



King County

**recycledwater**

the right water for the right use

## Recycled Water On the Go – Fill ‘er Up



Kristina Westbrook | Recycled Water Program Manager

King County Department of Natural Resources & Parks | Wastewater Treatment Division

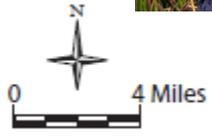
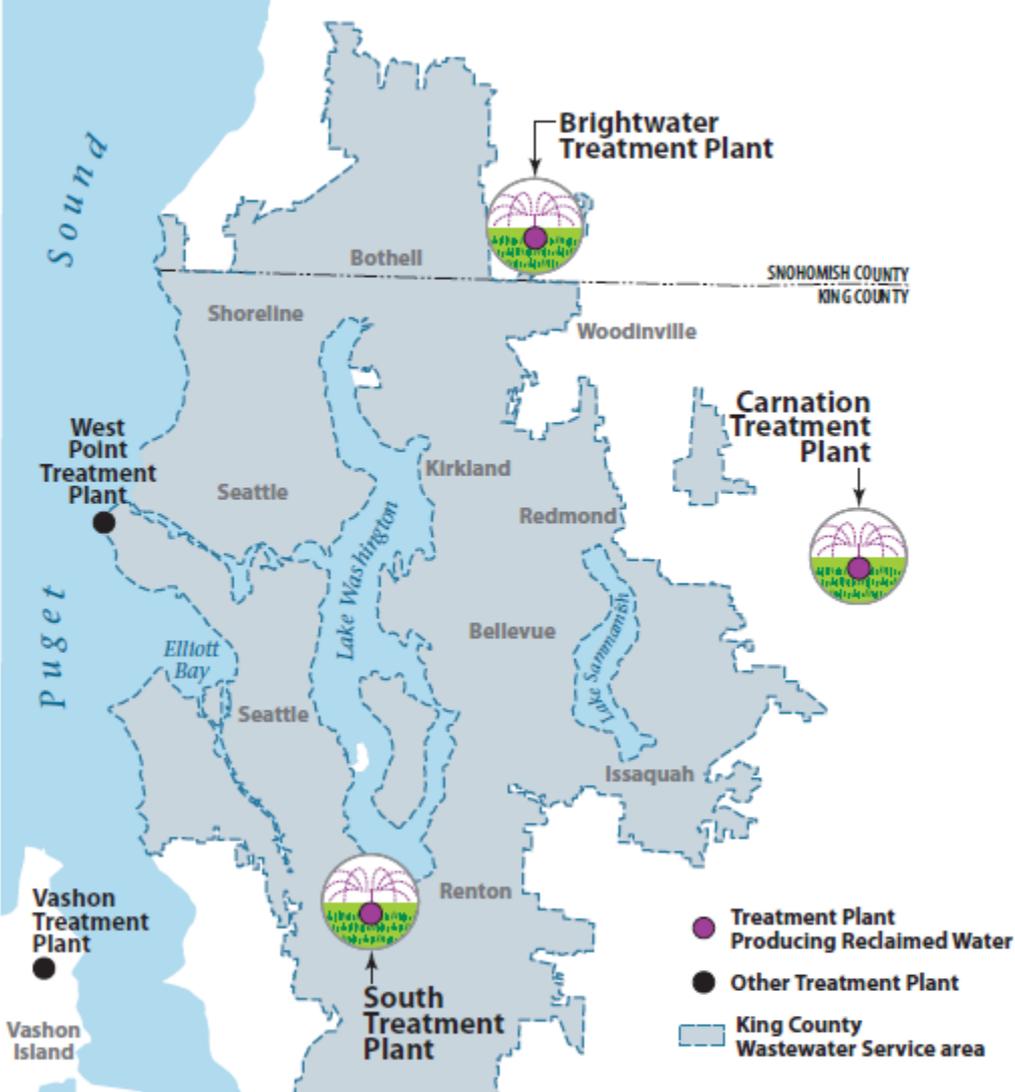


# We'll talk about:

1. King County's System
2. Why a Fill Station?
3. York Truck Fill Station Project
4. Customer Requirements
5. Large Scale Fill Station Systems

# Three Treatment Plants Produce Recycled Water

## KING COUNTY TREATMENT PLANTS PRODUCING RECYCLED WATER



**King County**  
 Department of Natural Resources and Parks  
 Wastewater Treatment Division  
 1503\_4737w\_recWTRmapKCA1

