



Neahkahnie from the air ¹



Mountain Reservoir ²



Hillcrest Reservoir and treatment plant ²

Neahkahnie is a small coastal community perched on the side of Neahkahnie Mountain, just north of Manzanita City limits in Tillamook County, Oregon, USA. Water supply is from four natural springs on the mountain which, with a State Park and forest on the lands above, is a clean and ideal source of water. In 2005-2006, significant improvements to the water supply were undertaken, including several miles of replacement water mains, the new Mountain Reservoir, refurbishment of a second reservoir, the installation of new spring beds and improved security fencing.

When it came time to update the telemetry system, General Manager Rich Felley wanted an easily expandable system with improved graphics displaying reservoir levels and flow trends, flow metering, control of each pump, adjustable pump start and stop setpoints, remote internet access and alarms sent to the Duty Operator's cell phone. He also wanted to own the equipment outright, thereby minimizing the ongoing monthly costs of leasing a system.

The old system had been in use for 20 years and has been replaced entirely with a new system designed, manufactured and installed by Abbey Systems Inc. OR, USA. It uses Aspex™ SCADA software and Swampfox™ Remote Terminal Units installed at each pump station and reservoir site. At the two key reservoirs, local screens connect to the Swampfox RTUs and display reservoir levels, pump statuses and flow rates from both sites.

The SCADA system is located in forested mountain terrain. Radio, cellular, WiFi and line options for communications between the pump stations and reservoirs were considered and 2w line chosen as the most cost-effective and reliable option. NKN WD purchased their system outright to ensure that it will be available through any emergency and allow autonomous operation, even in the event the internet is unavailable.

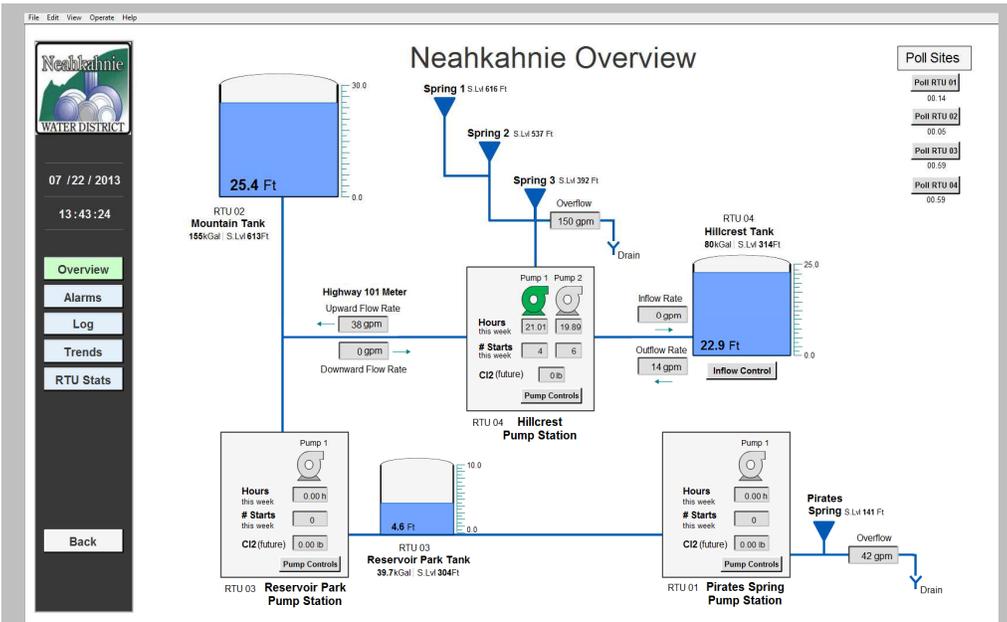
At a glance Operators can now view and control the system from not only the Water Treatment plant, but anywhere they can log in with secure internet access. Alarms are sent out using email and an SMS Gateway to cell phones. Operators can connect via the internet to review the status of the system, levels of the tanks, acknowledge alarms, review the log to see what's happened or review any of the trends stored in the online database. The project was also a good opportunity to relocate out of the tsunami zone, so that the system is more likely to remain operational after an earthquake and tsunami event.

Key Benefits

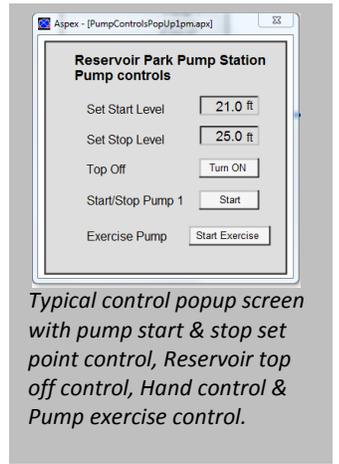
- Graphics and Internet Access
- Remote Control of the pumps
- Set point Control to start and stop pumps
- Alarms sent to email and cell phones
- Water flow and Pump Station performance reporting
- Ownership of the system and communications network

“I’m very happy with the job Abbey Systems have done. It’s exceeded my expectations and I have no hesitation recommending them to others...”

Richard Felley
General Manager, NKNWD



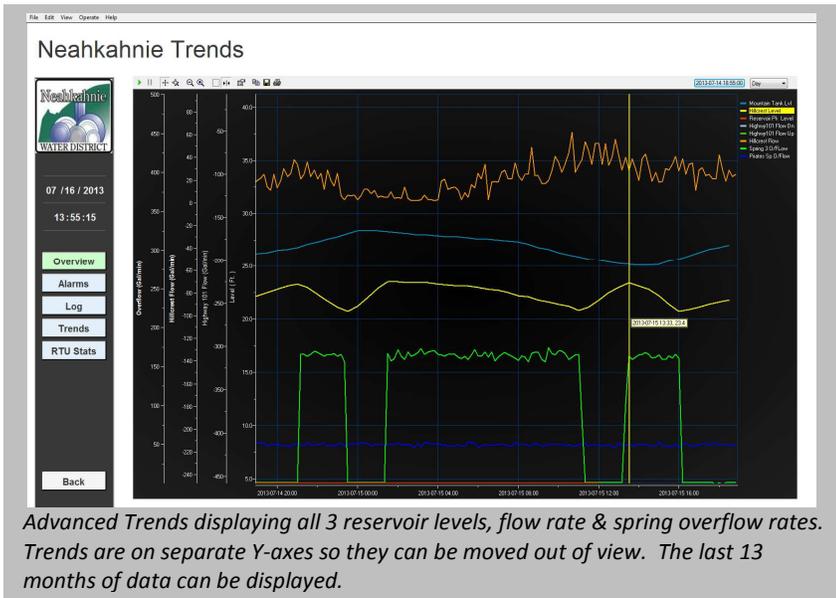
System Overview Graphical screen with navigation bar and access to trends, Alarm list, Log file, poll buttons, RTU stats. Individual Pump Control is via popup screens as shown ->.



Typical control popup screen with pump start & stop set point control, Reservoir top off control, Hand control & Pump exercise control.



Alarms are sent to cell phones as SMS text or emails



Advanced Trends displaying all 3 reservoir levels, flow rate & spring overflow rates. Trends are on separate Y-axes so they can be moved out of view. The last 13 months of data can be displayed.



At both Mountain & Hillcrest Reservoirs there are local touch screen displays connected to the Swampfox RTU. These display Reservoir levels, pump status and flows in the system.



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Site photos
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