

City of Airway Heights Water Reclamation Project

Abstract: Like many growing cities, the City of Airway Heights has faced challenges related to expanding its sewer and water utilities while meeting increasingly more stringent regulatory requirements. Beginning in the 1990's, the City of Airway Heights purchased capacity and began discharging to the City of Spokane wastewater treatment system and supplemented its water supply with water purchased from the City of Spokane. Faced with increased sewer charges related to the City of Spokane's sewage treatment plant upgrades to meet new Spokane River discharge requirements, and declining groundwater levels and water quality in its primary water supply aquifer, the City of Airway Heights began planning for a solution to its sewage treatment and water supply issues in 2003.

In 2012, after years of planning, design, and construction, the City of Airway Heights initiated operation of its new Water Reclamation Plant, and began producing Class A reclaimed water for various landscaping and commercial applications, and recharging its water supply aquifer. The new facility has allowed the City of Airway Heights to remove its discharge from the City of Spokane sewage system and reduce the quantity of potable water purchased. This first phase of the project provides a treatment system capable of producing up to an annual average flow of 1.0 million gallons per day (MGD) and peak flow of 2.5 MGD of reclaimed water. The plant is designed for expansion up to an annual average flow of 3.0 MGD. The plant liquid stream treatment processes include: fine screening, grit removal, biological nitrogen and phosphorus removal, secondary clarification, tertiary membrane ultrafiltration, ultraviolet disinfection, and subsurface percolation fields.

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Professional Background: Allison Esvelt is a treatment system process engineer and partner of Esvelt Environmental Engineering, LLC, in Spokane, Washington. She graduated from the University of California, Los Angeles, in 1993, with a Bachelor of Science degree in civil engineering, and from the University of California, Berkeley, in 1994, with a Master of Science degree in environmental engineering. She has twenty years of experience as an environmental engineer specializing in the design of treatment systems for water, industrial and domestic wastewater, reclaimed water, biosolids, and odors and air emissions. She is a professional engineer in Washington State, and Board Certified by the American Academy of Environmental Engineers in Water Supply and Wastewater Engineering. She is also a member of the American Society of Civil Engineers, Water Environment Federation, Pacific Northwest Clean Water Association, Air and Waste Management Association, and American Water Works Association.