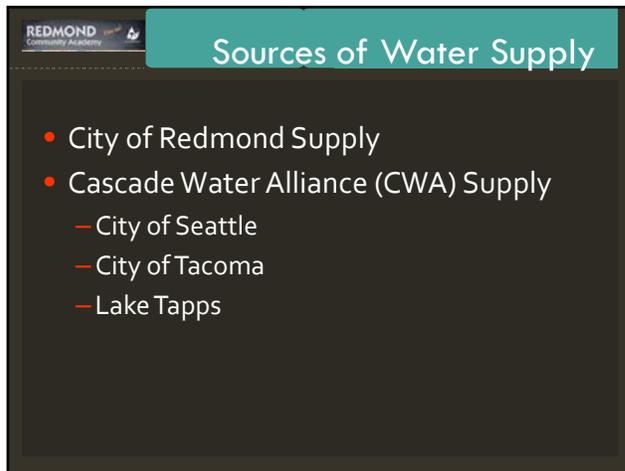


**Water/Wastewater
in Redmond**

Jeff Thompson
Senior Engineer

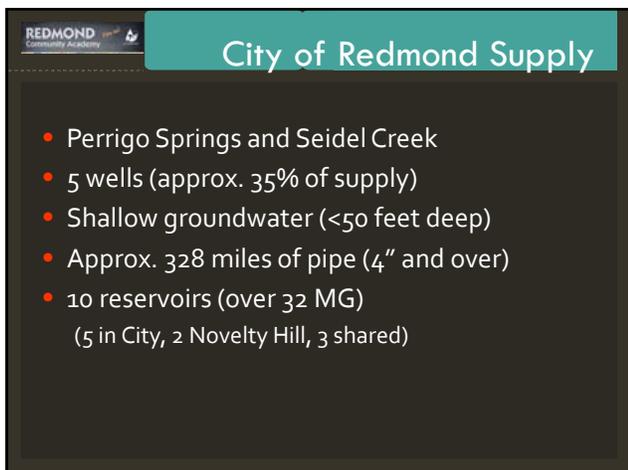
The slide features a dark background with a vertical line of small white dots on the left side. A small image of a modern building with a curved facade is positioned in the upper right. A teal horizontal bar is located below the main title.



Sources of Water Supply

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

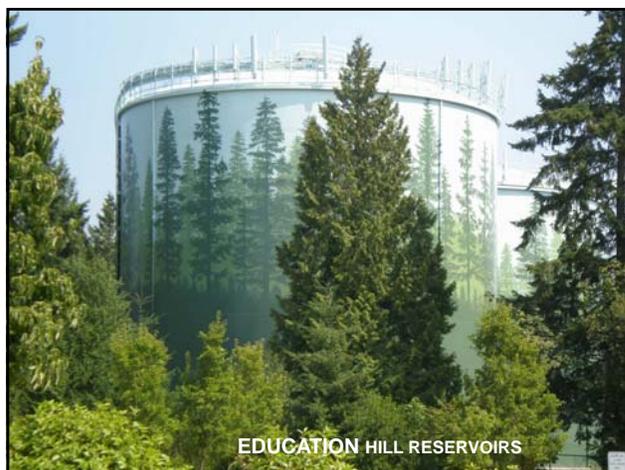
The slide has a dark background with a teal header bar at the top. The Redmond Community Authority logo is in the top left corner. A list of water supply sources is presented in white text.



City of Redmond Supply

- Perrigo Springs and Seidel Creek
- 5 wells (approx. 35% of supply)
- Shallow groundwater (<50 feet deep)
- Approx. 328 miles of pipe (4" and over)
- 10 reservoirs (over 32 MG)
(5 in City, 2 Novelty Hill, 3 shared)

