

EVALUATING PHOSPHORUS RECOVERY FROM BIOSOLIDS TO ADDRESS EUTROPHICATION IN FLORIDA

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The St. Johns River Water Management District (District), with support from the Florida Department of Environmental Protection (FDEP), has undertaken a project entitled “Resource Enhancement and Recovery of Domestic Wastewater Residuals”. This project aims to identify and evaluate technologies to reduce the phosphorus (P) content and availability in biosolids and, subsequently, the potential for the P to be transported into surface water and groundwater. The project includes:

- Evaluation of existing technologies and assessment of regional needs.
- Review empirical data from technology vendors to quantify expected P-recovery performance.
- Comparison of feasible technologies based on cost, performance, and capacity.

The presentation will summarize the modeling of Water Reclamation Facilities (WRFs) in the State to estimate the ability of technologies to recover P from their solids. The presentation will also include a Life Cycle Analysis conducted on the selected technologies, a feasibility summary, and communication tailored to educate elected officials and the public on the project findings.

Twenty P-recovery technologies were screened using criteria established by the District, and seven technologies and two management practices, composting and thermal drying, were selected for further evaluation. The evaluation compared the relative cost of implementing the technologies and the associated reduction of P availability in the biosolids. The evaluation also included non-monetary criteria to identify the technologies that can support a wide range of WRFs throughout Florida.

This presentation provides a summary of the work performed and the benefits of biosolids management programs. The presentation also included information regarding how utilities can get involved in P-recovery demonstration programs should they be conducted as a next step.

PRESENTER BIO: Sarah Guzman, a process engineer at Black & Veatch, has 4 years of experience in wastewater and biosolids industry. Sarah holds a BS in biological engineering and an MS in environmental engineering from Utah State University. Sarah is the immediate past chair of the WEF Residuals and Biosolids Young Professional Committee, and she is the Co-chair of the 2024 National Residuals and Biosolids Conference.