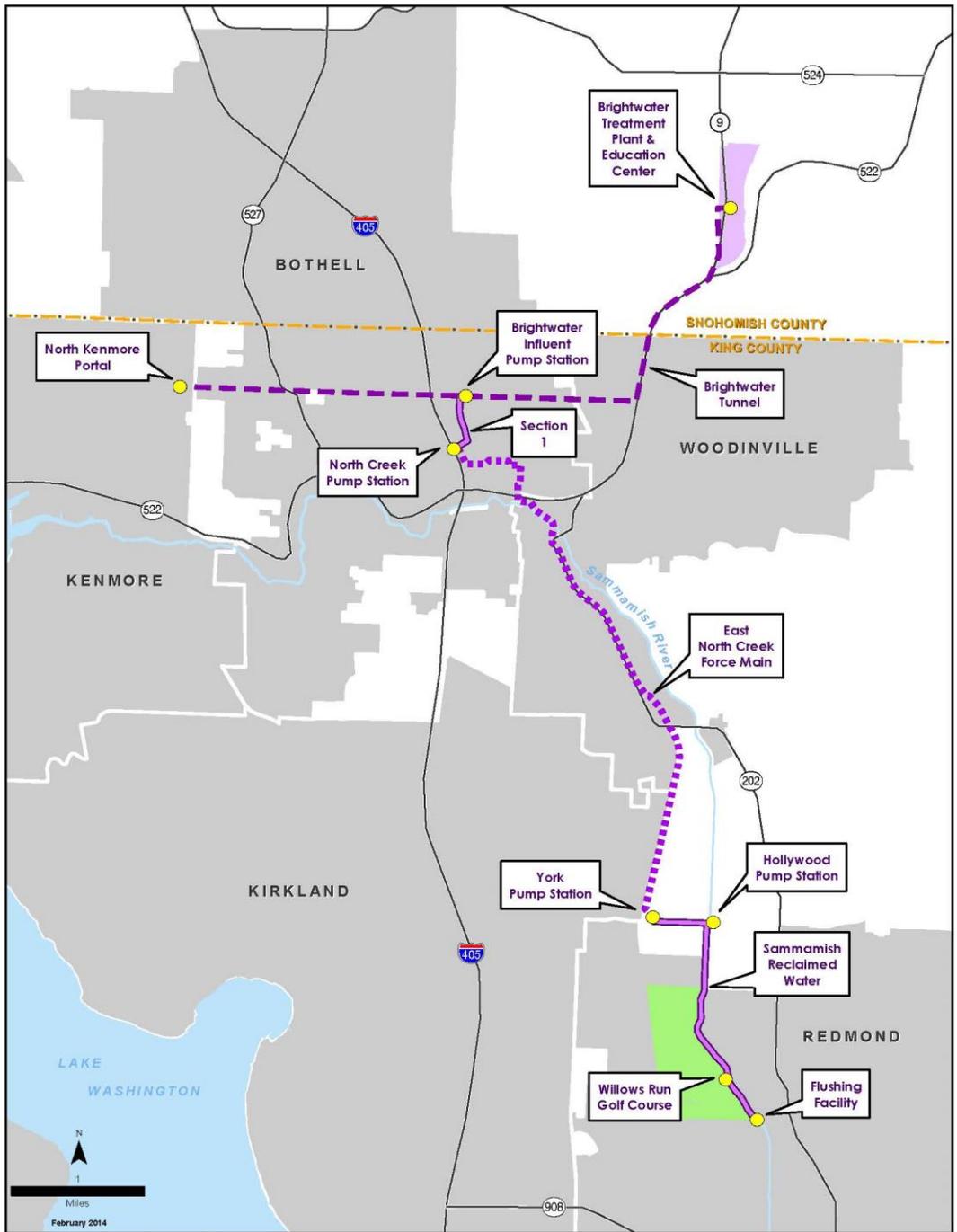
BW & SP
Hypochlorite

Carnation UV Closed Reactor



Carnation effluent
head tank



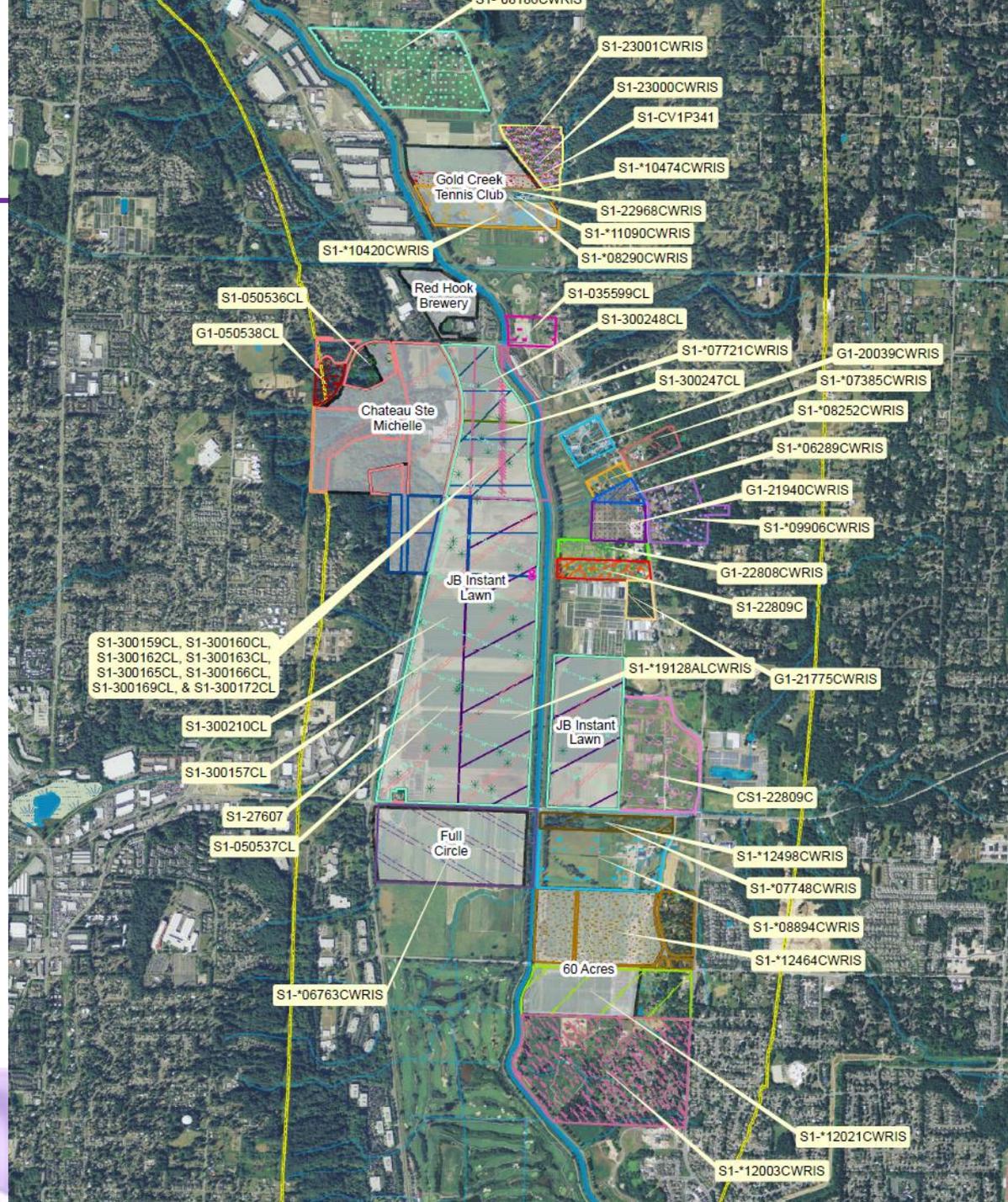


Brightwater Recycled Water Distribution System



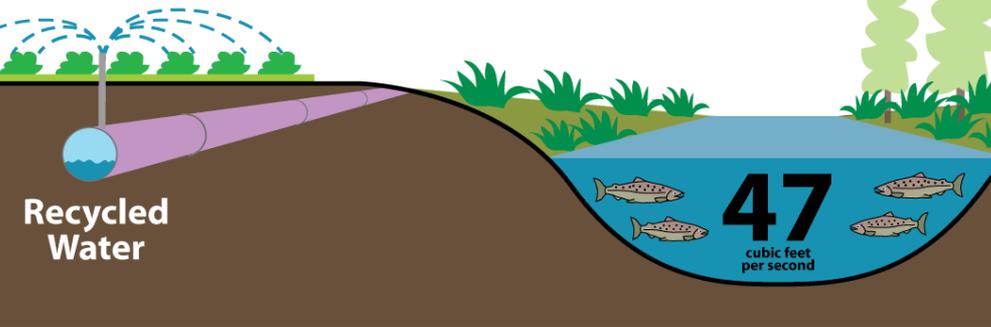
Sammamish Valley Irrigators & Water Rights

Source:
Department of Ecology