# We Produce Class A Reclaimed Water

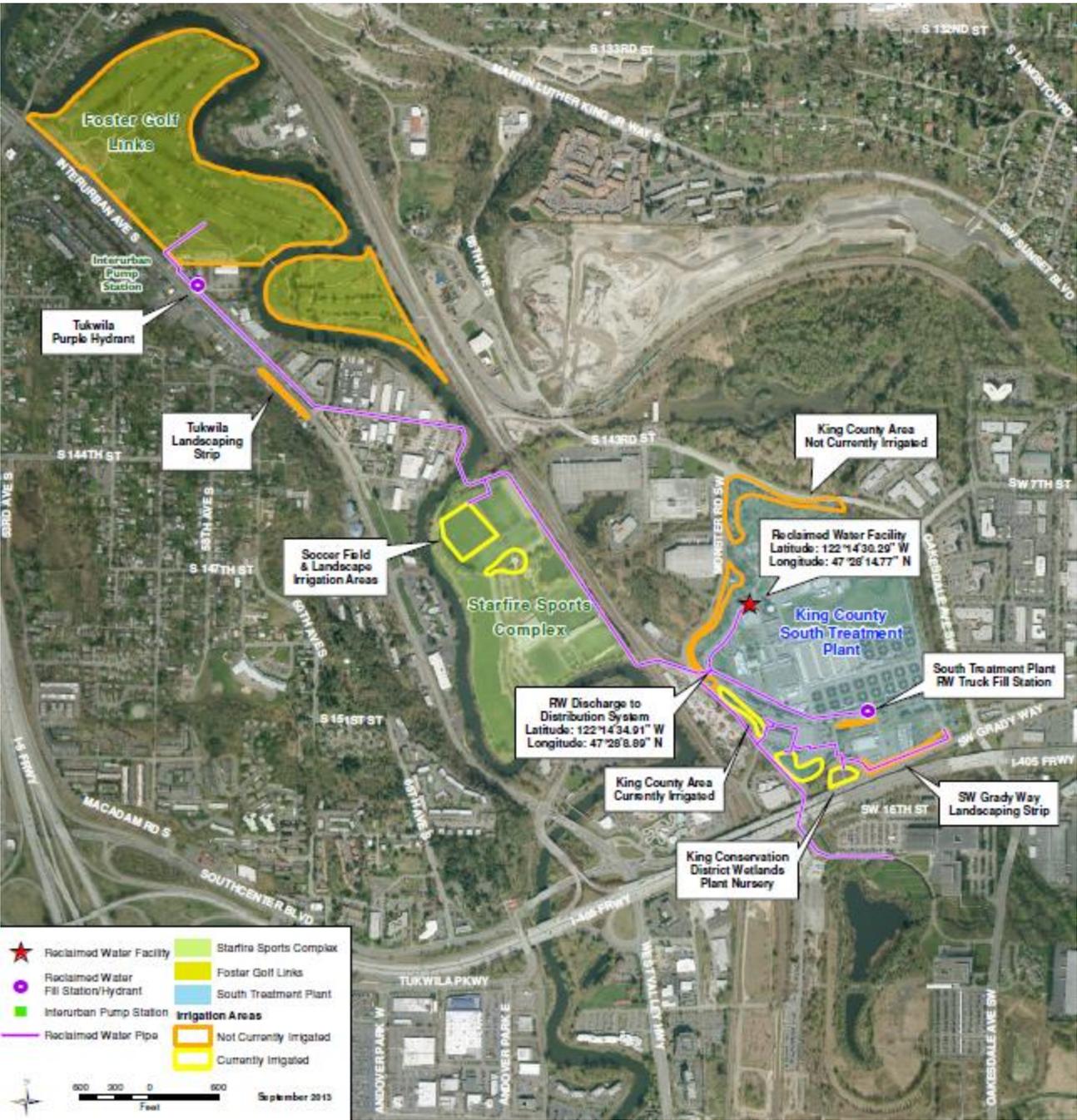
## Class A reclaimed water is...

- Oxidized
- Coagulated
- Filtered
- Disinfected
  - Total Coliform  $\leq 2.2$ /mL, 7 days median
  - $\leq 23$ /mL in any sample

