



Water Savvy

Time to Prepare for the Future

In August 2008, the cities of Lake Oswego and Tigard formally endorsed a partnership agreement for sharing drinking water resources and costs. Lake Oswego’s water supply system is near capacity and key facilities need expansion and upgrades. Tigard residents seek ownership in a water supply system. Both cities want to keep water affordable for their customers and sharing the cost of new infrastructure to serve both communities does that. The Partnership is planning to expand Lake Oswego’s existing drinking water infrastructure to serve both communities.

Lake Oswego and Tigard are jointly investing to upgrade and expand Lake Oswego’s water treatment facilities, saving millions of dollars for customers in both cities.

Issues Being Addressed by the Partnership

Aging Facilities

Lake Oswego’s key water supply facilities – the water intake on the Clackamas River, pump stations and the water treatment plant in West Linn – are more than 40 years old. Lake Oswego’s water system has served customers high quality drinking water for over 40 years. Key facilities were built in the late 1960s.



Lake Oswego’s water treatment plant, located in West Linn

Over the years the City of Lake Oswego has continued to invest in its water supply system through upgrades, replacements, and maintenance. This has allowed the City to keep water rates low.

Now, despite past investments and on-going maintenance, the system and most facilities are nearing the end of their expected life. **Lake Oswego’s water facilities are too old and undersized to continue to reliably and economically serve the community’s needs.**

Lake Oswego Water System Investment Timeline

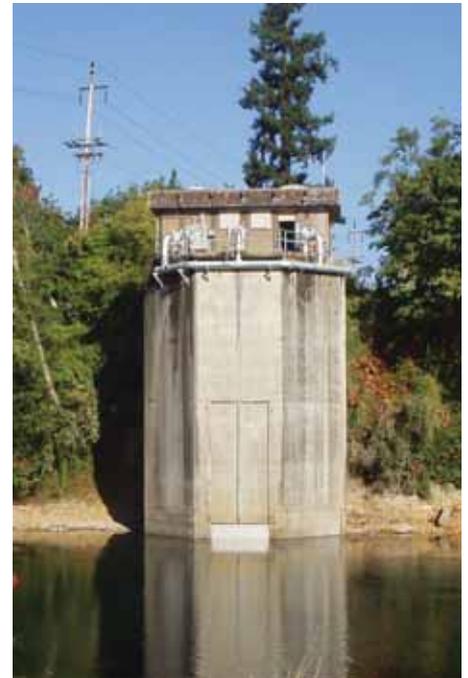
1969	New water system online.
1980	Water treatment plant expanded.
1992	2.65 miles of the untreated water transmission main cleaned.
1999	New treatment technology installed at water treatment plant. Eliminated use of chlorine gas.
2000-2002	Water intake improvements: new pump, fish-friendly screens and electrical system; seismic retrofits. Corrosion protection installed on untreated water transmission main. Upgrade for the water treatment plant’s solids handling.
2001	Water treatment plant improvements: seismic retrofits, building improvements, new filter media, new piping, pumps and valves.
2003	Second phase of corrosion protection installed on treated water transmission main.
2006	Controls installed to remotely operate distribution system from water treatment plant.
2008	Lake Oswego Tigard Water Partnership Project initiated.

Reliability

Reliable water systems operate and serve customers safe drinking water 24 hours per day under a variety of operating conditions – power failures, hot summer days, water line breaks, fire suppression and natural disasters.

Lake Oswego’s water system has several reliability shortcomings:

- **Lake Oswego does not have access to alternate water supply sources sized to meet even average day demand.** The largest existing interconnection with another water system also relies on Clackamas River water as its sole source.
- **Existing pumps are at the end of their operating life.** When the 40-year-old pumps in the treatment plant and river intake break down, some parts need to be custom manufactured because they are no longer available on the shelf. This makes reliable operation uncertain during demanding summer pumping conditions.
- **The system lacks reliability.** During summer months, flows from the City’s water intake facility are carefully monitored and controlled to match flows leaving the City’s water treatment facility. Pumping upgrades made in 1980 did not adequately consider the need to match incoming and outgoing flows creating today’s lack of reliability to treat and supply 16 million gallons of water per day (mgd) to city consumers. When the largest pump at the water treatment plant is out of service, the reliable capacity of the City’s supply is reduced to 12 mgd.
- **During summer months, both the untreated and treated water transmission pipelines deliver water at velocities higher than what is optimal for pipe.** Too much water, too fast, consumes more energy, and creates the potential for damaging pressures within the pipeline if pumps stop abruptly or critical valves are closed too quickly.

