

## **Sustainability 2020 Committee Project Proposal Abstract**

*Recycled Water installation, April 2017*

Project Description – The City of Los Angeles’ technical memorandum dated April 2010 evaluated and identified the USC University Park Campus as a viable customer for recycled water. As a result, USC developed a master plan for recycled water mains and received approval from the City of Los Angeles and Department of Public Health in May 2010. Since the approval of the master plan, Facilities Management Services has been installing 10” recycled water main piping around the University Park Campus based on the master plan. The infrastructure has been installed as part of larger utility infrastructure projects knowing that eventually LADWP is going to provide a source for recycled water to the campus. In March 2015, LADWP issued the draft environmental impact report (EIR) for the Downtown Water Recycling Project (No. 51066) which will bring recycled water from Elysian Park to downtown, Exposition Park, Boyle Heights and Southeast Los Angeles customers, including USC. Refer to Appendix B for a summary of the project. The EIR was certified in June 2016 and the LADWP project is targeting completion of recycled water to Exposition Park by the end of 2020 which is in line with the University’s goal to reduce potable water usage 25% by 2020.

In order for the University to reduce potable water usage, it must convert existing irrigation and cooling towers from potable to recycled water. This project covers the scope of work to change over irrigation at the major fields on campus. The fields include the following:

1. Dedeaux Field (BDX)
2. Golf Practice Facility
3. Howard Jones Field (HJF)
4. McCarthy Quad

The project also covers the addition of recycled water piping to the cooling towers located on the roofs of the following buildings:

1. Physical Education Building (PED)
2. Parking Structure A (PSA)
3. Seaver Science Center (SSC)
4. Tutor Campus Center (TCC)

### Objectives

Replacing potable water with recycled water for irrigation and industrial water uses will allow the University to meet or surpass its Sustainability 2020 water conservation goals. Central plants make up 23% of the University’s potable water usage followed by irrigation at 16%. These are two of the largest users after buildings. Until today, there has not been a source of recycled water within the vicinity of the University Park Campus. Because LADWP has a project to bring recycled water to the campus by the end of 2020, the University must ready the campus to receive the water. While Facilities Management services has been installing the main line infrastructure, this project includes the connections to the LADWP infrastructure currently proposed to be located at Figueroa/Childs Way and Exposition/Watt Way, the installation of

purple piping from the main lines to the cooling towers, the installation of piping from the main lines to the main irrigation services, changing out of irrigation control box lids, changing out of spray heads, and placing proper signage all over campus.

If the fields and cooling towers listed are converted to recycled water the overall campus potable water usage will be reduced by approximately 42 million gallons per year or 19%. This project, combined with other initiatives, will allow the University to meet or surpass its goal of 25% reduction by 2020.

### Benchmarks

- Pepperdine – According to Pepperdine’s Sustainability website, they have been recycling all wastewater generated on the Malibu campus using tertiary treatment since the construction of the campus back in 1972. The recycled water is used for 99% of campus irrigation.
- Stanford – According to Stanford’s Sustainability website, they have developed a recycled water system on campus starting with a new treatment plant at the Central Energy Facility which takes cooling tower blowdown water and recycles it for re-use in campus building toilets and urinals. According to the AASHE website, Stanford’s recycled water program provided almost 1.9M gallons in the 2012-2013 performance year.
- University of California, San Diego (UCSD) – According to the UCSD sustainability website, they utilize recycled water for both irrigation and cooling towers. Currently, 30% of campus irrigation is fed by recycled water. As of April 2015, recycled water was already in use at the university’s East Campus Utilities Plant and was offsetting potable water use in the plant’s cooling towers. The same thing was being done at the Central Utilities Plant, with recycled water expected to be in use there by the end of 2015. These two projects alone were anticipated to reduce potable water use by 120 million gallons per year in 2016. The Medical Center was also planning to bring recycled water to the utility plant on the La Jolla Health System campus. Potable water use was expected to be reduced by 20 million gallons a year by the end of 2016.
- Loyola Marymount University (LMU) - According to the LMU website, LMU started using recycled water for landscape irrigation in 1997 and currently 76% of their irrigation is served by recycled water with an estimated savings of \$70,000 per year. In 2010, they received an award from the National Water Reuse Association which claimed that they save about 49 million gallons of drinking water by irrigating 75% of its 142-acre campus with recycled water. They plan to expand the system to include all of the campus.

Risks – If the LADWP project is delayed, the Sustainability 2020 objectives for water conservation are unlikely to be met.