

Water/Wastewater in Redmond

Sources of Water Supply

- City of Redmond Supply
- Cascade Water Alliance (CWA) Supply
 - City of Seattle
 - City of Tacoma
 - Lake Tapps

City of Redmond Supply

- Perrigo Springs and Seidel Creek
- 5 wells (approx. 35% of supply)
- Shallow groundwater (<50 feet deep)
- Approx. 321 miles of pipe (4" and over)
- 10 reservoirs (over 32 MG)
(5 in City, 2 Novelty Hill, 3 shared)



EDUCATION HILL RESERVOIRS



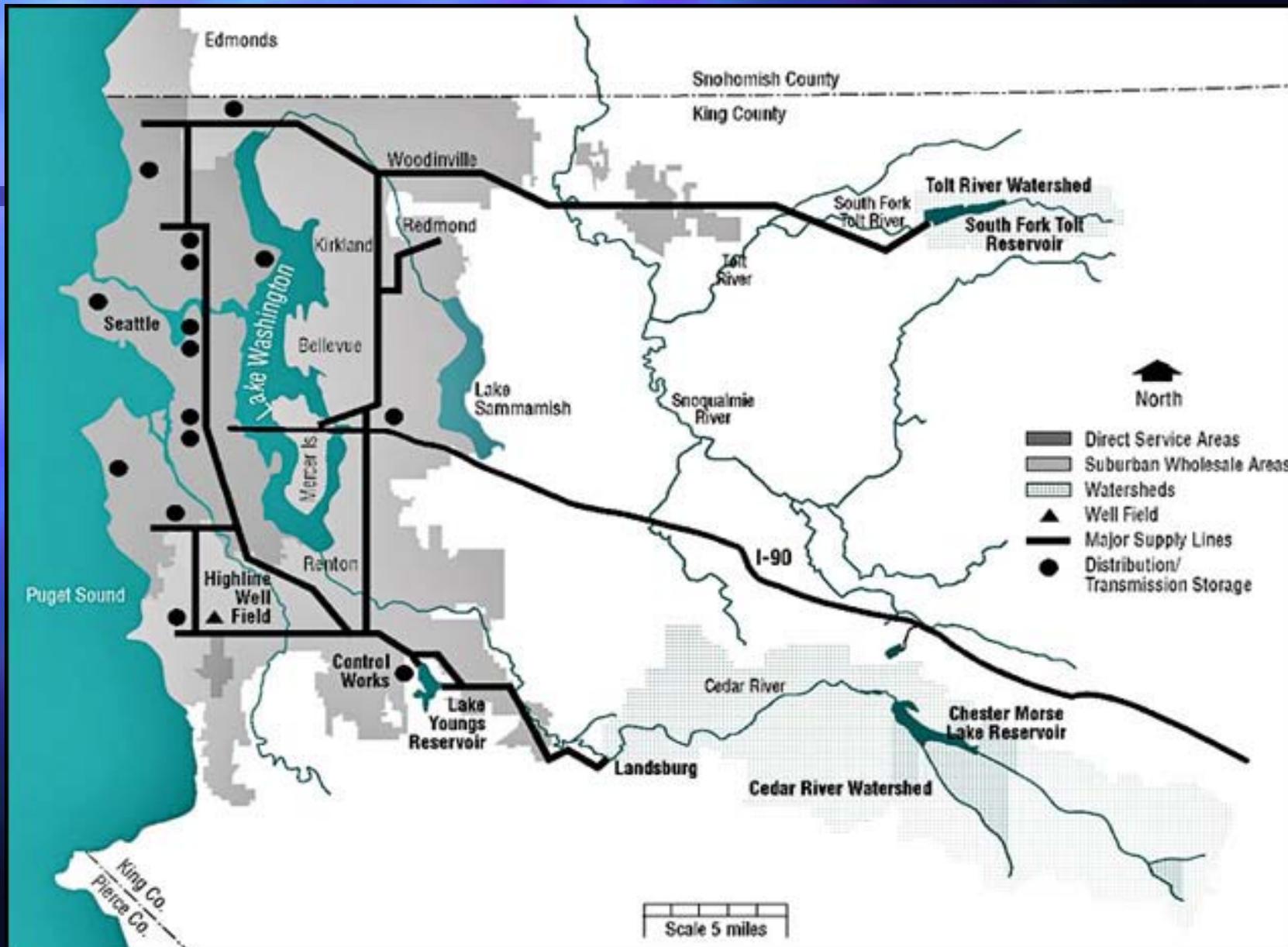
SE REDMOND RESERVOIR



NOVELTY HILL RESERVOIR

Cascade Water Alliance

- 8 member agencies formed in 1999 to develop new supplies
- Redmond, Bellevue, Kirkland, Issaquah, Sammamish Plateau, Tukwila, Skyway, Covington
- Consolidated supply contracts with Seattle
- New supply contracts with Tacoma
- Purchased Lake Tapps



