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Tom Hoffert
Operations Manager,
Carson City Public Works
Dept.

Wonderware SCADA Solution Helps Carson City Public Works Make Operational Efficiency Improvements That Save Money and Increase Productivity

Carson City, NEVADA — Named after frontiersman Kit Carson, Carson City, Nevada, is known for its fresh air, beautifully rugged natural surroundings, and its proximity to the casinos of Reno and skiing in Lake Tahoe. Carson City is the capital of Nevada and has been a self-governing municipality since 1972. The Carson City Public Works Dept. manages all the water resources for Carson City and County. Its mission is to be completely self-sufficient - acquiring, using and re-using 100% of its own water resources.

Since the summer of 1992, Carson City Public Works has been using a Wonderware SCADA Software Solution to manage both water purification and wastewater recycling. The biggest benefit that the utility has gained from using Wonderware software is operational efficiency improvements, which directly relate to cost savings. Carson City Public Works also benefits by remotely accessing and managing vital information in real time, leading to better-informed decision-making.



Wonderware Software is the Standard

Carson City Public Works has standardized on a Wonderware SCADA Software Solution because it has helped the utility to achieve tremendous improvements in productivity, can be adjusted to suit their needs, and is extremely easy to use.

According to Alan Kotsull, an electrical instrumentation technician for Carson City Public Works, "Several years ago, a contractor brought in InTouch version 3.5 and said, 'Here's your HMI.' We used to use a competitor's HMI. But the InTouch HMI was so great. We've been using Wonderware ever since."

Dennis Maple, Carson City's control systems supervisor for water and wastewater management, has gradually enhanced the water and wastewater management system with additional Wonderware software products. The Wonderware SCADA Software Solution now consists of a plant historian, analysis clients and increased remote management capabilities. "Basically, here at Carson City Public Works, we've adopted Wonderware as our standard platform for utilities for both water and wastewater management, said Maple. "We use Wonderware's InTouch for Terminal Services software, the IndustrialSQL Server historian and ActiveFactory client access tools. I like the software. I would say that one of the strengths of Wonderware is its flexibility and ease of use. It's powerful and yet it's easy to control."



Close-up View of Clarifier

The Fire

Back in 2004, there was a huge fire in the area surrounding Carson City's primary water source called The Falls. The fire decimated much of the forests back behind the water treatment facility. In fact, because the fire was so close to the plant, it was unsafe for personnel to go out there and check the water levels. The fire department evacuated the entire area. Therefore, the only way that water management personnel could tell if the plant was still operational was by checking if the Wonderware software was still receiving information. "As long as I had a signal, I had a building!" commented Maple with a chuckle.

During the fire, the Wonderware SCADA system helped the water management staff ascertain whether they needed to supplement their water reserves from other areas to fight the fire -- or to preserve the level of service for their customers until the fire was contained.

Incredible Productivity Improvements

Carson City Public Works has been able to make incredible productivity improvements since installing the Wonderware software solution.

"The software is helping Carson City become more efficient by taking care of tasks that used to be required by people, be it transferring or compiling information. With the Wonderware software, these are now automatic functions," commented Maple.

"I believe Wonderware makes my job a lot easier," added water operations chief, Rit Palmer. Previously, Palmer had to drive across the county several times each day to

get the information he needed. "Now it's a click. It's a few seconds to do what used to take hours to do driving across town," Palmer remarked.

Dennis Maple described his experience using Wonderware software, including its ease of use and the fact that his staff can view information "both graphically and in trend analysis." The software also helps Maple identify opportunities to make efficiency improvements. "Wonderware reveals any shortcomings of our system. We can tell if a pump is becoming inefficient or if a tank is not getting the proper water it should have, and that allows us to go back to keep our equipment working optimally," Maple said.

The public works staff has come to rely on Wonderware software, not just during public emergencies like that unexpected conflagration in 2004, but day-to-day. "The best thing I like about the Wonderware software is the time savings and the convenience. It offers the controls. I can see everything I need to see. Without the system, we're blind," Palmer remarked.

The Wonderware SCADA Software Solution also helps top-level managers like Tom Hoffert save significant funds by not having to make additional investments in hiring new personnel. "We have not had to increase our staff on the water management or the wastewater side because we keep enhancing our automation capability," Hoffert said. As a result, "Carson City has realized about a 50% reduction in staff time."

Hoffert added that the software enables him and his staff to "think out-of-the box to increase overall efficiencies." Overall, he believes that "managers can make much better decisions and quicker" as a result of the fast access to accurate information provided by the Wonderware software, and the fact that everyone can access it remotely.

Remote Management

Wonderware software gives the water management staff and managers at Carson City Public Works the ability to remotely control both the water and wastewater systems and remotely collect data. "Remote management has allowed us to save us a tremendous amount of labor," Maple commented.

And the benefits of remote management extend beyond the plant facilities. "The personal benefits that I as a manager have been able to use is the ability to access the SCADA systems either from home or different offices or in meetings at different facilities," Hoffert remarked. "I personally like the software because I can be at home

or wherever I want to be with my family and still have access to the SCADA systems. I can see exactly what's going on. During the summer, which is our peak irrigation time, I can actually go on vacation now without worrying about the level of service we are providing. All of the information is right there."

Regulatory Compliance

The Wonderware SCADA software closely monitors temperatures, voltage, variable frequencies and a variety of other metrics such as turbidity levels, which are kept in tight compliance with EPA standards. If the turbidity increases even slightly, an alarm is triggered throughout the system.

Collecting accurate data is vital to Carson City Public Works because all of its water is provided in compliance with the Safe Drinking Water Act and adopted amendments. And of course, Carson City Public Works also complies with EPA regulations.

Wonderware's IndustrialSQL Server historian is an important part of this process. "Since we've incorporated InSQL software into our SCADA system, we've been able to archive all the data we've collected. We're later able to draw upon that data at anytime for later field analysis, or trend analysis that we do to see how well the system is operating," Maple said.

Wonderware's ActiveFactory software also has saved Carson City Public Works a great deal of time in generating reports for regulatory compliance. "The ActiveFactory client access tools have allowed us to build reports that are required by regulatory agencies," Maple mentioned. "We have to report on both the water and wastewater side. The automation significantly reduces the staff time required to produce these reports."

System Maintenance

Maintenance is a big part of consistently providing clean water to the community and properly recycling the wastewater.

"The software helps with maintenance in that it keeps all of that information logged in there, like the graphs and the trends, said Palmer. "We use that information daily to see what the trends are. At any given moment, I can look at a trend for the day, for the month, for the year." The ability to track these trends so closely enables Palmer's team to replace equipment before it breaks down and to clean it regularly, adding to the reliability of

Carson City's water resources.

"Because we're able to anticipate problems and perform proactive rather than reactive maintenance, there are fewer 2 a.m. call-ins!" added Kotsull with a beaming smile.

A Future with Wonderware

Pleased with the benefits they have received from the Wonderware SCADA Software Solution, Carson City Public Works plans to expand its Wonderware system in the near future. "Our next evolution is to further automate the system and add PDAs, wireless, handheld, clients, etc.," said Hoffert. "We will have more mobility and acquire more data to improve our efficiencies."

Dennis Maple also looks forward to a future with Wonderware. "Wonderware software solutions offer Carson City Public Works increased operational efficiency, tremendous time savings, powerful data analysis and accelerated reporting capabilities," Maple said. "I would recommend Wonderware software. It's an extremely powerful package, easy to use in almost any application."

Hoffert agrees. "If you are looking to redirect your personnel to make more money or keep your profit line where it needs to be, then Wonderware is a product that you should consider."



Aeration Pool



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