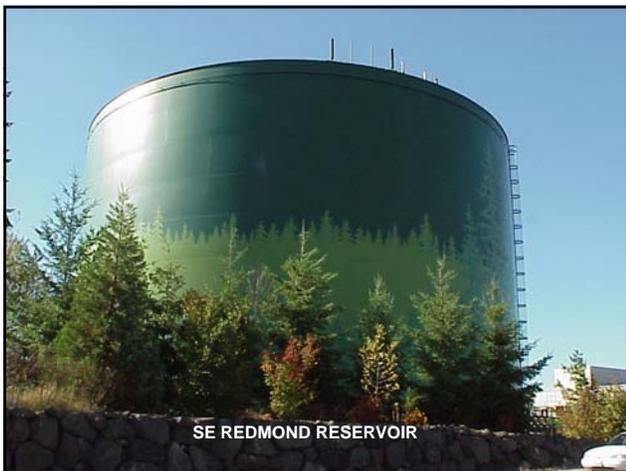
The slide features a dark background with a teal header bar at the top. The Redmond Community Authority logo is in the top left corner. A list of local water supply details is presented in white text.



Slide 4

I1

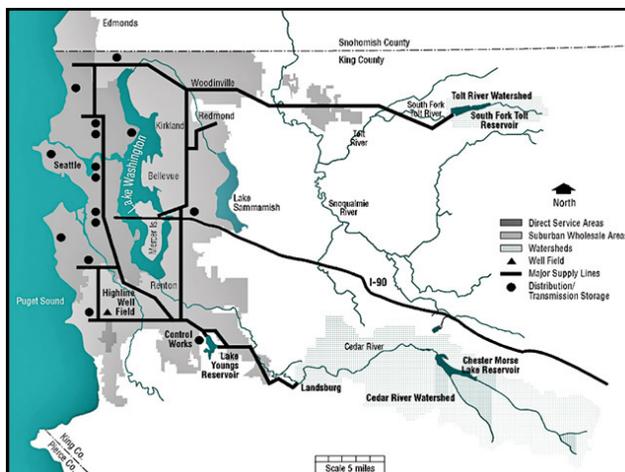
larakaki, 5/16/2011



REDMOND
Community Authority

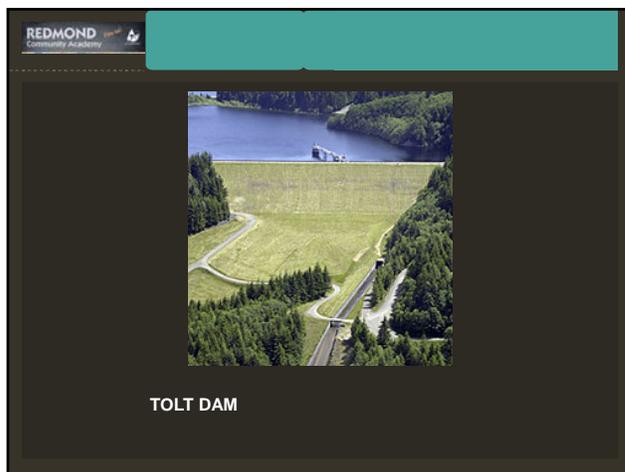
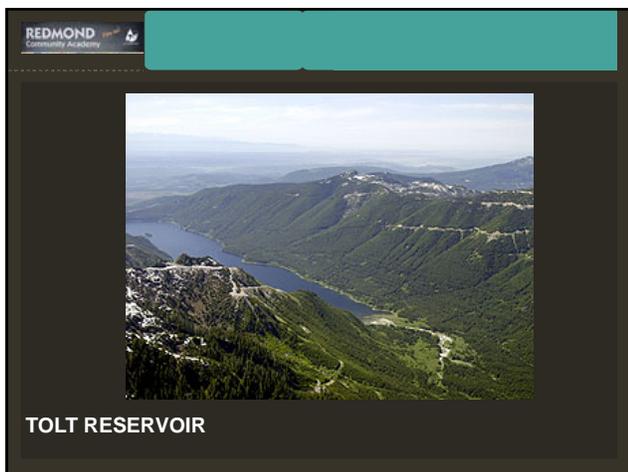
Cascade Water Alliance