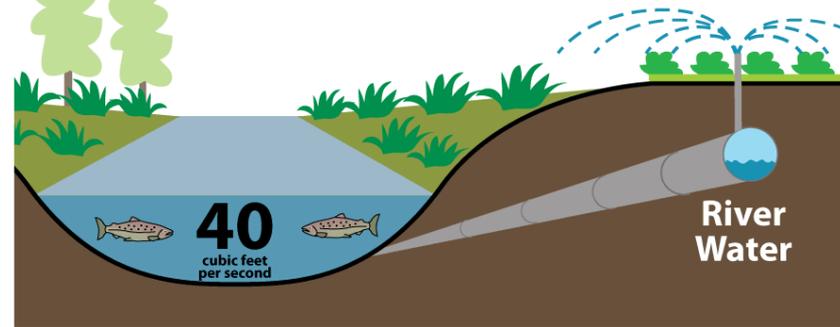


Irrigating with Recycled Water Leaves Water in the River for Salmon

Irrigating with Recycled Water



Irrigating with River Water



Substituting recycled water for ground and surface waters improves stream flow and conditions for fish.

More water in the river helps salmon by:



Willows Run Golf Course - 2014

Using recycled water at Willows Run Golf Course keeps about 45 million gallons of water in the Sammamish basin each summer



Willows Run Golf Course saves time and money by using Recycled Water.



Willows Run Golf Course became Salmon Safe certified after switching to recycled water. Learn more at salmonsafe.org

