

The Sewer Heat Recovery program at King County Wastewater Treatment Division (WTD) takes advantage of a readily available, sustainable, and renewable energy source by recovering and putting to beneficial use heat energy that would otherwise be lost. Warm and hot wastewater flushed from homes and businesses is a significant energy source. The U.S. Department of Energy estimates that 350 billion kilowatt-hours of heat energy are flushed down the drains in the United States every year—roughly enough to power 30 million homes.

Through this technology, a portion of wastewater is captured in an underground holding tank where its heat energy is transferred in a heat exchanger, which allows a heat pump to extract that energy and transport it to a connected building's domestic hot water or heating or cooling system.

Repurposing this otherwise wasted heat energy resource is another way building owners can meet sustainability goals and positively contribute to climate action. Even better, the process can also be reversed to cool buildings or equipment by using a chiller, saving water use.

In 2019, a WTD project team worked with potential customers, community collaborators, and interested parties to gather input on the development of templates and tools to help streamline the contracting and capital project process. Two years later in April 2021, King County Wastewater Treatment Division joined forces with Alexandria Real Estate Equities, Inc., to capture sewer heat recovery at their new South Lake Union campus, becoming among first in the nation to tap wastewater heat for renewable energy. In July 2023 King County's first sewer heat recovery project went online at the Alexandria Center for Life Science – South Lake Union, a five-building, 1.6 million-square-foot mixed-use life science mega

campus. The sewer heat recovery system is expected to provide 70 percent of the campus's heating and reduce carbon emissions by 99 percent compared to a typical laboratory building in Seattle.

King County Wastewater Treatment Division is actively working to facilitate sewer heat recovery efforts by others across the country. Staff have presented information on WTD's sewer heat recovery program at numerous industry conferences and to other wastewater utilities, sharing the tools they developed that help recapture heat that otherwise would have been discarded, ultimately providing a greener future for wastewater and the next generation.

KING COUNTY WASTEWATER TREATMENT DIVISION SEWER HEAT RECOVERY PILOT PROJECT

COMMUNITY LEADERSHIP AWARD



A public-private partnership to heat and cool a new 1.6 million sq. ft. complex with a county sewer line - one of the first and largest commercial systems in the nation.

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King County | Wastewater Treatment

SEWERHEATRECOVERY
A King County renewable clean energy resource