City of Seattle

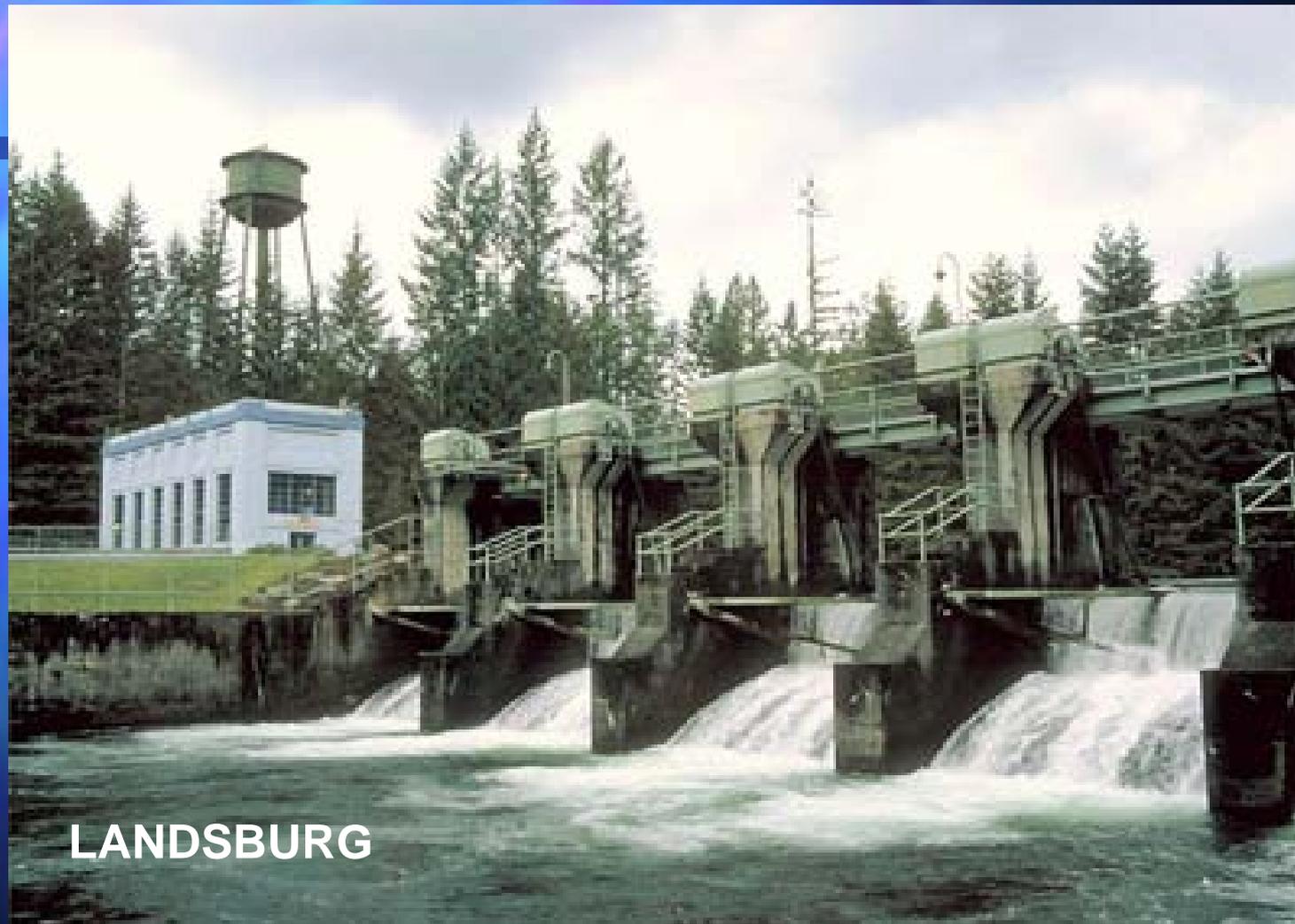


Seattle Cedar River

- Chester Morse Lake
- Landsburg
- Lake Youngs
- Treatment Plant
- Cedar River Pipelines
- Seattle Reservoirs



CHESTER MORSE LAKE



