



South Carolina
Office of Regulatory Staff

THE WATER WELLSPRING

A Flowing Source of Information for Water and Wastewater Utilities

Winter 2017

Workshop 2017

“Protecting the Future through Sustainable Planning”

The ORS water/wastewater workshop is scheduled for April 14, 2017, from 8:45 a.m. – 3:00 p.m. in the PSC’s Hearing Room. Topics include using GIS and Webmaps; preventing catastrophe in a flood; cybersecurity; customer communication planning; and planning for climate change and wastewater infrastructure resiliency. Speakers from CDM Smith, US Department of Homeland Security, Ni PMU, and Hazen and Sawyer will present. Please make plans to attend! Registration forms will be emailed and available online January 23, 2017.

System Managers: Adjust Your Rates for More Revenue

Wayne Cannon, Bud Mason, & John Rauch of Ohio RCAP

Upon realizing that you need more revenue you should make needed rate adjustments. If your rates have already exceeded the threshold of unaffordability then you can eliminate or delay needed maintenance, capital projects, and funding your reserve to keep expenses down or you can be more proactive and look inside and outside the utility for cost savings and improved efficiencies.

Inside your system you can do the following:

- Make sure your cash registers (water meters) are working.
- Update fees, deposits, and service charges.

- Collect overdue accounts.
- Add new paying customers without adding new debt by making sure everyone is getting billed (you'd be surprised how many that don't).
- Put your money to work (i.e. shop around for bank services).
- Review your expenses and ask why you are buying that. Did you take advantage of volume and early pay discounts?
- Have a water audit performed to determine the amount of non-revenue, apparent, and real water loss that you have and develop a plan to reduce the costs associated with it.
- Conduct an energy audit to identify ways to lower your energy usage and thus your energy bill.
- Perform a staffing analysis to determine if the staffing needs are being met. Do you need to restructure your staff and your processes to get better efficiencies? Develop incentives for staff to come up with ways to do things better and faster. More staff can be better when it allows you to perform maintenance and light construction work in-house at a lower cost.

Outside your system there are things you can do as well. Shop around for professional services that you utilize to ensure that you are getting the best bang for your buck. This might include auditing services, insurance providers, or engineering services. Develop partnerships with neighboring systems. Partnerships can range from informal cooperation, such as operator-to-operator mentoring, to ownership transfer with managerial and/or physical consolidation. If you partner, could you find a better more cost-effective way to do your job? Partnering with the RCAP network is a great example.

Routine Screen Maintenance Tips that Can Dramatically Improve Plant Performance

By Walt Shelmet, [Hydro-Dyne Engineering](#), Inc.

All screen types must be properly maintained to perform at required levels to protect sophisticated downstream processes. Routine maintenance of headworks equipment not only improves the performance and lifespan of the screening systems, it also dramatically improves the function of the entire treatment plant system through improved operational efficiencies, lower energy and maintenance costs, and reduced maintenance or replacement of downstream processes. While operators should always follow the manufacturer's recommendations, below are key maintenance items for multiple styles of headworks equipment to maintain optimal performance throughout their life.

For All Screens

- Grease all bearings on the equipment with manufacturer's recommended lubricant.
- Inspect drive motor and gear reducers to ensure proper venting. Lubricate regularly.
- Check timers, variable speeds, differential level sensors and other programs.
- Regularly inspect level sensing systems. Transducers and/or floats need to be cleared of any debris that would impact performance.

Bar Screens (Single Bar and Multiple Rake)

- Regularly lubricate the rack and pinion gear on single arm bar screens.

- Inspect and clean the chain, which tends to easily foul with rags and debris.
- Rake teeth are a common maintenance item. Bent or broken teeth will cause the rake to not properly engage with the rack and potentially damage the screen.
- Lubricate and replace wiper blades as necessary.
- Inspect the lower and upper tracks to identify issues that may cause significant problems.
- Ensure drives with chains are kept tensioned and lubricated.

Traveling Band Screens (Center and Through Flow)

- Ensure spray wash systems are cycling on and off and water pressure is at the required level.
- Inspect rotating/fixed brushes for significant fouling or damage and clean as necessary.
- Regularly inspect plastic grids for damage and broken teeth. Replace as necessary.
- Ensure drives with chains are kept tensioned and lubricated.

Spiral Screens

- Ensure shaft is clear of any large debris that would disable it from pulling screenings out.
- The brush around the screw is a common wear item. Replace as necessary.
- Regularly inspect wedgewire and perforated troughs for wear and replace as necessary.
- Ensure spray wash systems are cycling on and off and water pressure is at the required level.
- Ensure strainer solenoid valves operate properly.

Step Screens

- Regularly inspect the lamella for signs of wear as it can be easily damaged.
- Ensure the bottom of the grid is free of large debris that can significantly damage the lamella.
- Clean rags from the unloading area at the top of the screen.

Incline Drum Screens

- Inspect drum seal to frame for signs of wear and leakage. Replace as necessary.
- Regularly inspect the receiving hopper for ragging and clean as necessary.
- Ensure spray wash systems are cycling on and off and water pressure is at the required level.

Screenings Handling Compactor and Conveyor Systems

- Inspect for buildup of large solids on auger and spray off components as necessary.
- Briefly cycle the equipment to check spray wash nozzles. Clean as needed.

Walt Shelmet is the director of service and engineering at Hydro-Dyne Engineering (www.hydro-dyne.com).

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News From Around the Country

The Future of Water Filtration

A new method of water filtration has been introduced to the U.S. market. BATTa Technologies and a Swedish manufacturer of peat-based contaminated-water filtration systems have partnered to design a filtration media, AFX Absorber, which removes 99.9% of petroleum and heavy metals from contaminated water. The peat, which is the filtration media, is hydrophobic and absorbs more than two times the contaminant than activated carbon. The AFX Absorber is 100% natural and will not leach contaminants after absorption. It is effective on both land and water as a spill-response absorber. It is easily transferred between sites and is 100% biodegradable. It does not require observation and is equipped with a stop function that will stop operation and an alarm system that will contact the operator when the contaminant area is empty or the filter is saturated. The system is also equipped with data monitors and auto shutoff switches so no contaminated water will be left untreated.

Please visit www.battaenv.com for more information.

Reference: Peat-Based Water Filters Make Debut in U.S. (n.d.). Retrieved December 21, 2016, from http://digital.waterworld.com/waterworld/201611?sub_id=Bia5IOPNkQ7Vp&pg=23#pg23

Webinars for Small Water Systems

The Environmental Finance Center Network (EFCN) is offering free webinars. Upcoming topics include “Advice on Water System Partnerships,” “Achieving Revenue Stability Through Your Water Rate Structure,” and “Retaining Your Workforce”. Go to www.efcnetwork.org to register.

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