

**LIFT Scholarship Exchange Experience for Innovation & Technology (SEE IT)
Sponsored by: WE&RF, WEF and NACWA**

TRIP REPORT

SCHOLARSHIP UTILITY: Washoe County – Community Services Department, Reno, Nevada

SCHOLARSHIP UTILITY CONTACT: Lydia Peri, Environmental Engineer II, LPeri@washoecounty.us

ATTENDEES: Lydia Peri

TRIP DATES: July 2 – July 12, 2017

UTILITIES/SITES VISITED: Hampton Roads Sanitation District, Virginia

TECHNOLOGIES/INNOVATIONS SEEN: Ozone-biologically activated carbon and advanced oxidation including ultra-violet (O3-BAC-AOP), to achieve advanced purified wastewater effluent meeting drinking water standards.

TRIP BACKGROUND and RATIONALE (250 WORDS): *What technology did you select to visit? What is the problem you are trying to address? How did you envision the LIFT SEE IT scholarship trip helping your utility?*

Washoe County (Nevada) selected to visit Hampton Roads Sanitation District (HRSD) to observe their SWIFT Advanced Water Treatment pilot program. In Northern Nevada, eight regional agencies (including Washoe County) are presently exploring the feasibility of a potable reuse project that has many similarities to SWIFT. The Northern Nevada agencies are implementing indirect potable reuse as a total water management based initiative, through a multi-phased feasibility study, including pilot testing, demonstration projects, regulatory framework, and public engagement.

Washoe County wanted to have a hands-on interaction with HRSD to learn about their SWIFT experiences and to gather information that could benefit Nevada's selection of treatment technology. Water treatment technologies of interest include ozone-biologically activated carbon, advanced oxidation including ultra-violet, and soil aquifer treatment for groundwater augmentation purposes. Washoe County is motivated to understand HRSD's linkages between treatment and groundwater replenishment while learning more about their monitoring and testing protocols.

Collaborating with HRSD's SWIFT program has tremendously helped the Northern Nevada team in developing a demonstration project for potable reuse. HRSD's treatment technologies for advanced purified wastewater and groundwater replenishment have provided an insight on how to implement and operate a potable reuse project. This exchange has provided Washoe County and the Northern Nevada team with invaluable knowledge that will reflect in a significant positive change to Nevada's effort. Thank you to HRSD, WE&RF, WEF and NACWA for providing Washoe County with this opportunity!

TRIP SUMMARY (1 page max. Please include 10 photos and a 1-2 minute video montage from the trip. The video does not need to be professional, however if you have the means to create a professional video feel free to do so): *Why did you select the specific utility and technology for the visit? Based on your visit, do you think this technology/approach works for your utility? How useful was the trip in your decision making process? What were some of the trip highlights and takeaways?*

Washoe County (Lydia Peri) visited Hampton Roads Sanitation District in Virginia Beach, Virginia during the first 2 weeks of July 2017. Washoe County chose to visit HRSD because of how closely their research on potable reuse relates to Northern Nevada's goals of developing a similar demonstration project. HRSD's treatment technologies for their SWIFT program are very similar to the vision of the Northern Nevada team; therefore, witnessing these technologies in operation at a pilot scale has provided an inspiration and verification of Nevada's planned approach. Washoe County's main wastewater treatment facility is the location of the current Nevada O₃-BAC pilot unit for WE&RF Project 15-10. Observing HRSD's operation of their SWIFT O₃-BAC pilot provided insight on tips and tricks for optimizing performance, which Washoe County will apply to the 15-10 pilot and future demonstration projects.

After observing the SWIFT pilot technology, Washoe County believes that this treatment technology and approach would not only work for Northern Nevada, but tremendously benefit the region. The timing to visit HRSD was ideal to Washoe County as the Northern Nevada team is presently developing its basis of design for treatment processes supporting the pilot testing research, conducting hydrogeological investigations and crafting an operational plan. Investigations into innovated use of O₃-BAC technology offers promise as a cost effective treatment option for Northern Nevada and has confirmed that Washoe County and the Northern Nevada's overall project approach is sound.

Over the week and a half experience with HRSD, Lydia spent her days working with various departments and players that make the SWIFT program possible. Several days were spent working with the SWIFT pilot team, primarily comprised of university students under direction from Dr. Charles Bott and Germano Salazar-Benites. Topics included sampling protocols and frequency, regular maintenance activities, and process optimization and monitoring. Washoe County and Lydia were also interested in the hydrogeologic research and the public outreach component of the project. Lydia was able to gain information and sample materials from the public outreach staff to learn more about what worked and what didn't when talking to the public. Lydia also worked with the hydrogeologist to learn about methods and swap ideas back and forth regarding the Nevada teams' hydrologic plan and timeline. Spending time with these professionals was incredibly beneficial to gather new information and material that will directly benefit the Northern Nevada team.

Overall, Washoe County's experience with Hampton Roads Sanitation District was fantastic and allowed the exchange of significant technical and nontechnical knowledge regarding the SWIFT pilot program. Washoe County looks forward to staying connected with HRSD and hopefully form a collaboration in the future.