

**Summary of Engineering and Planning (E&P) Subcommittee January 7, 2021
Meeting for January 2021 MWPAAC General Meeting**

Evaluation of Emerging Wastewater Treatment Technologies

WTD is evaluating two new technologies:

- Aerobic granular sludge to enhance nutrient removal at the wastewater treatment plants
- Ceramic membrane filtration for treating wet weather flows at the Combined Sewer Overflow (CSO) facilities

Aerobic Granular Sludge

Aerobic granular sludge is a method of growing bacteria into granules, instead of the flocs that are developed in current wastewater treatment processes. These granules are created in a column-shaped “sidestream reactor”. Within the granules, there are layers of different types of bacteria that are able to remove nutrients. These granules are then reintroduced into the secondary treatment process to allow the bacteria to remove nutrients from the wastewater stream.

WTD installed a pilot plant at West Point to evaluate nutrient removal levels, and observed 90%+ reduction. However, when the granules were added to the treatment process stream, it was difficult to differentiate between the nutrient removal from the granules and from the normal treatment processes. WTD will submit a final report to the Water Research Foundation in summer 2021.

If the process is found to be a viable technology, it could be used to retrofit existing treatment plants to reduce the amount of nutrients in the plant effluent.

Ceramic Membrane Filtration

Ceramic membrane filtration uses ceramic plates with very fine pores to screen out solid pollutants. Coagulants are added to the incoming wet weather flow, mixed, then introduced into tanks containing a series of vertical ceramic plates.

WTD’s pilot plant located at West Point produced a high quality effluent, even with significant flow variation, in a facility with a small footprint. The testing was completed in December 2020, with a final report due in May 2021.

This technology is being evaluated for CSO treatment and for tertiary treatment for production of reclaimed water.

Questions?

Lisa Tobin, Chair
LTobin@auburnwa.gov
(253) 804-5062

Gary Schimek, Vice-Chair
GSchimek@redmond.gov
(425) 556-2742