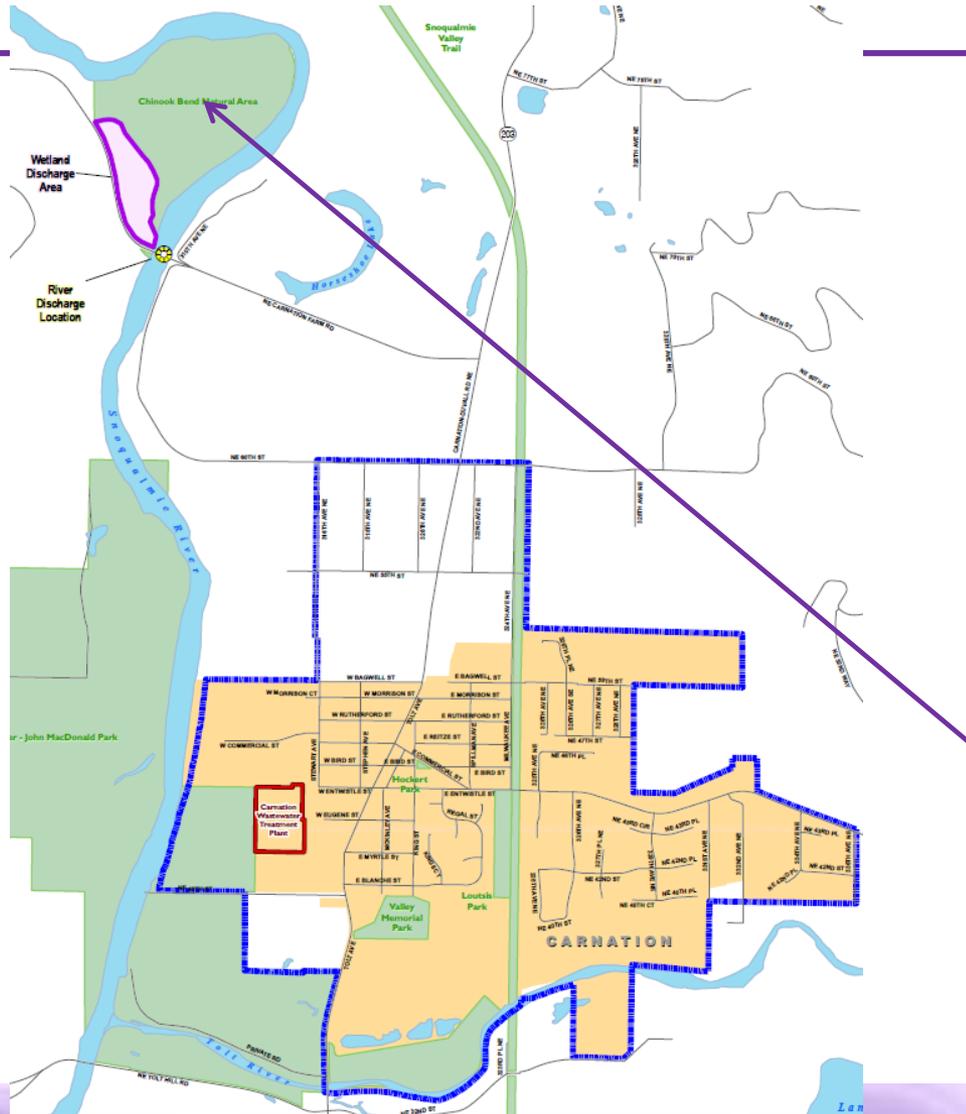
Sixty Acres Park switched to recycled water in 2015.



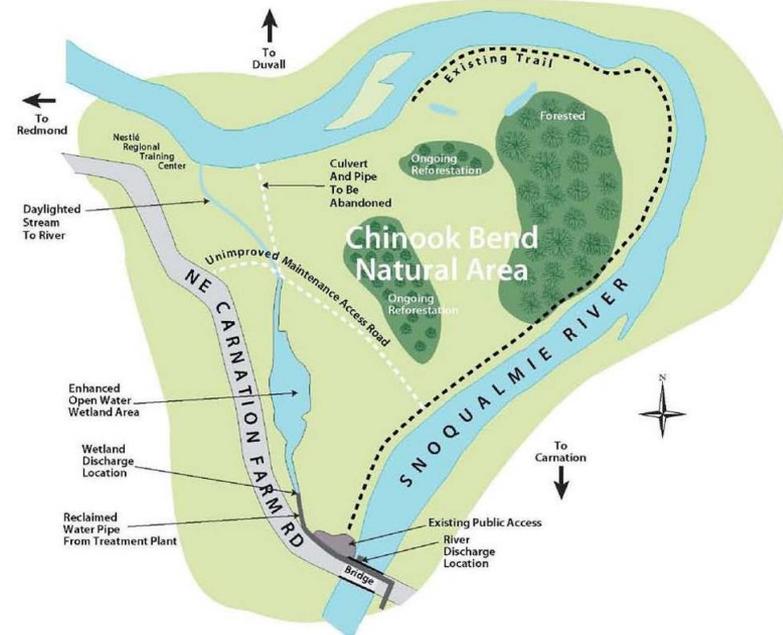
Sixty Acres Park, the largest soccer complex west of the Mississippi River, replaces river water with recycled water for irrigation in August of 2015.



Carnation Recycled Water Project- solving community challenges through partnerships.



Recycled Water is used for wetland enhancement at the Chinook Bend Wetland since 2008



Chinook Bend 8 years later...