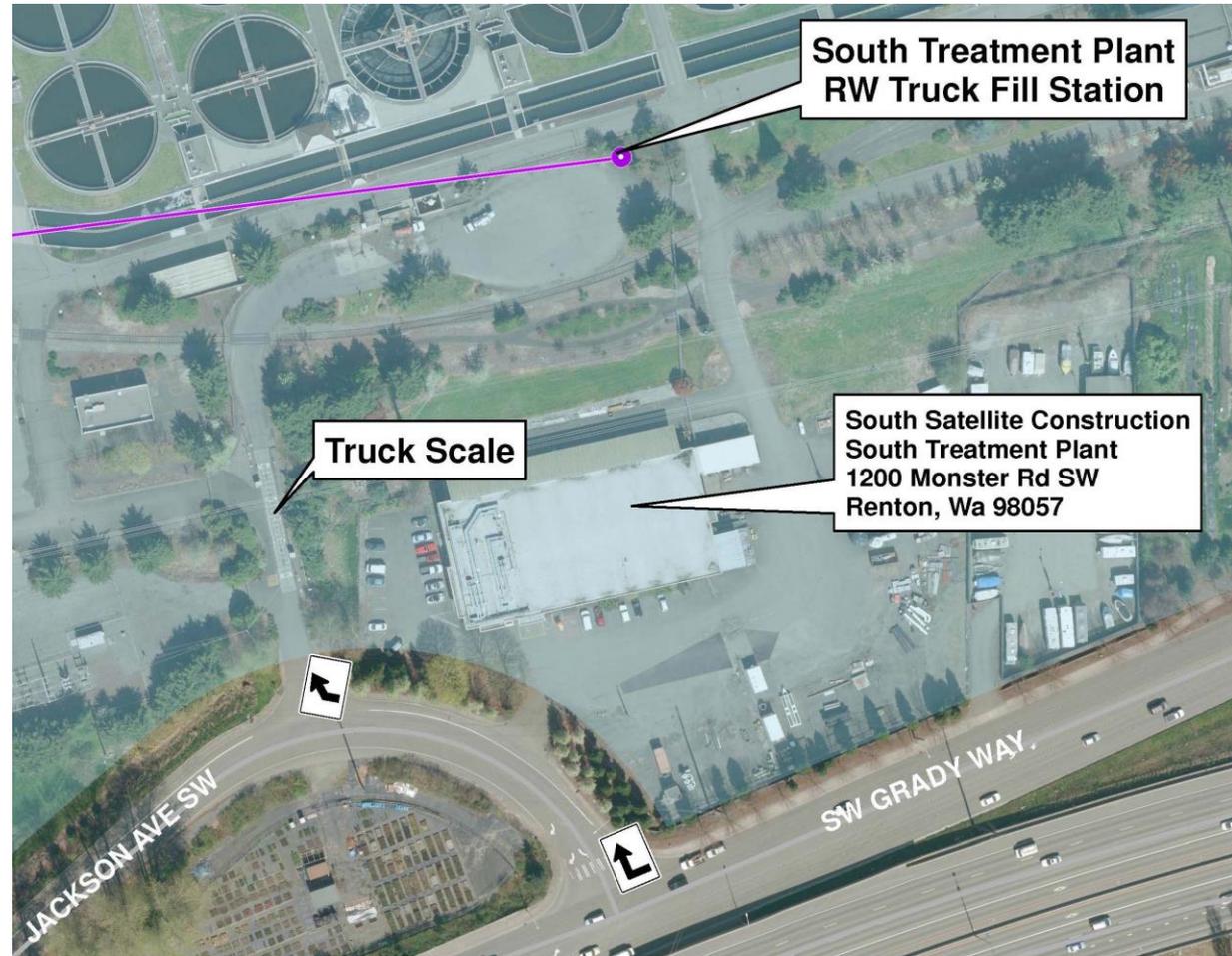


***Recycled Water = Reclaimed Water = Reuse Water***

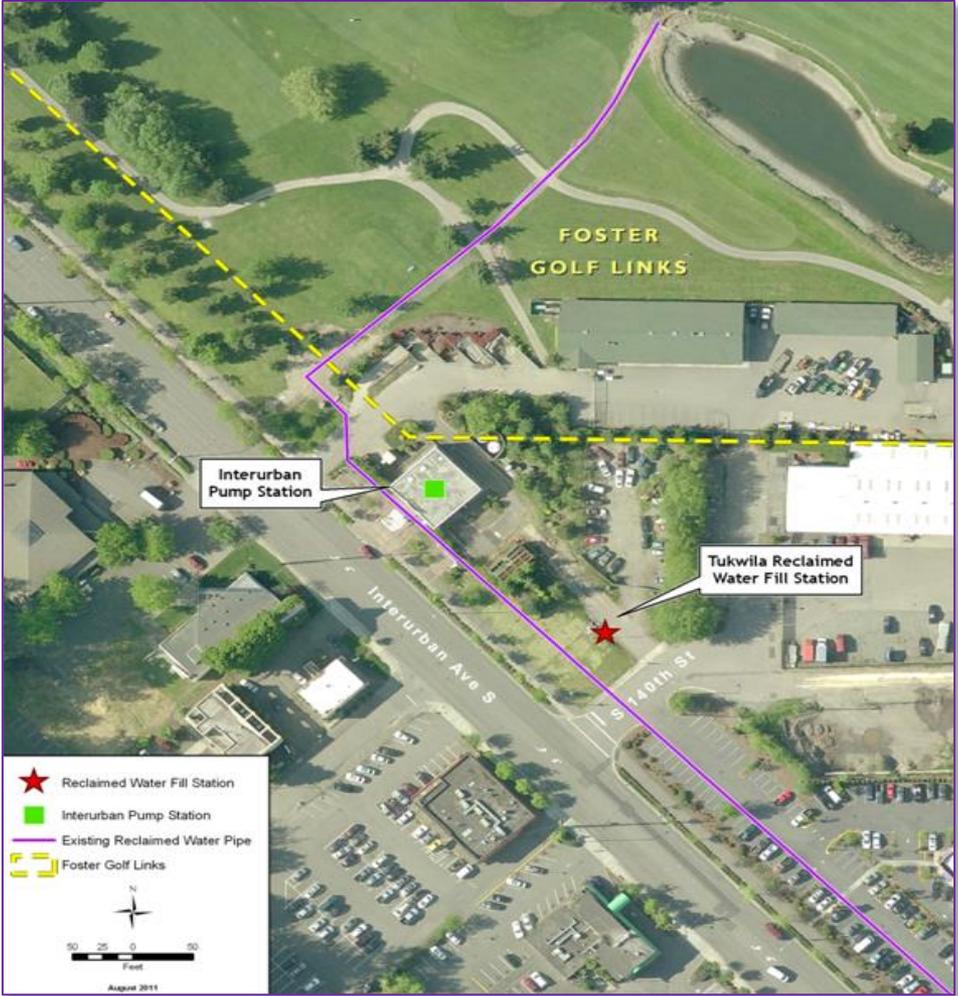
Recycled water is distributed from South Plant to Tukwila and Renton

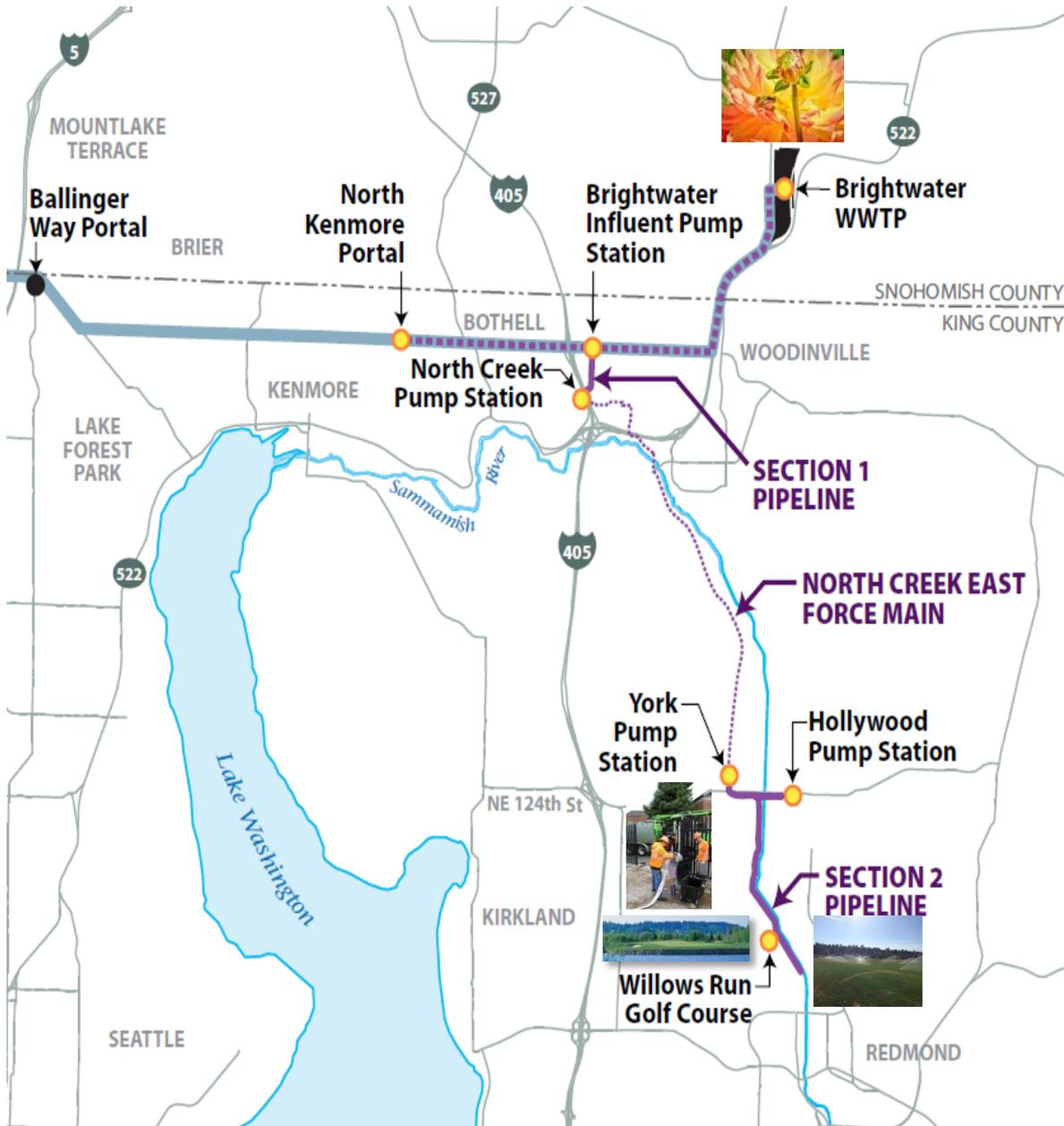


# South Plant Fill Station is available to King County Divisions



# Tukwila Truck Fill Station Set Up for Limited Customers





Recycled Water flows through Bothell, Woodinville, Sammamish Valley, north Redmond