LANDSBURG

Seattle Tolt River

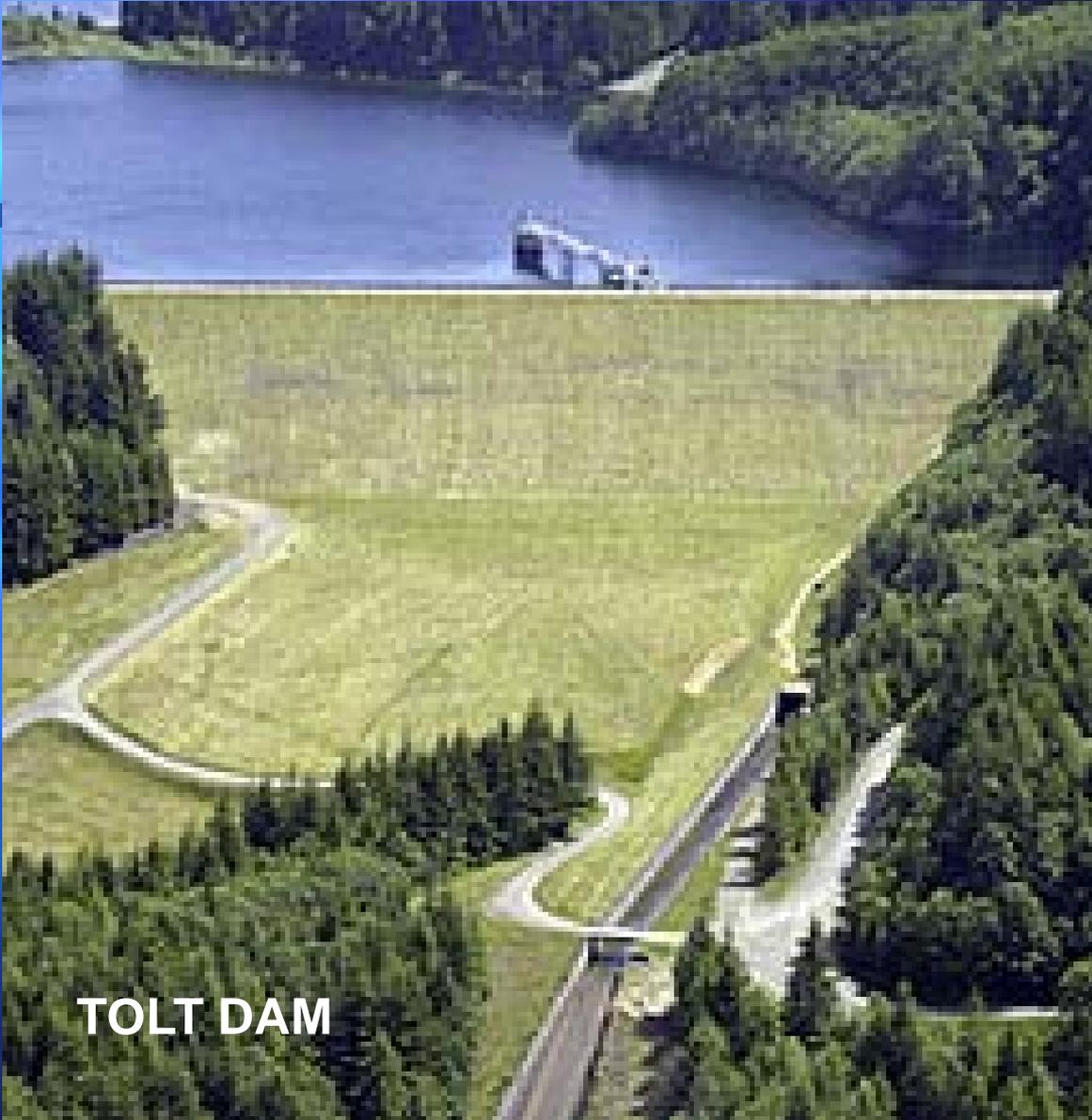
- Tolt Reservoir
- Tolt Dam
- Regulating Basin
- Treatment Plant
- Tolt River Pipelines
- Tolt Eastside Supply Line
- Seattle Reservoirs



