



City of Santa Barbara
Public Works Department

Memorandum

DATE: July 15, 2021
TO: Water Commission
VIA: Amanda Flesse, Acting Water Resources Manager
FROM: Zach Sawaya, Wastewater Operations and Maintenance Engineer
SUBJECT: El Estero Water Resource Center Treatment Process and Energy Use

RECOMMENDATION:

That the Water Commission receive a presentation on the El Estero Water Resource Center's treatment and energy processes.

DISCUSSION:

One of City Council's top priorities is to improve the sustainability, resiliency, and energy efficiency of City facilities. El Estero Water Resource Center (El Estero) is one of the City's most energy intensive facilities, because of the high degree of energy required to treat the community's raw wastewater. For context, El Estero, on average, annually uses the equivalent energy used by 700 homes.

El Estero is designed to take advantage of gravity for helping reduce electrical demands throughout the treatment process. At the beginning of the treatment process, El Estero's effluent flows are pumped up to the highest point in the plant. Wastewater then flows through the treatment processes, out through the outfall, and into the ocean completely by gravity. Without taking advantage of gravity, El Estero's energy demands would be significantly larger than current demands.

El Estero is also equipped with cogeneration system, which is fueled by the biogas produced at the plant. This alternative energy source can power anywhere from 40% to 70% of El Estero's electrical demands, which reduces El Estero's operating costs, lowers the plant's emissions footprint, and helps offset electrical demands on Southern California Edison.

The efficient use and control of energy at El Estero is paramount as the City moves forward with sustainability and resiliency initiatives. While energy is necessary for treating the community's wastewater, staff continue to investigate opportunities to reduce energy demands and consider new and innovative options for alternative energy supplies.