# Sammamish River Valley

People,



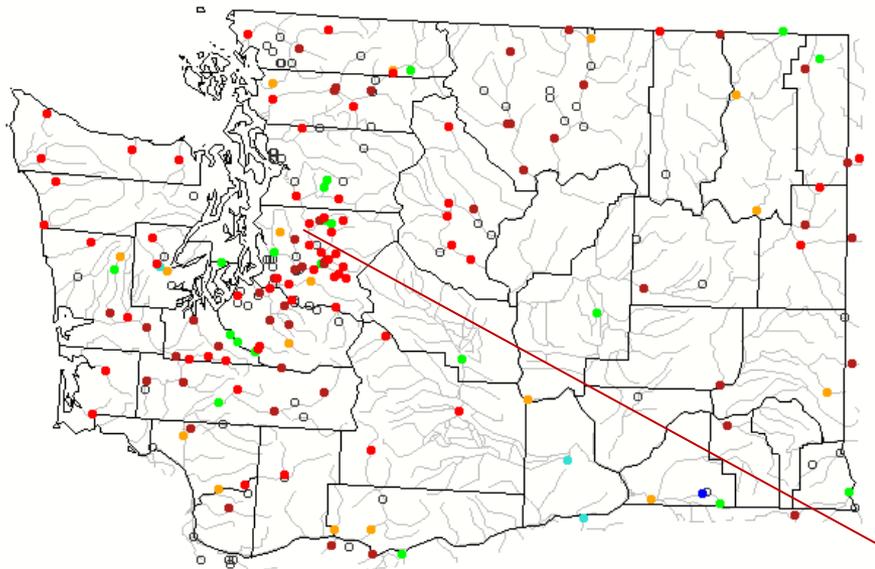
Farms,



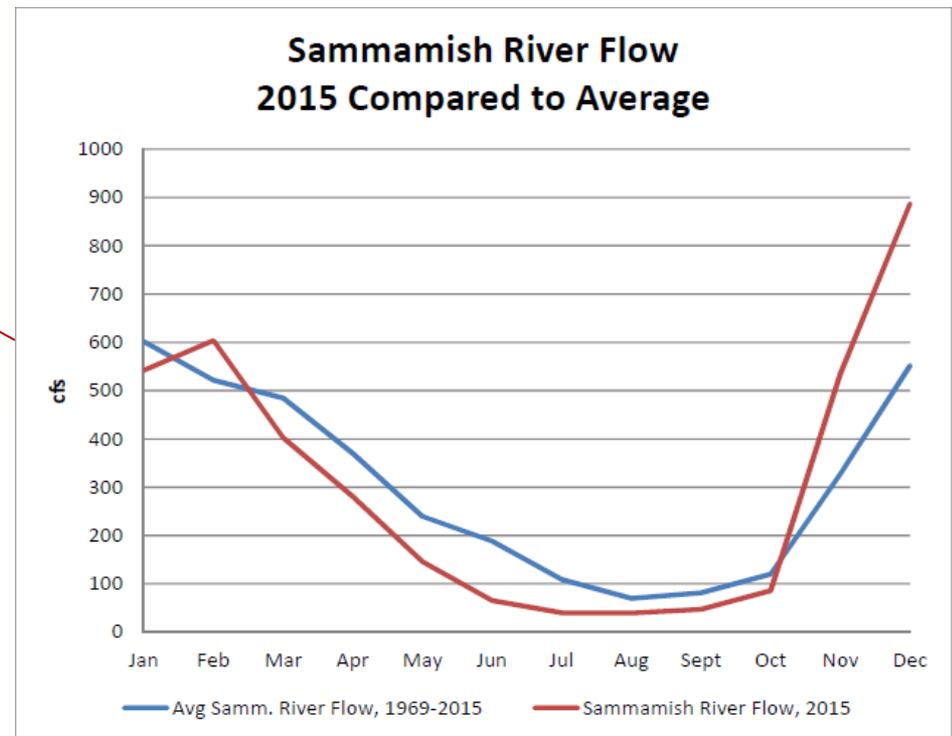
and Fish.



# Many rivers broke records for low stream flows in 2015

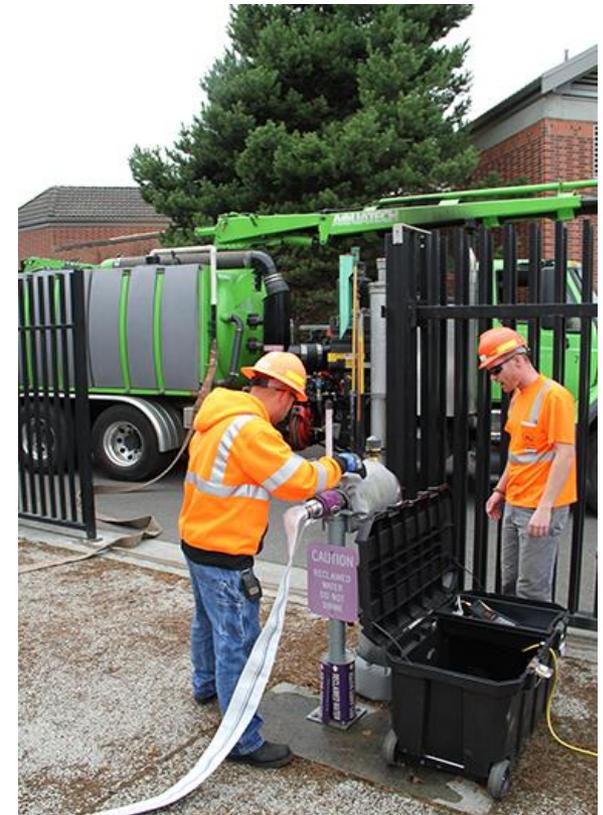


Explanation - Percentile classes							
<span style="color: red;">●</span>	<span style="color: orange;">●</span>	<span style="color: green;">●</span>	<span style="color: cyan;">●</span>	<span style="color: blue;">●</span>	<span style="color: black;">●</span>	<span style="color: gray;">○</span>	
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