TOLT RESERVOIR



MASONRY DAM



TOLT DAM



REGULATING BASIN



TREATMENT FACILITY

Tacoma Green River

- Howard Hansen Reservoir
- Howard Hansen Dam
- Green River Headworks
- Second Supply Pipeline



Howard Hanson Reservoir

Cascade Lake Tapps

- White River Diversion
- Lake Tapps Reservoir
- Lake Tapps treatment Plant (future)
- Cascade Regional Pipeline (future)



LAKE TAPPS

© Save Lake Tapps Coalition



Water Programs

- Water System Plan – currently being updated
- Cross Connection Backflow Prevention Program
- Water Quality (Well Treatment)

Cross Connection Backflow Prevention

- Ensures the water supply is safe by making sure backflow devices are tested on a yearly basis
- 5537 devices in water system



Redmond Well Treatment

- Disinfection
 - Hypochlorite
- Corrosion Control (pH adjustment)
 - Caustic soda
 - Air stripping
- Dental
 - Sodium fluoride
- Aesthetic (Well #4)
 - Manganese



16825

WELL #1



OLD WELL #2

16815

WELL #2

AIR STRIPPING TOWER



**WELLS #1 & 2
TREATMENT BUILDING**



OLD WELL #3



9306

WELL #3



WELL #4



WELL #5

Disinfection



CHLORINATION

Corrosion Control



CAUSTIC SODA

Fluoridation



FLUORIDE TREATMENT

Water Capital Project Reservoir Park PS & Tank Upgrades

- Completion date – Summer 2011



Future Water Project

- SE Redmond Transmission Main
- 565 zone upgrades for better fire flow to Education Hill