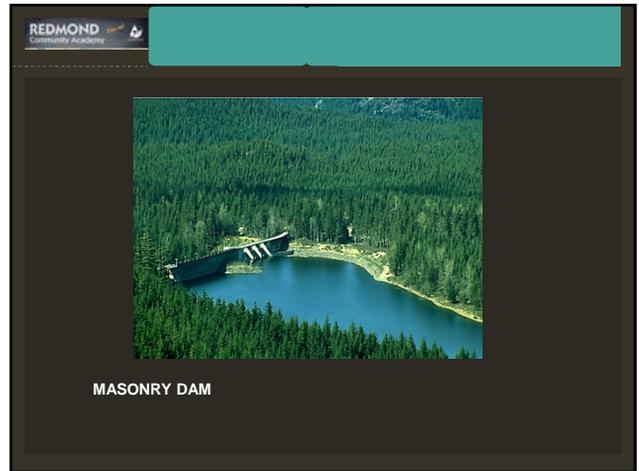
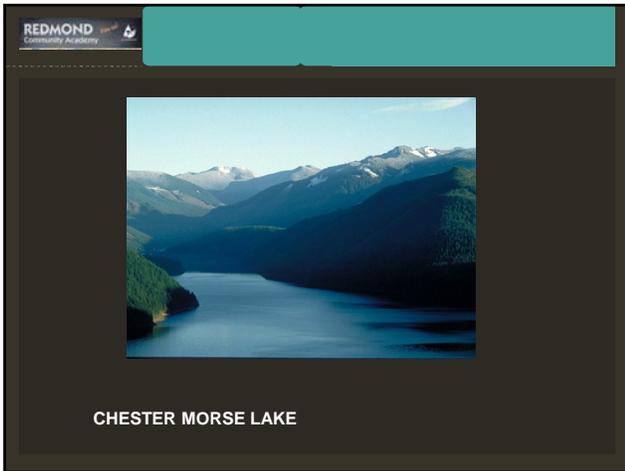
- 7 member agencies formed in 1999 to develop new supplies
- Redmond, Bellevue, Kirkland, Issaquah, Sammamish Plateau, Tukwila, Skyway
- Consolidated supply contracts with Seattle
- New supply contracts with Tacoma
- Purchased Lake Tapps





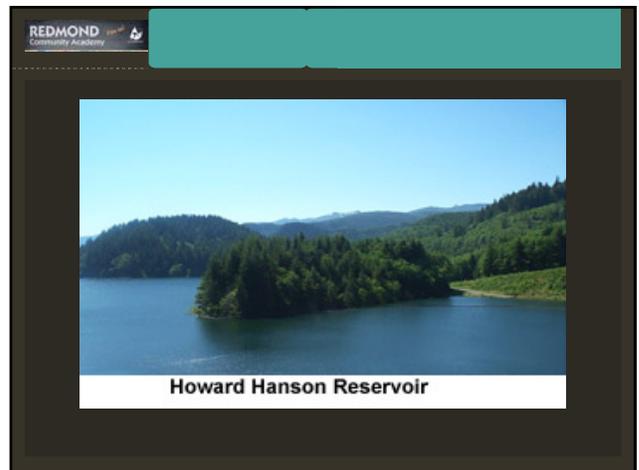
- Seattle Public Utilities**
- Tolt River Supply
 - Tolt Reservoir
 - Tolt Eastside Supply Line
 - Cedar River Supply
 - Chester Morse Lake
 - Cedar River Pipelines





Tacoma Green River

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



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Cascade Lake Tapps

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

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LAKE TAPPS

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Water Programs

- Water System Plan (updated in 2011)
- Cross Connection Backflow Prevention Program
- Water Quality (Well Treatment)

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Cross Connection Backflow Prevention

- Ensures the water supply is safe by making sure backflow devices are tested on a yearly basis
- 6,282 devices in water system



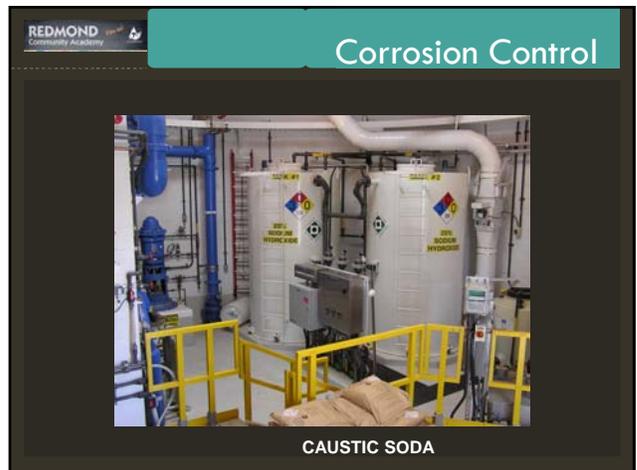
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Redmond Well Treatment