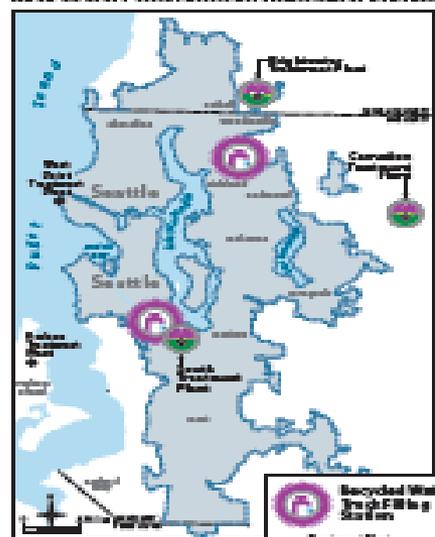


# 2015 Truck Fill Stations

- Temporary York Fill Station
- South Plant (only KC Divisions)



**KING COUNTY WASTEWATER TREATMENT SYSTEM**



King County has three treatment plants that make Recycled Water and two truck filling stations.

# Recycled Water Truck Filling Stations are Open for Business



Recycled Water is an affordable water solution for businesses and the community that helps protect our environment.

## Recycled Water can be used for most hauled water needs!

**CONSTRUCTION:**

- Soil compaction
- Hydro-excavation
- Saw cutting
- Cement mixing
- Dust control

**MUNICIPAL:**

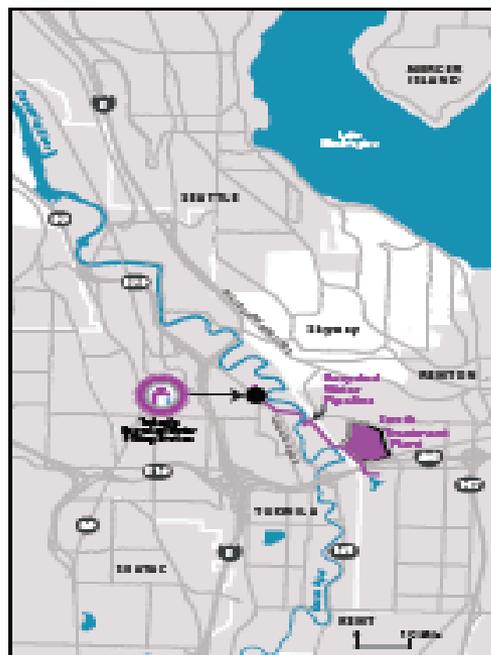
- Street sweeping
- Fire fighting
- Sewer flushing
- Storm system cleaning

**IRRIGATION:**

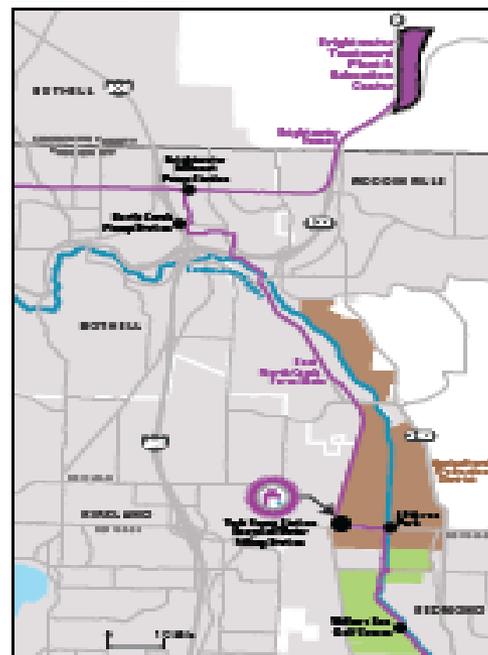
- Landscaping
- Food crops
- Restoration plantings

## Station Locations

**TUKWILA**



**SAMMAMISH VALLEY**



**For more information**

Email: [recycled.water@kingcounty.gov](mailto:recycled.water@kingcounty.gov)

Phone: 206-477-5557

Web: [kingcounty.gov/recycledwater](http://kingcounty.gov/recycledwater)

Image courtesy of King County

# There Are Numerous Truck Fill Use Needs That Can Be Met By Recycled Water



- Dust Control
- Concrete Mixing & Aggregate Washing
- Stormwater System Cleaning
- Sewer Flushing
- Firefighting

# Typical Truck Fill Tanks Range from 500-3,000 gallons



Dust Control – 1,500-3,000 gallons



Hydro-Excavator/Vactor 500-800 gallons



Irrigation – 500 gallons



Street Sweeping – 500-800 gallons

# Water Is Heavy

CONVERSION CHART	
GALLONS TO LBS	
1gal	= 8.35 lbs
50gal	= 417.50 lbs
100gal	= 835 lbs
200gal	= 1,670 lbs
300gal	= 2,505 lbs
400gal	= 3,340 lbs
500gal	= 4,175 lbs
1000gal	= 8,350 lbs

**DO NOT OVERLOAD VEHICLE  
OWNER IS RESPONSIBLE**



The fill station was designed for a truck with a maximum truck volume of 5,000 gallons.