Wastewater System

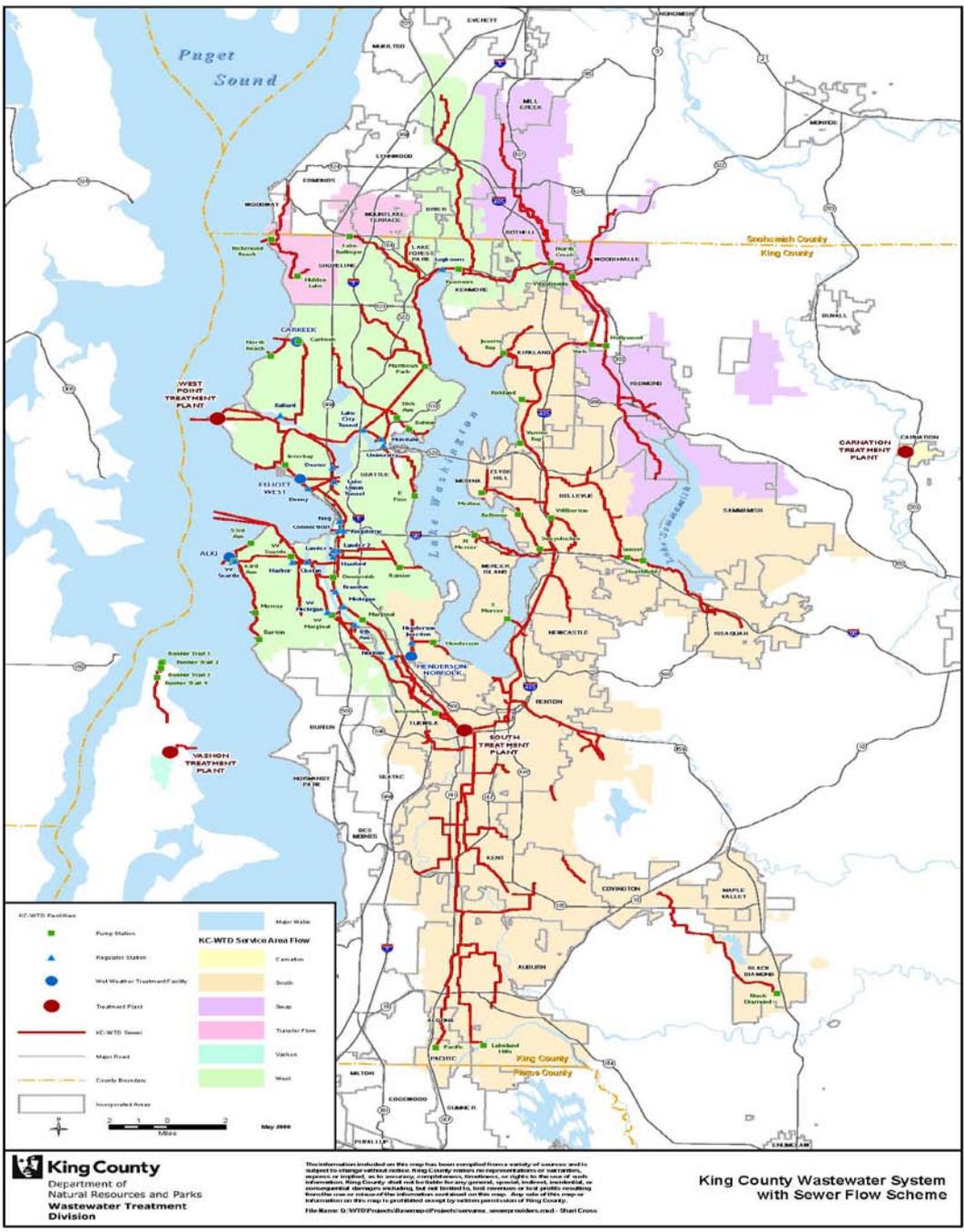
- Background
 - First sewers were constructed in 1958 in Downtown area and residential areas to north
 - Lakehills Sewer District
 - Metropolitan Seattle Trunk System

Wastewater System

- Over 217 miles of pipe (4" -36")
- Over 6800 manholes
- 33 sewer basins within City
- 8 sewer basins on Novelty Hill
- 23 pump stations (16 in city, 7 Novelty Hill)

Treatment

- Redmond conveys wastewater flows to King County METRO's regional system for treatment and disposal
- West Point or Renton Treatment Plants
- In 2012, Redmond's wastewater will be conveyed to the Brightwater Treatment Plant



Pump Stations

- Novelty Hill PS #51
- Redmond Town Center PS #17



Wastewater Programs

- Source Control (FOG)
- CCTV Program
- Pipe Cleaning Program
- Pump Station Maintenance

