Panther Creek Reservoir

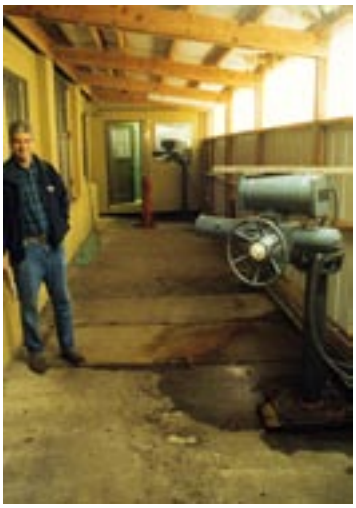
The City of Everett owns and operates a water supply system that includes raw water storage, treatment, transmission, and distribution. The existing finished water distribution system had no capacity, occasionally complicating operations and requiring the water treatment plant to respond to demand changes on the transmission line. Carollo helped to prepare preliminary and final design documents for a reservoir located on the finished water transmission system. The new reservoir is located at the existing screen house which provided the water treatment before the water treatment plant was constructed.

HIGHLIGHTS

- 3-million-gallon water reservoir, expandable to 6 million gallons.
- Hydraulic modeling of the water distribution system.
- Coordination with City staff to determine operational goals.

Carollo's role in the design of the new reservoir was to address the following issues:

- Reservoir capacity.
- Reservoir location and elevation.
- System flow control.
- Overflow and dechlorination systems.
- Inlet/outlet configuration.
- Water circulation within the reservoir.



The new Panther Creek reservoir will be located at the site of the original screen house which provided the only treatment of raw water from Lake Chaplain until 1983.

Carollo first determined the reservoir capacity by reviewing Everett's demand projections and operational goals. This involved discussing the operational goals in workshops with Everett's operations staff, including emergency and normal operations related to the water treatment plant and distribution system facilities. After determining capacity, Carollo worked with the prime consultant and Everett to locate the reservoir on the site and evaluate various configurations including round, square, and rectangular shapes.

This portion of the project included computer hydraulic modeling of Everett's transmission system. Carollo used the computer model to verify proper system operation during normal and emergency operational scenarios. Carollo used the results of the computer modeling to recommend the proper base and overflow elevations and the outlet flow control mechanism.