# Market Considerations Were Taken Into Account When Setting Pilot Pricing

## Agricultural and Mitigation/Restoration Irrigation

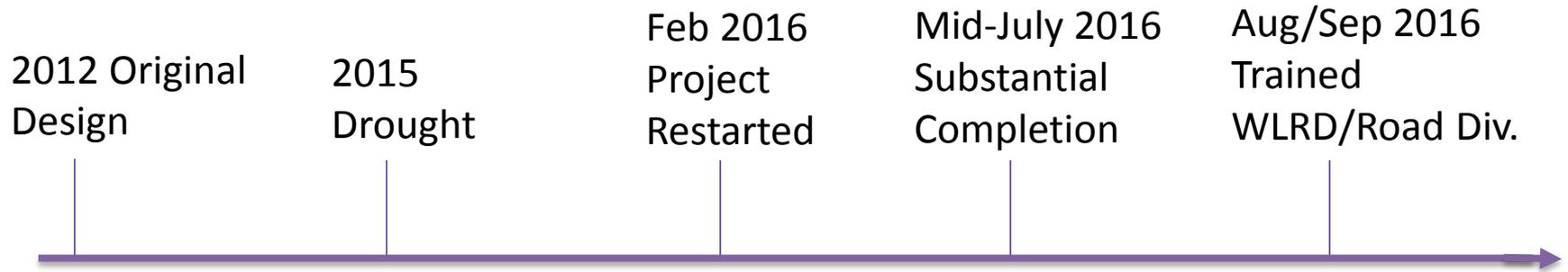
\$0.10/ccf

## All Other Uses

\$1.05/ccf (Mid-May through Mid-Sept)

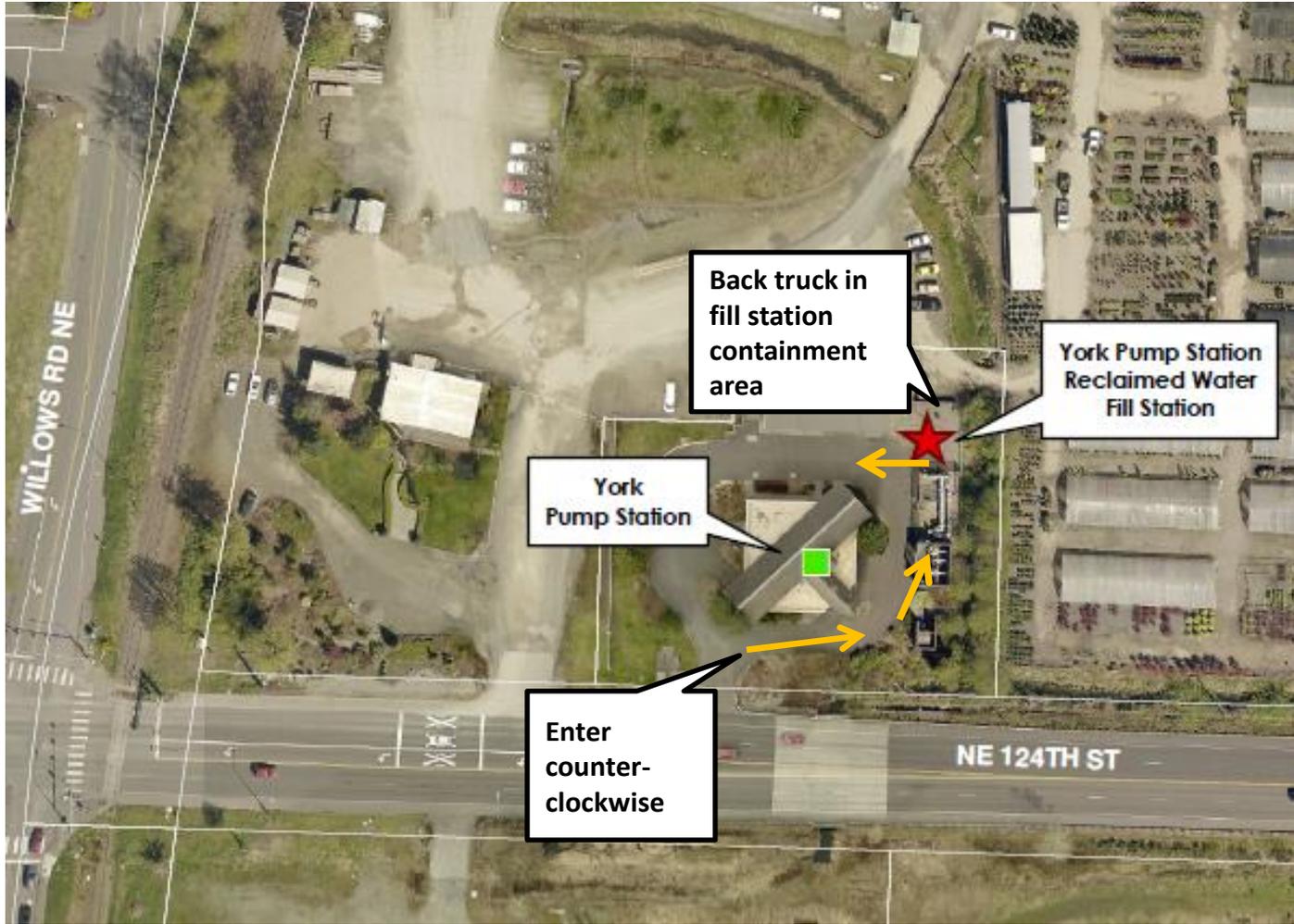
\$0.71/ccf (April to Mid-May; Mid-Sept to Nov)