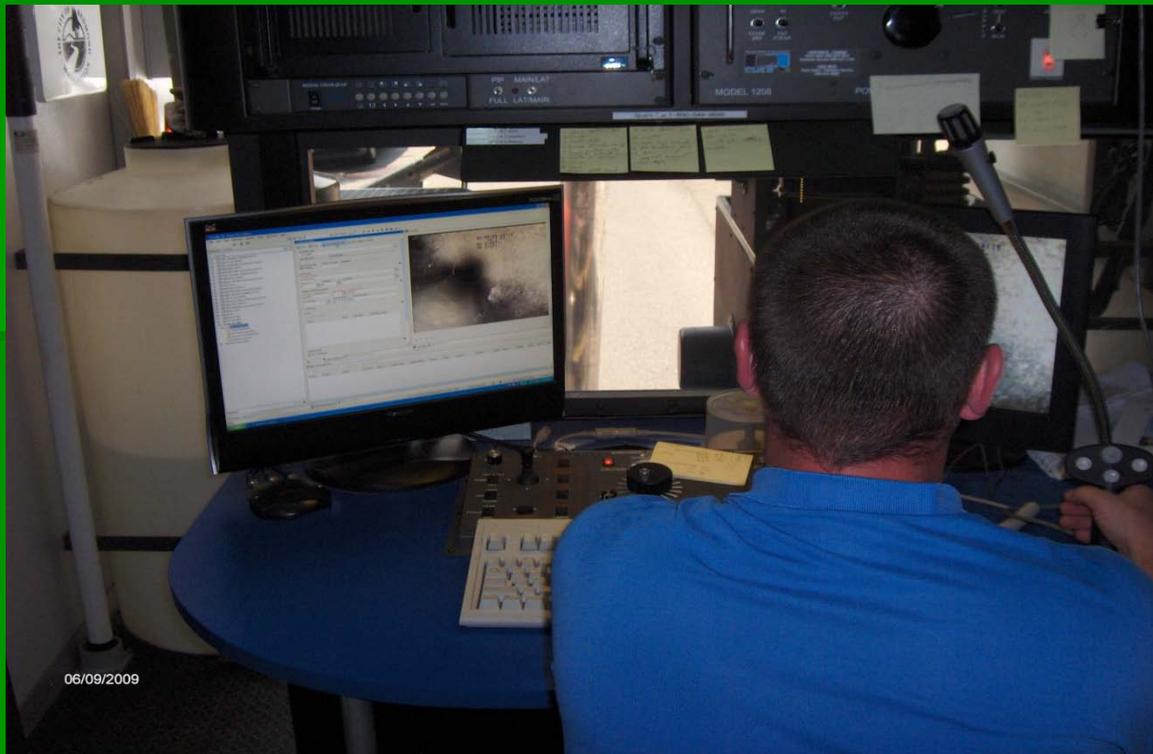
Source Control

- Elimination of FOG (Fats, Oils, and Grease)



CCTV Program

- Evaluates condition of sewer mains using CCTV methods



CCTV Program

- H₂S (hydrogen sulfide) corrosion



Pipe Cleaning Program

- Maintenance Crew cleans and TVs every sewer pipe on a five year cycle
- “Trouble areas” are cleaned more frequently
- Blockages in pipes caused by “flushable” wipes, swiffer material (mop heads), disposable diapers

Pump Station Maintenance

- Check stations weekly
- Check pumps, motors, controls
- Clean wet wells

Pump Station Maintenance

- Pump Station #4



- Wet Well



Equipment

- Vactor Truck



Wastewater Capital Project Pump Station #1 Rehab

- Old PS #1
- New PS #1



Future Wastewater Projects

- Upgrade Pump Stations #2 and #3
- Install new manhole access on lake line to prevent SSO in Lake Sammamish

Questions?