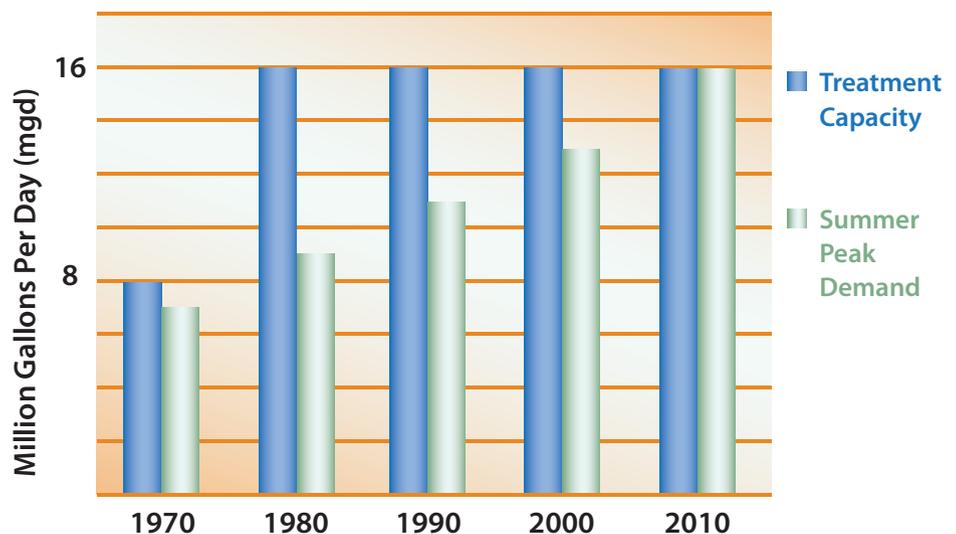


Lake Oswego’s water intake facility in Gladstone can reliably pump 12 mgd, well below the 16 mgd needed to meet peak summer demand.

Capacity

Conserving water is the first and most important supply option sought by the Lake Oswego Tigard Water Partnership. Both communities have adopted comprehensive water-saving measures to encourage water conservation. But conservation alone cannot meet even the immediate water supply needs for the City of Lake Oswego. During hot summer days, Lake Oswego’s key water facilities, including the water treatment plant, operate 24 hours per day at maximum capacity (16 million gallons per day - mgd). **Every pump is running round-the-clock to keep up with demand.** There is no more treatment capacity available in the summer to cover additional demand.

Lake Oswego Water Treatment Capacity



In 1980, the City of Lake Oswego expanded its water treatment plant to meet future needs. It is time again to reinvest in another long-term water system improvement.

Water Treatment Plant Operations

Lake Oswego's water treatment plant produces high quality drinking water that meets or exceeds all state and federal drinking water standards. **Because the treatment plant is more than 40 years old, it has a number of operational challenges:**

- The treatment process technology at the plant is not optimal for removing the sediment (turbidity) that washes into the Clackamas River during heavy rains. The demands of constant monitoring, chemical dosing, and clogged filters sometimes requires operators to take the plant out of production while adjustments are made;
- The treatment plant's electrical system is obsolete and replacement parts are difficult to find. In some cases, used or refurbished parts are all that is available;
- Clearances to high voltage electrical equipment for worker safety in some parts of the water treatment plant do not meet today's electrical code; and
- Water security is a high priority. Modern treatment plants have safeguards against vandals or intentional acts of sabotage. Older plants, like Lake Oswego's, can be more vulnerable.



Lake Oswego's water treatment plant was built in the 1960s and is in need of upgrades and expansion.

Providing Safe, Reliable Water for Years to Come — At the Least Cost to Both Cities

Planned improvements to Lake Oswego's water system will address current reliability, capacity and operational problems and provide drinking water well into the future by:

- Upgrading, upsizing and replacing Lake Oswego's aging facilities;
- Assuring sufficient capacity to meet the needs of Lake Oswego and Tigard customers, now and into the future;
- Providing redundancy that allows service to continue during planned and unplanned interruptions;
- Resolving issues that make Lake Oswego's water system difficult and costly to operate and maintain; and
- Linking Lake Oswego to other water sources that can provide emergency and supplemental sources of supply.

The Joint Water Supply System Analysis Report (Carollo, July 2007) showed the Lake Oswego Tigard Water Partnership was the least cost option for both communities. Lake Oswego customers will save millions of dollars by sharing water system improvement costs with Tigard. Tigard customers save money, too, by lowering future rate increases that would be needed to purchase water from other suppliers. Tigard also gains ownership in a drinking water source.

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Learn More

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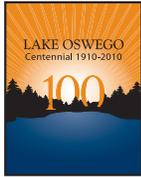
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**Lake Oswego · Tigard
Water Partnership**
sharing water · connecting communities

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