# Project Cost and Schedule



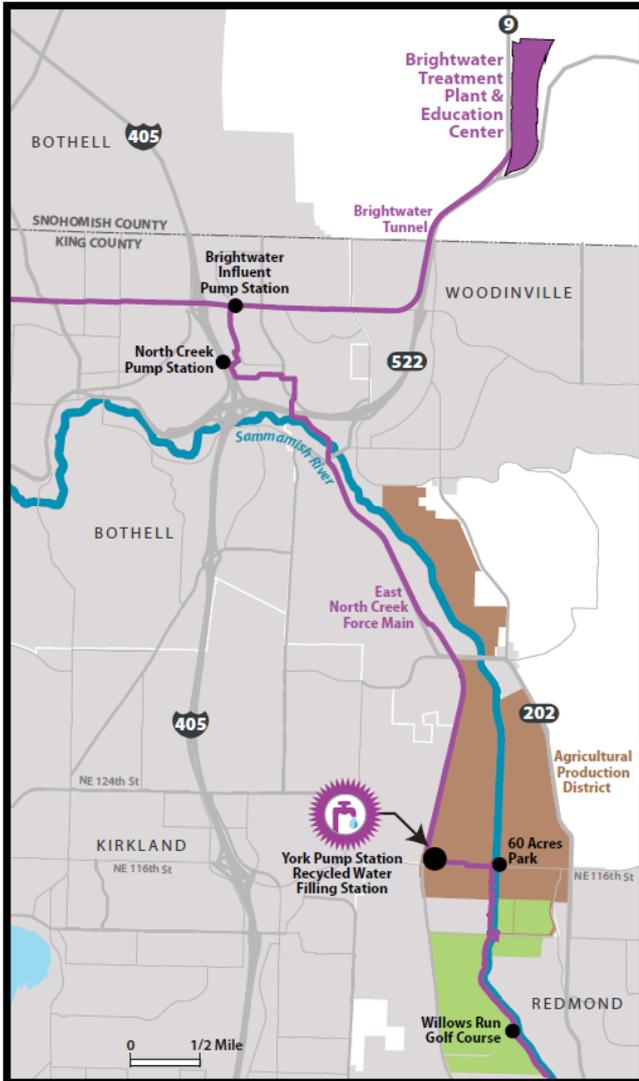
Construction Cost \$213,000

# York Pump Station RW Fill Station



# York Truck Fill Station

## SAMMAMISH VALLEY

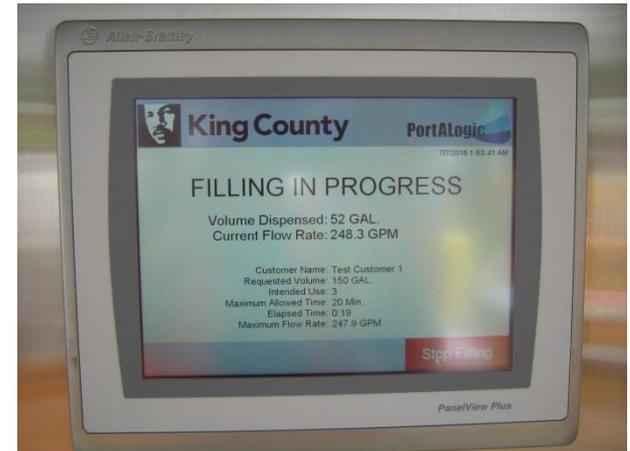
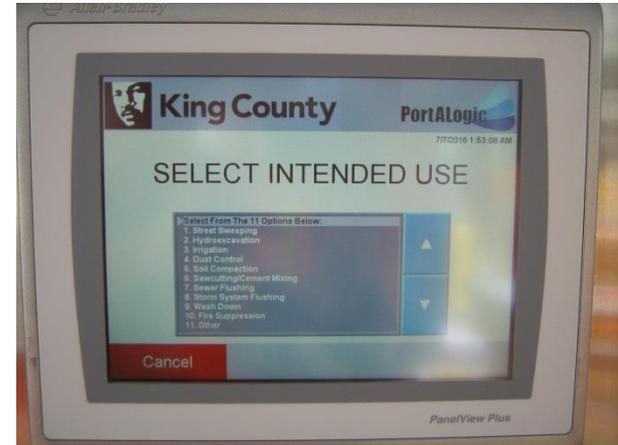


# How the Fill Station Works



## Truck Fill Station Records:

- Customer
- Volume of Water Dispensed
- Purpose of Use
- Date and Time Dispensed



# York RW Fill Station Instructions



To start touch the grey box

**Step 1:** Touch screen on grey box in center of screen.



On-screen keypad

Enter key

LOGIN button appears here

**Step 2:** Enter your Access Number and press the enter key.

- Press the LOGIN button on the lower right of the screen.



Touch to enter PIN number

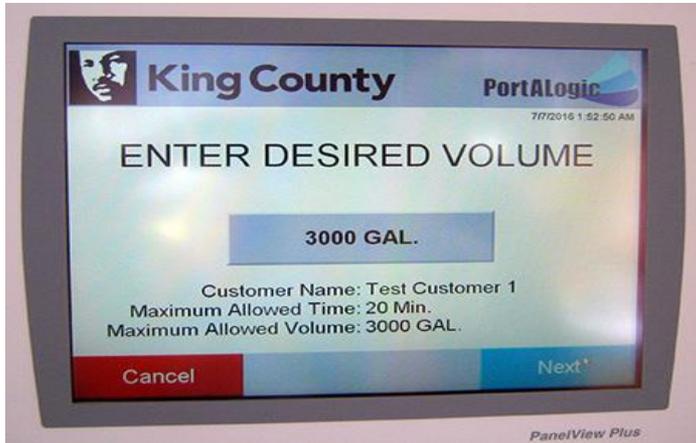
SUBMIT button appears here

**Step 3:** Enter your PIN Number by touching grey box at center of screen.

- Type your PIN number on the on-screen keypad.
- Press the enter key.
- Press the SUBMIT button.

**Login screens**

# York RW Fill Station Instructions



## Step 4: Enter the volume of water you want

- Press Next button.  
(Note: System defaults to maximum tank capacity for each customer.)



## Step 5: Select the intended use of the reclaimed water from the list on the Intended Use Screen.

- Use the up and down arrows on the right side of the menu move through the list.
- Highlight your intended use.
- Press the START FILLING button.

**The system will stop automatically when the entered volume of water is delivered.**

*Please monitor the tanker during filling.*

# York RW Fill Station Instructions



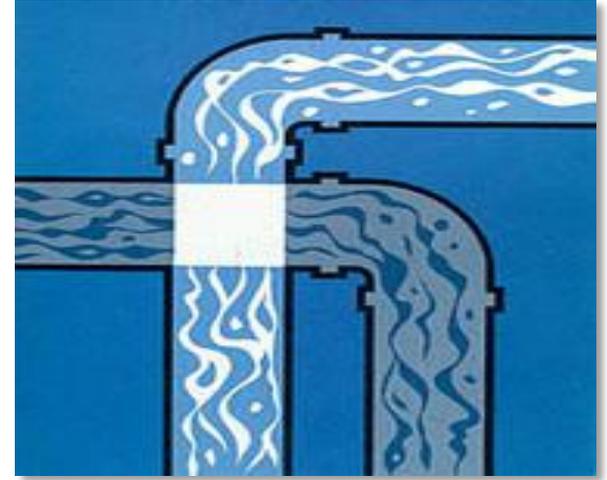
**The system will stop automatically when the entered volume of water is delivered.**

*\*Please monitor the tanker during filling.*

## After Tank is Filled

- Disconnect the hose from the tanker and allow draining into the containment area.
- Stow the hose at the back of the containment area.
- Close and lock the interface cabinet.

# Customer Responsibilities are Appropriate Use and Protection of Drinking Water



**The right water for the right use**

We're conserving natural resources by irrigating pump station landscaping with reclaimed water.



This water is not produced for drinking.



