

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

TRIP REPORT

SCHOLARSHIP UTILITY: Louisville and Jefferson County Metropolitan Sewer District

SCHOLARSHIP UTILITY CONTACT: Zonetta E. English, MBA, Assoc. DBIA™, Strategic Initiatives & Project Delivery Director

ATTENDEES: Kimberly Reed, Chief Innovation Officer
Zonetta E. English, Strategic Initiatives & Project Delivery Director

TRIP DATES: February 16-27, 2023

UTILITIES/SITES VISITED: Queensland, Urban Utilities:

- Luggage Point Sewage Treatment Plant
- Innovation Centre
- Luggage Point Advanced Bulk Water and Recycled Plant
- Oxley Creek Sewage Treatment Plant
- Scientific Analytical Services (SAS) Laboratory
- Innovation Precinct HUB
- Logan Water

TECHNOLOGIES/INNOVATIONS SEEN:

- Innovation Center
- Research Algae to treat wastewater
- Annamox System to treat Nitrogen
- Thermal Hydrolysis Pretreatment Center
- Instrumentation to analysis for PFAS, PFOA LC-MS/MS
- Gasification System for biosolids treatment

TRIP BACKGROUND and RATIONALE: This visit would allow MSD Staff meet the following objectives:

- Learn Operational efficiencies for Thermal Hydrolysis Pretreatment Technology and side stream treatment. MSD is currently in the 60% Design of an Biosolids Processing Solution project which includes THP technology.
- Observe Technologies and approaches to mitigate PFAS. MSD is proactive in observing/planning for regulatory requirements for PFAS/PFOA in biosolids that will affect biosolids management for all utilities.



THE
Water
Research
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- Urban Utilities' world class Innovation Centre – which leads Australia in innovation through research initiatives and world-wide partnerships with other utilities and academia. MSD is actively involved on a local, regional, and national level on research projects. We want tools that will allow us to collaborate more with academia.
- Challenges and lessons learned from regionalization efforts. Louisville MSD has an active regionalization strategy which includes the owning/operating of seventeen (17) facilities in neighboring counties to the north and south of Jefferson County, KY.

TRIP SUMMARY:

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

We would have the opportunity to observe and obtain ideas from a world-class Innovation Center. At the time of our application, MSD had recently developed an Innovation Department and Team. We are actively engaged in MSD's BluePrint 2025 Plan in which one of its critical success factor includes realizing operational efficiencies and revenue generation through strategic partnerships and Innovation. In addition, the Utility was actively engaged in operating resource recovery technology (THP) as well as investing in technology to mitigate PFAS.

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

We plan on taking what we learned to enhance our Innovation Program. In addition, we have a Progressive Design Build (PDB) Project for Biosolids Processing which includes the THP technology at our largest wastewater facility-Morris Forman Water Quality Treatment Center. This visit confirmed the need for screening sludge, continuous education for the operations staff and operational strategies to maximize biogas production from anaerobic digesters. Also, this confirmed our need of side-stream treatment and confirmed our decision for selecting the sidestream treatment.

What were some of the trip highlights and takeaways?

- Exchange of Information and resources for Research and Partnerships
- Benefits and challenges for implementing regionalization of services
- Collaboration between engineering staff and union operators.
- For the THP Technology, the implications of not including screening which resulted in significant Operations and Maintenance costs.
- The ability to see a gasification system for biosolids treatment that is energy neutral.
- We will develop a quarterly exchange to discuss on-going key research and strategic initiatives.
- The need to develop/document a Circular Economy Strategy for Utilities in the US. Educating and quantifying. Australia is leading in this effort.
- The innovation in utilizing Doctorial Students in career path rotations within UU.