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







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Fluoridation



FLUORIDE TREATMENT

The image shows industrial equipment for water fluoridation. A prominent blue rectangular unit is labeled 'Torit', which is a filter. The equipment is situated in a utility room with various pipes, valves, and a yellow safety railing.

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Recent Water Capital Projects

- Reservoir Park Pump Station & Tank Upgrades
- SE Redmond Transmission Main

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Reservoir Park PS & Tank Upgrades

- Completed Summer 2011



The image shows a small, single-story concrete building with a dark roof, situated on a grassy hillside. This is the Reservoir Park Pump Station. The building has several windows and a door, and is surrounded by trees and a fence.

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SE Red Transmission Main



08-10-2012 11:08

The image shows a large-scale construction project for a transmission main. Two large, red, cylindrical pipe sections are being laid out on a concrete structure. Workers in orange safety gear are visible near the pipes. A yellow crane or hoist is also present. A timestamp in the bottom right corner reads '08-10-2012 11:08'.

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SE Red Transmission Main



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Future Water Projects

- 565 zone upgrades for better fire flow to Education Hill (>4,000 feet of new pipe)
- Miscellaneous Water System Improvements (Pipe, PRVs, & Meters)

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Wastewater System

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

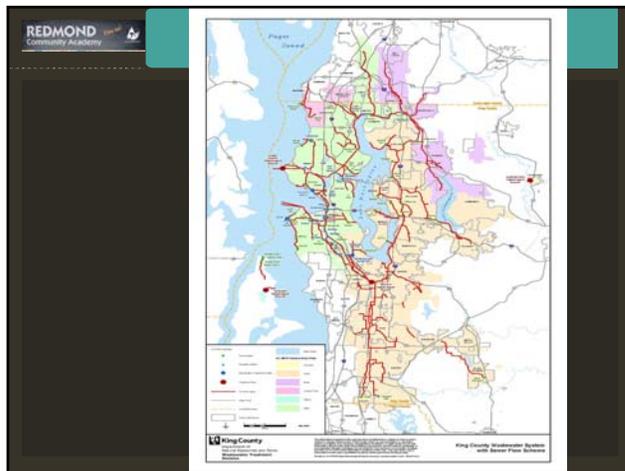
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Wastewater System

- Over 220 miles of pipe (4" -36")
- Over 6,900 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
- Redmond's wastewater is conveyed to the Brightwater Treatment Plant



Pump Stations

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

The images show two pump stations. The first is Novelty Hill PS #51, a small, single-story building with a green roof and a concrete foundation. The second is Redmond Town Center PS #17, a larger, single-story building with a green roof and a concrete foundation.

Wastewater Programs

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

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Source Control

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



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CCTV Program

- Evaluates condition of sewer mains using CCTV methods



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CCTV Program

- H₂S (hydrogen sulfide) corrosion



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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

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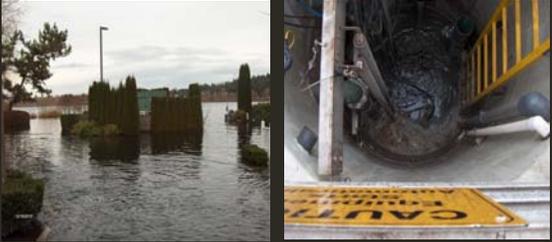
Pump Station Maintenance

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

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Pump Station Maintenance

- Pump Station #4
- Wet Well



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Equipment

- Vactor Truck



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Wastewater Capital Project Pump Station #1 Rehab

- Old PS #1
- New PS #1



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Future Wastewater Projects

- Upgrade Pump Stations 2, 3, 10, 12, & 15
- Install new manhole access on lake line to prevent SSO in Lake Sammamish

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Questions?