**King County**  
Department of Natural Resources and Parks  
Wastewater Treatment Division

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# Hydro-excavation Requirements Protect Water Quality

- No potable water pipes
- Excavated material must be decanted prior to disposal
  - Liquid fraction is discharged to the sewer or septage receiving station.
  - Solids fraction needs to meet disposal requirements and if land applied it cannot affect groundwater.



# Stormwater System Cleaning Requirement Protects Surface Water

- Jetting and vactoring is used to clean stormwater piping systems
- Plugs or methods to prevent used reclaimed water and sediments from entering surface water bodies
- Disposal similar to hydro-excavation

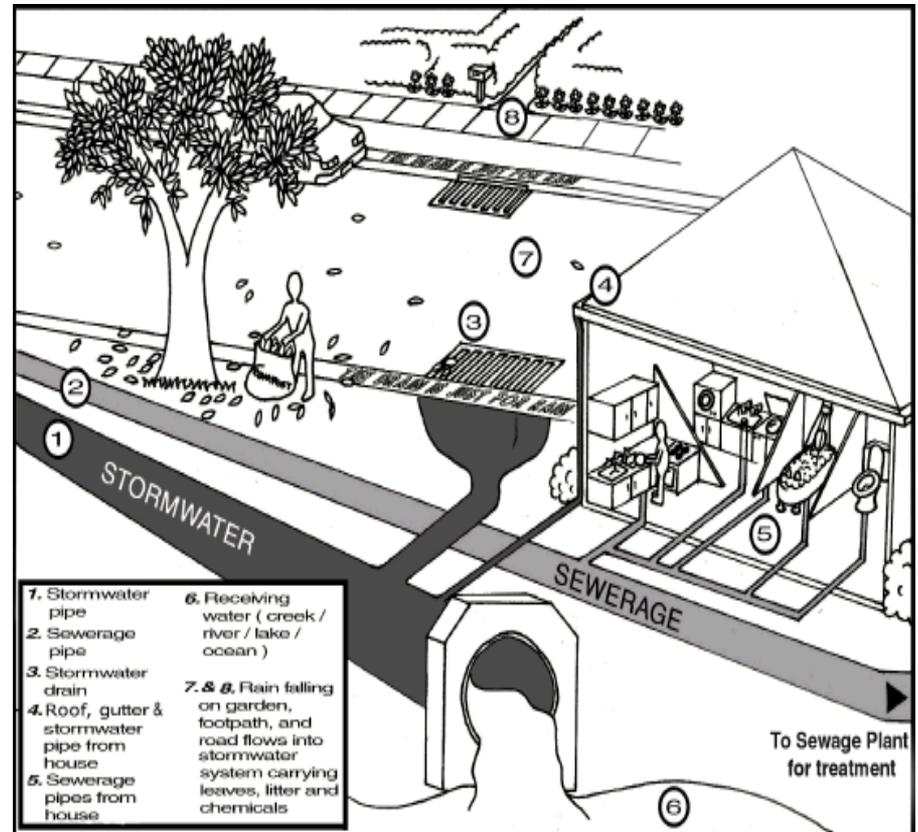


Photo from: <http://www.environment.nsw.gov.au/>



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## **Working with Recycled Water General Health and Safety Information**

### **Truck-and-Haul Frequently Asked Questions**

## **Recycled Water Guidelines**

### **2013 Recycled Water Truck-and-Haul Inspection Checklist**

This inspection checklist is administered by King County Wastewater Treatment Division (WTD) to ensure that the Washington State Water Reclamation and Reuse Standards (September 1997) are satisfied. King County WTD personnel will ensure that the following conditions are met prior to transporting reclaimed water, also known as recycled water:

# Many California Cities have Reclaimed Water Fill Stations available for Commercial and Residential Users

## Recycled Water Hydrant Locations May 2015

- Installed RW Hydrant Location
- Proposed RW Hydrant Location



**CONNECT TO PURPLE HYDRANTS ONLY**  
**\$1,000 FINE** per violation  
 For a map of recycled water hydrant locations, visit [www.ebrsd.com](http://www.ebrsd.com) and search for "purple hydrants"



COUNTY/CITY	AGENCY	PAGE NO.
<b>ALAMEDA COUNTY</b>		
Dublin	Dublin San Ramon Services District	3
Livermore	City of Livermore	5
Oakland	East Bay Municipal Utility District	4
Pleasanton	Dublin San Ramon Services District	3
San Lorenzo	Oro Loma Sanitary District/East Bay Dischargers Authority	10
<b>CONTRA COSTA COUNTY</b>		
Concord	Central Contra Costa Sanitary District	2
Martinez	Central Contra Costa Sanitary District	2
Richmond	East Bay Municipal Utility District	4
San Ramon	Dublin San Ramon Services District	3
<b>MARIN COUNTY</b>		
Novato	North Marin Water District	9
San Rafael	Marin Municipal Water District	6
<b>NAPA COUNTY</b>		
Calistoga	City of Calistoga	1
Napa	Napa Sanitation District	8
Yountville	Town of Yountville	20
<b>SAN FRANCISCO</b>		
San Francisco	City and County of San Francisco/SFPUC	14
<b>SAN MATEO COUNTY</b>		
San Francisco	San Francisco International Airport	15
Redwood City	City of Redwood City	13
<b>SANTA CLARA COUNTY</b>		
Milpitas	City of Milpitas/South Bay Water Recycling	7
Palo Alto	City of Palo Alto	11
San Jose	City of San Jose/South Bay Water Recycling	16
Sunnyvale	City of Sunnyvale	19
<b>SONOMA COUNTY</b>		
Petaluma	City of Petaluma	12
Santa Rosa	City of Santa Rosa	17
Sonoma	Sonoma County Water Agency	18

**WASTEWATER/  
RECYCLED WATER  
TREATMENT PLANT**

# What is to come?

## Customer Experience Improvements

- Website Update
- Improve ease of training
- Simplify Contract
- Marketing to external customers

## Future Fill Station Lessons Learned

- Remote access and integration
- Opportunities to reduce costs

# Questions?

 King County

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Recycled Water is an affordable water solution for the community and will help increase awareness of recycled water in your community

Kristina Westbrook | Recycled Water Program Manager | King County Wastewater Treatment  
206-477-5522 | [kristina.Westbrook@kingcounty.gov](mailto:kristina.Westbrook@kingcounty.gov) | [www.kingcounty.gov/recycledwater](http://www.kingcounty.gov/recycledwater)