RENEWABLE NEWS

ENCINA WASTEWATER AUTHORITY

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Water Reuse Feasibility Study

In August, EWA's Board of Directors awarded a contract to RMC Water and Environment for a Water Reuse Feasibility Study. This project will identify the best path to full beneficial use of treated effluent produced by the Encina Water Pollution Control Facility (EWPCF) that is discharged to the Pacific Ocean (currently 22 million gallons/day). The scope of services includes the following tasks:

- A portfolio of options for potable reuse and recycled water projects will be developed including, but not limited to: Direct Potable Reuse (DPR), Indirect Potable Reuse (IPR), Recycled Water, and Desalination. After consideration of the benefits, limitations, and constraints of each, the options will be categorized as near or long-term, high or low-risk, and those to be explored and preserved for potential use in the future.

- A detailed analysis of the top two or three projects identified above will be conducted including consideration of: potential end-users; distribution infrastructure required; needs/limitations specific to the project; lifecycle based cost estimates; and changes and associated costs for additional treatment and monitoring that would be required at the EWPCF. A conceptual level facility layout and estimated cost of water associated with the project will be developed and compared to the cost of other water sources.

- The best long-term, ultimate water reuse project or combination of projects will be identified based on the above analysis and stakeholder input. If feasible, a phasing of the project to provide a near-term potable reuse or recycled water project will be identified, which may include a pilot project or a stepping stone to the long-term project. This project may include facilities that would be expandable in capacity to the ultimate project or may pave the way for permitting, institutional issues, or public acceptance of the ultimate project.

- Grant funding opportunities will be explored to identify applicable programs.

- A Stakeholder Involvement Plan will be developed and implemented. Stakeholders may include, but are not limited to, EWA member agencies, the San Diego County Water Authority, and the North San Diego Water Reuse Coalition.

The Water Reuse Feasibility Study should be complete by June 2017. This project is important to help ensure water reliability for San Diego County. Stay tuned for future updates.

Aeration Basin Rehabilitation Project

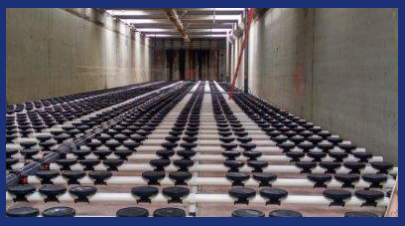
To ensure the Encina Water Pollution Control Facility (EWPCF) continues to operate effectively and complies with ocean discharge permit standards, EWA plans and implements capital improvement projects to maintain the plant's infrastructure. A recent project replaced the membrane diffuser system in three aeration basins. (This system introduces pressurized air into the wastewater, which creates an aerobic environment for microbial degradation of organic matter.) Two of the basins were constructed in 1984 and the third in 1992. The piping system was original construction and the membrane diffusers had exceeded their expected useful life.

The aeration process constitutes one of the single largest energy demands at the EWPCF. As membrane diffusers age, permeability and oxygen transfer efficiency are reduced, thus increasing power demands to meet air flow requirements. Typical diffuser service life is approximately seven to ten years for optimal performance. The diffusers in aeration basin 1 were last replaced in 2001, while those in basins 2 and 3 were replaced in 2002 and 2006, respectively. The diffusers are connected to a submerged PVC piping system that had become brittle over time and was prone to cracking and breakage. This often resulted in air leaks, further increasing energy usage.

Old piping and diffusers

Demo Complete

New piping and diffusers



Replacement of the membrane diffuser system in the three aeration basins was done sequentially with the last one being completed in July. Since putting the basins back online, there has been a dramatic reduction in air demand and consequently electricity use. This project is a win-win, as it will save money for the ratepayers and help EWA achieve its goal of energy independence.

EWA Establishes 25% Energy Reduction Target

Better Plants® U.S. DEPARTMENT OF ENERGY

Last year EWA committed to participate in the Department of Energy's (DOE) Better Plants Program (Program) that is working to improve energy efficiency in the industrial sector. The Program offers a variety of resources to improve internal expertise and save energy, including in-plant trainings, software tools, and access to DOE technical assistance programs. More than 170 companies have signed up to-date, representing about 2,400 facilities and 11.4% of the total U.S. manufacturing energy footprint, as well as several water and wastewater treatment organizations. To participate, companies must: sign a voluntary pledge to reduce their energy intensity by 25% over a ten-year period; develop an energy use baseline and track changes; and report energy data and progress each year.

Restaurant grease generates additional biogas to offset natural gas use.

EWA recently submitted its first annual report for the Program. Based on an analysis of data from 2012 through 2015, 2013 was selected as the baseline year. Taking into account influent flows and concentration compared to energy use, EWA reduced its energy intensity by 9.2% from 2014 to 2015, and by 19.4% from 2013 to 2015. Completion of the aeration basin rehabilitation project should easily enable EWA to achieve the Program goal of a 25% reduction within ten years; however, efforts will continue to identify other ways to increase efficiency and reduce operational costs.

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