

LIFT Scholarship Exchange Experience for Innovation & Technology (SEE IT)
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TRIP REPORT

SCHOLARSHIP UTILITY: Loudoun Water

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ATTENDEES: Bradley Schmitz, Micah Vieux, Kendra Sveum

TRIP DATES: April 17 – 22, 2022

UTILITIES/SITES VISITED:

Utilities in West & Central Florida			
Tampa Bay Water 2575 Enterprise Rd. Clearwater, FL 33763	Pinellas County Utilities 14 S. Ft. Harrison Ave. Clearwater, FL 33756	Toho Water Authority 951 MLK Blvd. Kissimmee, FL 34741	Altamonte Springs 950 Keller Rd. Altamonte Springs, FL 32714
Pasco County Utilities 19420 Central Blvd. Land O'Lakes, FL 34637	Hillsborough County 601 E. Kennedy Blvd. Tampa, FL 33602	Orange County Utilities 9150 Curry Ford Road Orlando, FL 32825	-

TECHNOLOGIES/INNOVATIONS SEEN:

Utility	Technology
Tampa Bay Water	Master Water Plan, Integrated Hydrologic Model, Climate Modeling, Optimized Regional Operations Plan (OROP), Demand Forecasting
Pinellas County Utilities	Mature reclaimed water program, research program
Toho Water Authority	Indirect reuse pilot project (effluent ozonation and rapid infiltration basins), mature reclaimed water program
City of Altamonte Springs	pureALTA potable reuse demonstration, reclaimed water program (project APRICOT), stormwater harvesting (A-FIRST)
Hillsborough County	South Hillsborough Aquifer Recharge Program (SHARP), direct potable reuse (DPR) demonstration, reclaimed water
Pasco County	Mature reclaimed water program
Orange County Utilities	Mature reclaimed water program, startup utility research program

TRIP BACKGROUND and RATIONALE:

Loudoun Water's reclaimed water program has delivered >682 million gallons of reclaimed water to customers, primarily data centers, helping to save an equal amount of potable water while reducing nutrients discharged to the Potomac River and Chesapeake Bay. In recent years, the organization conducted a market study on non-potable reuse system expansion and an exploratory study to define potential drivers, considerations, and pathways for potable reuse. With the commissioning of Trap Rock Water Treatment Facility, ongoing expansion of Broad Run Water Reclamation Facility, and acquisition of new reservoirs and quarries for long-term water storage and management (i.e., augmentation and/or blending), Loudoun Water is equipped with advanced treatment technologies and assets, which are often considered quintessential in potable reuse schemes. Thus, the organization is aiming to learn more about reuse configurations being employed by peer-utilities in West-Central Florida. We seek to build relationships and better understand the key challenges associated with the transition from non-potable to potable reuse water service.

Important factors for consideration include changing regulatory paradigms, contaminants of emerging concern, and technological approaches to ensure utility level of service goals. Water and wastewater utilities in Florida have been implementing water reuse programs over the past several decades, with great success, positive environmental impact, and public embrace. Therefore, our staff visited seven utilities across West and Central Florida to learn about several aspects of their water reuse programs including, but not limited to, identifying drivers, guiding staff activity, setting executive and Board expectations, developing adaptive management frameworks and strategic plans, executing research/pilot/demonstration projects, navigating legislation and regulatory considerations, and spearheading public outreach and education.

The key takeaways from this program will contribute information to several initiatives related to Loudoun Water's water reuse program:

- **Asset Management:** Discussions with operators of well-established reuse systems will provide perspective related to changing levels of service over time, system master planning, and asset management planning.
- **Strategic Planning:** Discussing various potable reuse approaches will benefit ongoing strategic planning including frameworks for potable reuse permitting; piloting treatment, sensor and control point monitoring; and coordination between the potable and reclaimed water supply programs.
- **Research Programming.** Focus on utility research programs will aid in structuring an applied research committee and a process for prioritizing research investments.
- **Peer Networking.** Establishing connections to a network of peer utilities on a range of water reuse implementation issues will allow an ongoing dialogue with perspectives that are not available locally.

TRIP SUMMARY:

Why did you select the specific utility and technology for the visit?

As Loudoun Water explores the potential transition to providing additional water reuse services, our staff aimed to learn from peer utilities that have experience implementing and managing water reuse programs. All of the utilities we visited have valuable experience managing, operating, and growing water reuse services – many for several decades. Several of the utilities also have experience in planning and executing pilot/demonstration studies and/or formulating research programs to determine the feasibility of potential reuse pathways and other key questions facing the utility in the near and distant future. Lastly, Tampa Bay Water provided a unique perspective to water reuse as a wholesale provider and also shared their experience creating a Master Water Plan and integrating sophisticated modeling into day-to-day operations and decision-making.

On your visit, do you think this technology/approach works for your utility?

Loudoun Water is already equipped with assets and advanced treatment technologies capable of expanding water reuse services. Although the utilities we visited utilize different technology, our staff was able to learn about several asset management, strategic planning, research/piloting, modeling, and public outreach approaches that we can incorporate into our short and long-term water reuse services.

How useful was the trip in your decision-making process?

This trip outlined the drivers, considerations, and unintended consequences that need to be considered in our decision-making process. If/when the drivers in our region further support the exploration for providing potable reuse services, our staff will be able to follow a similar approach for planning, piloting/conducting research, implementing, and communicating the transition in services. Key to our decision-making will be creating multidisciplinary committee tasked with building a use-case for reuse in the region - similar to the Florida Potable Reuse Commission that established the framework for implementation of Potable Reuse in Florida.

What were some of the trip highlights and takeaways?

Each utility provided a unique perspective regarding potable reuse, yet all shared common ground that potable reuse was reasonable (and potentially necessary in some cases). All of the utilities stressed that reuse scenarios require careful planning, design, and implementation. We also were able to share discussions with several key-members of the Florida Potable Reuse Commission. Hearing their first-hand stories and documenting their experiences will go a long way in guiding our staff exploring potential potable reuse pathways. This program created strong professional and personal relationships that are already proving to be fruitful for partnering in research projects. Walking through the pureAlta advanced water treatment demonstration facility was incredibly impressive and insightful. Watching an alligator swim through a reclaimed water reservoir was fascinating! Of course, the warm and sunny weather in Florida was delightful!



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Tampa Bay Water – staff on the nature walk after meeting



Pasco County Utilities – Reclaimed water reservoir





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Toho Water Authority – Tour after meeting with staff



Orange County Utilities – mini water services display





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Altamonte Springs – pureAlta demonstration facility





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