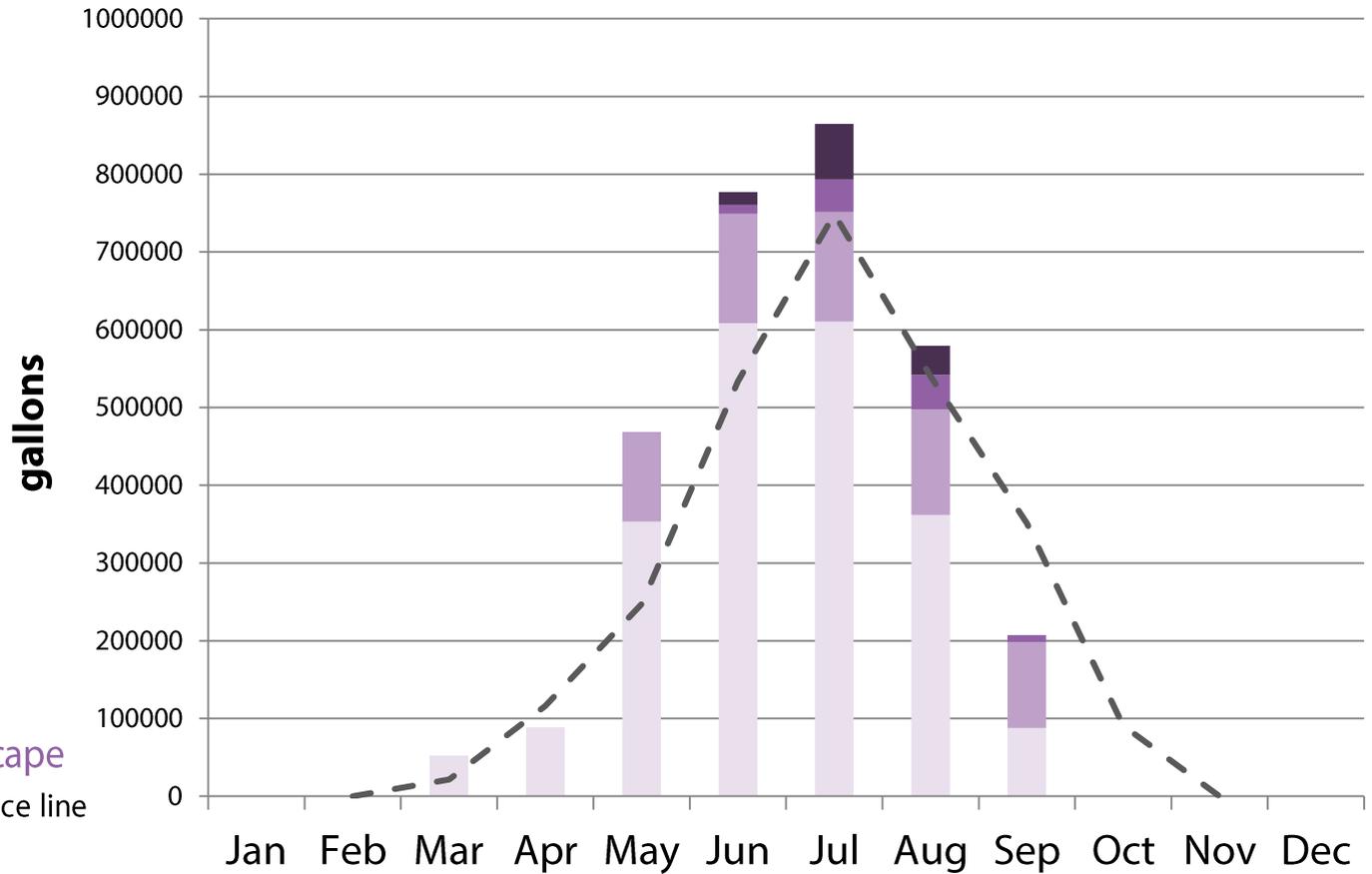


South Plant Reuse

Recycled water is distributed from South Plant to Tukwila and Renton



Monthly South Plant Offsite Usage



Irrigation- Landscape

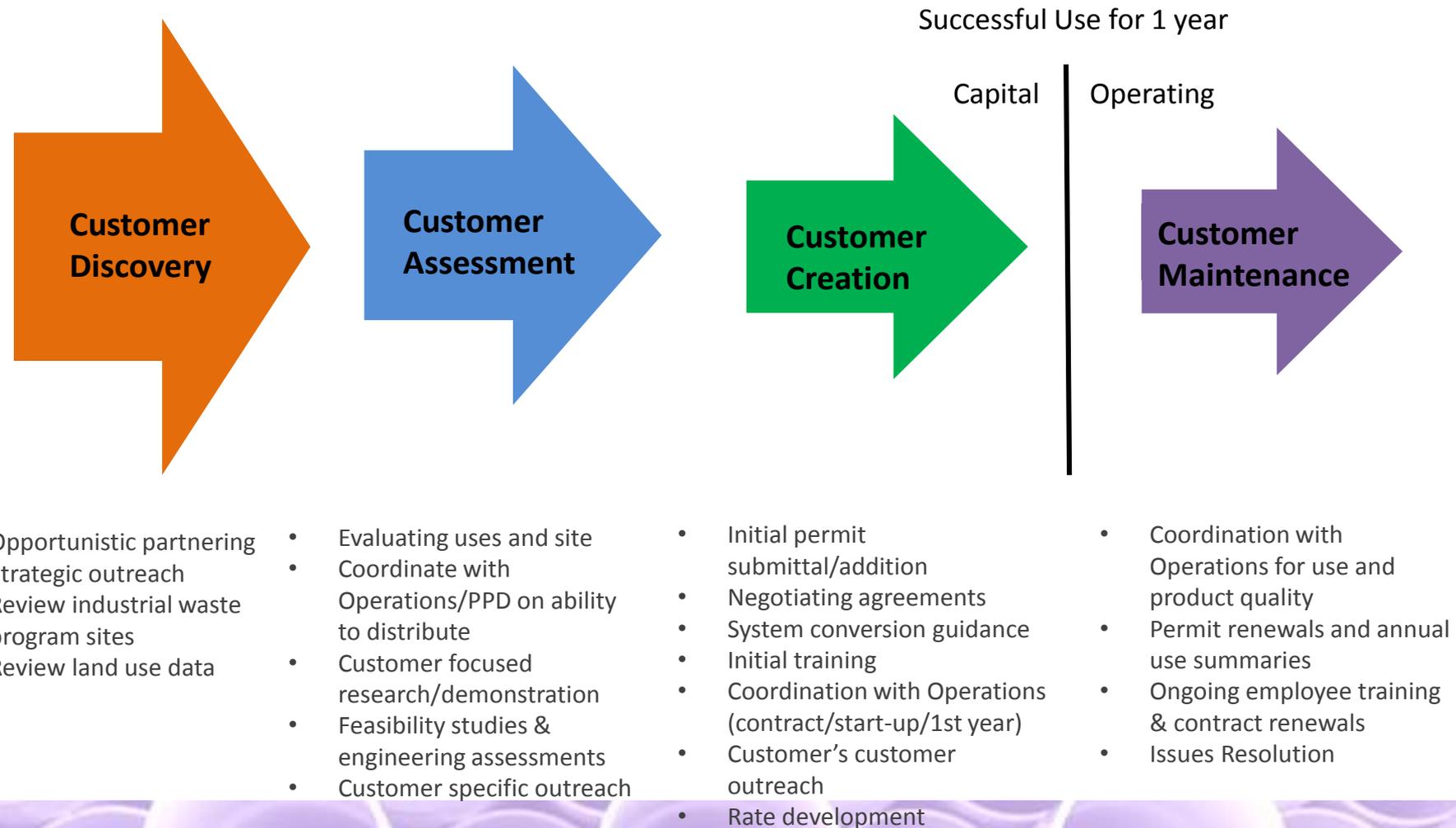
- STP- outside fence line
- Truck Haul
- KCD Nursery & Grady Way
- Starfire, Bravo, & Tukwila combined total

Municipal

- ~3% of Starfire, Bravo, Tukwila usage (not represented on chart)

2014 RW Distributed Offsite

There are *Four Customer Development Phases* for the Customer Development Dashboard

