Sterling Natural Resource Center

CMAA Sustainability Project Spotlight submitted by: Jeanne Krueger, Advisor, Arcadis U.S., Inc.

Project Team

- **OWNER:** East Valley Water District
- **AE:** Arcadis U.S., Inc.
- **BUILDER:** Balfour Beatty

Project Statistics

- **USE:** Wastewater Recycling Facility
- **SIZE:** 8 MGD
- **CONSTRUCTION VALUE:** $222 million
- **PROJECT WEBSITE:** https://www.eastvalley.org/our-water/systems/wastewater-system/sterling-natural-resource-center/

What is the most exciting sustainable feature of your project?

One of the most significant project challenges was integrating a state-of-the-art wastewater recycling facility within a disadvantaged urban community.

The SNRC's design incorporates craftsman style elements that harmonize with the EVWD headquarters, enhancing the neighborhood's aesthetic value and providing secondary benefits to the greater community. The facility significantly enhances community engagement through its water-efficient landscaped gardens, flexible indoor spaces for events, and educational programs.

The SNRC's sustainability practices align with LEED Silver criteria, emphasizing efficiency and resource recovery. The project recycles up to 8 MGD of wastewater for groundwater replenishment and generates renewable energy onsite, reducing the environmental footprint and contributing to regional water resilience. By incorporating sustainable practices and renewable energy generation, the SNRC reduces operational costs and enhances long-term economic viability. The facility's design also supports local businesses and

disadvantaged business enterprises, contributing to economic growth within the community.

EVWD created a career pathway program and partnered with San Bernardino City Unified School District to provide high school students with hands-on training and career pathway experiences in water and wastewater treatment, furthering social and skill development within the community. At the conclusion of the program, qualified students can take certification exams necessary for entry into technical careers. The program now serves as a template for organizations to model similar partnerships with their local educational institutions.

EVWD also committed to improving the surrounding infrastructure outside of its walls for the health, safety, and welfare of the surrounding public. Improvements included new sidewalks, crosswalks, streetlights, and repaved streets. Additionally, the SNRC has created a green space for community members to gather and enjoy a healthy outdoor space. The Administrative Center includes a banquet hall and conference rooms that can be utilized by customers and organizations to host meetings, conferences, trainings, and other special events. The facility's educational programs and community spaces foster social well-being and environmental awareness, making it a source of pride for the local population. Through this multi-benefit approach the SNRC becomes a true community asset that strives to "make every source a resource" and serves as a model for future wastewater treatment plants globally.

What was the biggest challenge your team faced and how did you overcome it?

The SNRC project successfully navigated the unique complexities posed by the COVID-19 pandemic, stringent budget constraints, and high community expectations. Through innovative collaboration and ingenuity, performing in a mixed in-person and virtual environment, the team managed supply chain and labor constraints effectively. The project was delivered through a progressive design-build methodology, enabling real-time value engineering and the resolution of design and construction discrepancies. These objectives were met through the collaborative efforts of a diverse team, resulting in a facility that not only meets but exceeds community and environmental standards.

Challenges that increased project complexity included regional climate and limited land availability. The SNRC is in an arid climate, where water use efficiency is a regional priority. Recognizing this challenge, the SNRC incorporated membrane bioreactors to treat up to 8 MGD of wastewater generated from within EVWD's service area to meet Title 22 requirements for tertiary treated recycled water. The plant effluent will be used exclusively for groundwater replenishment producing added regional benefits. Land available for the site was located within an urban neighborhood which required creative solutions to meet the project's needs. Use of the membrane bio-reactor technology and the combination of subterrain and above grade equipment allowed for placement within the urban neighborhood. Traditionally, a 10 MGD facility would have

required up to 16 acres for the process equipment. The 18-acre site now includes a water efficient demonstration garden, passive recreational space, and programmed community activities. The advanced odor control system seamlessly blended the vacant parcel to the existing land uses in a manner that also supports intended future zoning changes.

About the Project

CMAA has created the Sustainability Project Spotlight as a regular focus given to member projects nationwide that are building the way to a better future.

This Sustainability Project Spotlight focuses on the Sterling Natural Resource Center (SNRC). Located in a disadvantaged urban community, this cutting-edge wastewater recycling facility is designed to enhance water resilience and support regional sustainability. This project features innovative technologies like membrane bioreactors to treat up to 8 million gallons per day of wastewater for groundwater replenishment. Its design integrates sustainable features that align with LEED Silver criteria and includes onsite renewable energy generation, reducing both environmental impact and operational costs.

The CMAA Sustainability Subcommittee is actively seeking to spotlight your projects! Please email us at communications@cmaanet.org with a project name and person to contact.