



Geren Island Temperature and Flow Monitoring System  
Stayton, Oregon

**Client:**

*City of Salem*

The City of Salem's primary source for drinking water is the North Santiam River. Water from the North Santiam River is processed through slow sand filters at the Geren Island Treatment Facility. The City decided to develop a temperature and flow monitoring system for the treatment plant.

The objectives of the temperature monitoring were to provide a means for reviewing historical fluctuations at selected locations along the river and the temperature of system discharges into the river.

The system provides near real-time flow



monitoring at various locations so that the City can monitor flow rates throughout the treatment facility. In addition, the results of the flow monitoring are used to calculate a water mass



balance to account for flows in and out of the treatment system.

Water level data is also collected at the temperature monitoring locations. The City plans to use the water level data in conjunction with rating curves to monitor low flow conditions in the river.



Engineered Monitoring Solutions (EMS) was hired by the City to design and implement the monitoring system. A variety of monitoring station configurations were designed and constructed to encompass the variety of site conditions on the project. The temperature and water level data are obtained using a combination temperature and water level sensor.

Installed pipe flow meters, weirs, and stream gauging stations are used to monitor the flow into and out of the treatment facility. Data is communicated through a network of solar powered remote radio stations to a base station radio at the operations center. The base station radio is integrated with a



PLC on the existing SCADA system network. A database tool was configured for the project that interfaces with the SCADA system historian software and provides a simple but effective tool for reviewing and evaluating data based on the different user needs.