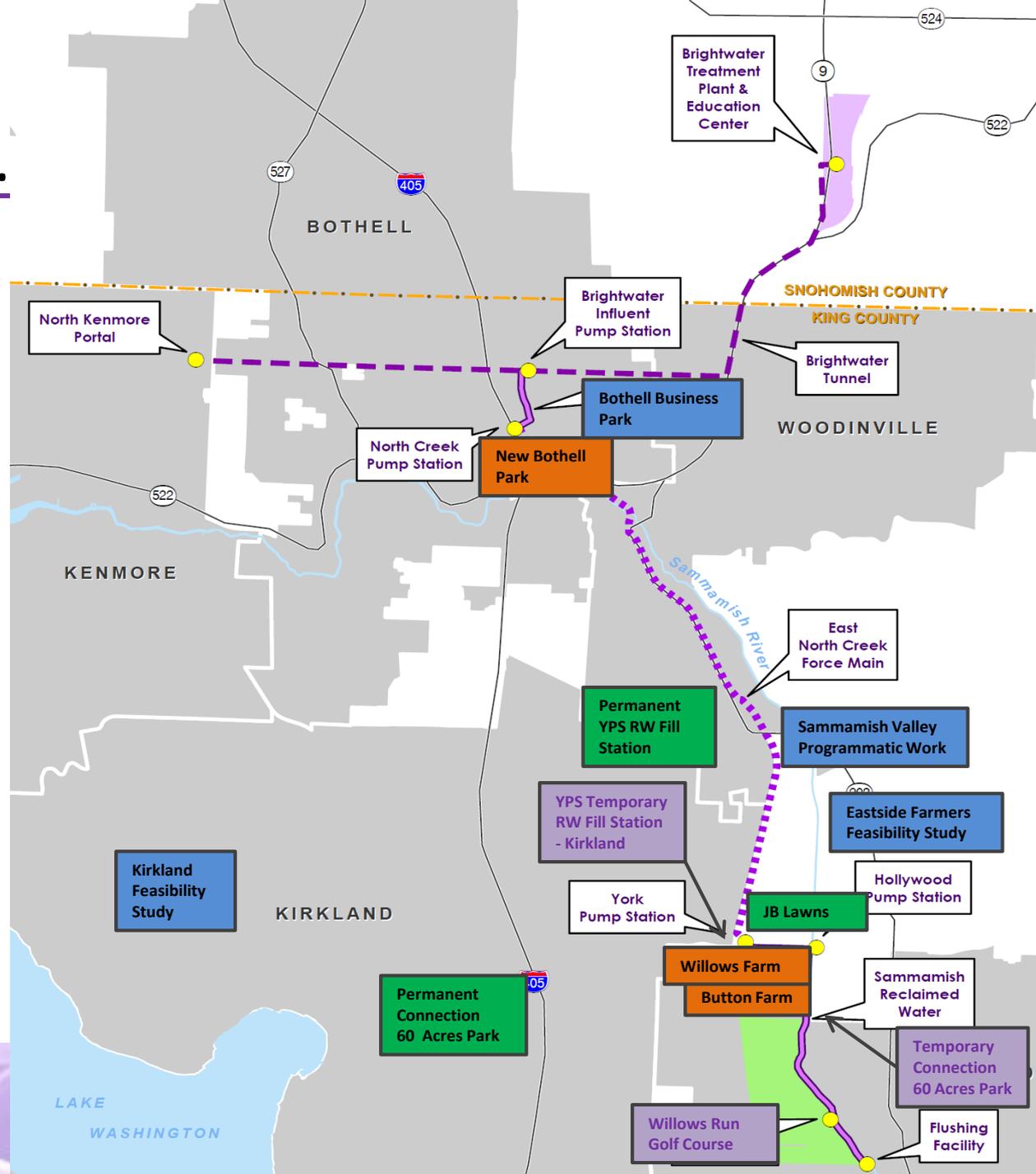


2016 Customer pursuits include...

- ➔ • New Bothell Park
- Button Farm
- Willows Farm

- ➔ • Kirkland Feasibility Study
- Eastside Farmers Feasibility Study
- Bothell Business Park
- Sammamish Valley Programmatic Work

- ➔ • Industrial cooling
- Auto dealerships
- Permanent YPS RW Fill Station
- JB Lawns
- Wetland enhancement

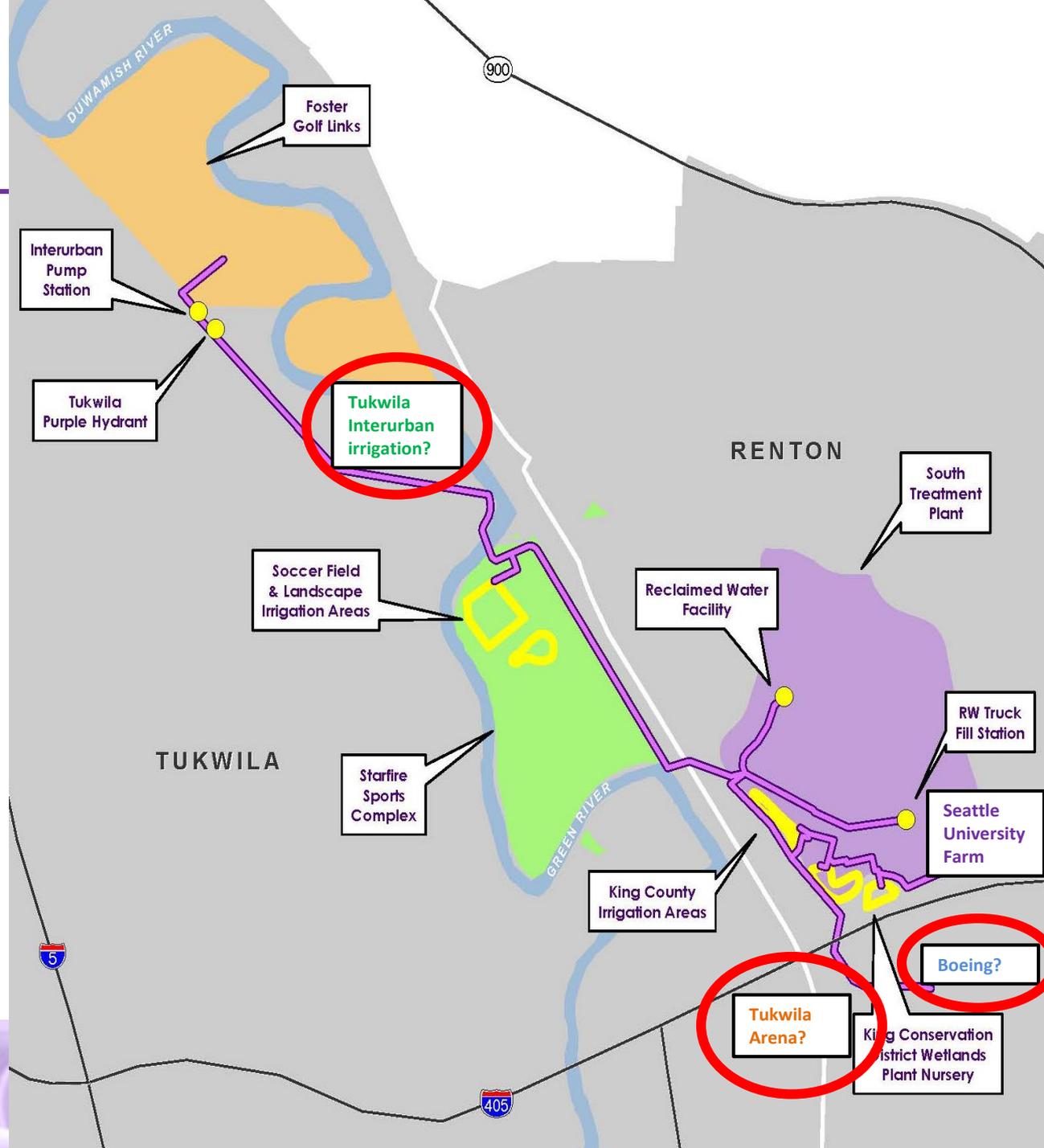


South Plant 2016 customer pursuits include...

 Tukwila Arena
Truck fill Users

 Boeing

 City of Tukwila –
Interurban
irrigation



Questions or Comments?

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