

2018 Utility Honorees

Utility of the Future Today



With Support From



For the third year, the partnership of water sector organizations - the National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF), the Water Research Foundation (WRF), and the WaterReuse Association – with input from the U.S. Environmental Protection Agency (EPA) – proudly announce the 2018 Utility of the Future Today (UOTF) Recognition Program recipients.

The 2018 program celebrates the exceptional performance of 32 public and private water resource recovery facilities across the U.S. and around the world selected by a peer committee of utility general managers and executives for innovation in community engagement, watershed stewardship, and the recovery of resources such as water, energy, and nutrients.

The recipients were recognized and honored during an October 2, 2018 ceremony held in conjunction with WEFTEC 2018 in New Orleans — WEF's 91st annual technical exhibition and conference—as well as a number of commensurate events sponsored by the partners.

The recipients receive a display flag (below) and a special certificate to further identify and promote their outstanding achievement as a Utility of the Future Today.



The UOTF concept was introduced in 2013 to guide utilities of all sizes toward smarter, more efficient operations and a progression to full resource recovery with enhanced productivity, sustainability, and resiliency. Since then many utilities have successfully implemented new and creative programs to address local wastewater and water technical and community challenges. The Utility of the Future Today Recognition Program seeks applications from national and global water systems that are transforming operations through technology, communication and innovative solutions and that have performance results as evidence.

Innovation and technology are foundational criteria for this recognition and are the basis for providing a distinction between well-run utilities and those going beyond traditional operational practices toward visionary performance.

Since 2016, the partnership has honored 105 utilities meeting the criteria of the UOTF Today Program. The partnership will continue to seek organizations that build on their success by celebrating their advancements and experiences, and by encouraging the adoption of the UOTF principles which enable organizations across a broad range of capacities and capabilities to collaborate, learn and continue to evolve as a unified sector.

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Napa Sanitation District, Napa CA



2018

★ Water Reuse

WATER
REUSE
UTILITY'S
FUTURE
TODAY

Utility Description (combine all plants if a multi-site system)

Utility Name: **Napa Sanitation District (NapaSan)**

Type (e.g., single plant, regional system, multiple plants, collection or distribution system only, stormwater, etc.):
Collection system, combined wastewater treatment plant and water recycling facility, and recycled water distribution.

Service Area (square miles):

**21.7 square miles Sewer Service /
31.3 square miles Recycled Water**

Average Annual Daily Flow or Demand (MGD):

10 MGD

Population Served: **82,700**

Location

Street Address: **1515 Soscol Ferry Road**

City:

Napa

State:

California

Country:

United States of America

Zip Code/Country Code:

94558-6247

Utility Representative Contact Information

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Organizational Culture

The Organizational Culture for Napa Sanitation District (NapaSan) starts with its mission, to “collect, treat, beneficially reuse and dispose of wastewater in an effective and fiscally responsible manner that respects the environment, maintains public health, and meets or exceeds all local, state and federal regulations.”

Our Strategic Plan identifies resource recovery as one of NapaSan primary goals, with the Board regularly establishing objectives and projects for achievement and advancement of this goal, while also emphasizing important Effective Utility Management key attributes, including reliability, financial stability, operational optimization, employee development and community outreach and engagement.

Eight years ago, NapaSan fully embraced the Effective Utility Management framework for the evaluation and continuous improvement of its operations. NapaSan was one of the first agencies in the county to use the 10 Attributes of Effectively Managed Water Sector Utilities as a framework for establishing 63 key performance indicators that have been measured, evaluated, reported to the Board and the public, and used by NapaSan management to determine where investments of time and resources are necessary to improve operations.

We recognize that in a highly competitive marketplace such as the San Francisco metropolitan area, if we are to have highly trained and skilled wastewater operators, lab analysts, and collection system workers in the future, it is our responsibility to develop those individuals now. In partnership with local community colleges, NapaSan has developed an Operator-in-Training program where individuals with minimum college coursework in water/wastewater operations can receive up to 1,800 hours of training at our Class V treatment and water recycling facility, under the direct supervision of highly skilled, experienced operators. Even though we have only 9 certified operators in total, we have developed a program to train up to 6 operators-in-training at any given time on all aspects of treatment. Additional efforts are made throughout NapaSan to bring in high school and college interns in engineering, laboratory analysis and collections, to introduce students to the possibility of careers in water.

The NapaSan Board and executive leadership believes in and actively promotes participation of employees in professional organizations and activities that promote training and education, along with technological advancement and information dissemination. For example, one of NapaSan’s directors served the California Water Environment Association (CWEA, the California member association of WEF) on its Executive Board as the Treasurer, and was the liaison to the CA-NV AWWA Section to develop a joint Advanced Water Treatment Operator Certification program that will be necessary with the development and permitting of indirect and direct potable reuse treatment facilities. Additionally, a NapaSan director currently serves as the vice-chair on the Bay Area Clean Water Agencies (BACWA) Collection Systems Committee. Several other NapaSan staff has served on the board of the CWEA Local Section, providing education and other services to members. NapaSan’s safety officer has been actively involved in coordinating the region-wide Northern Safety Day, providing safety and collection system training to hundreds in the Northern California area. And engineering staff has been actively engaged in the local Napa Engineering Association. NapaSan even funds several scholarships through the Napa Engineering Society to aid students who are interested in water professions in getting their engineering or science degrees.

These efforts to train and develop both new and existing employees in the water profession are so important that the NapaSan board has included this as an objective in its Strategic Plan (Objective 4A), and annually evaluates the General Manager on NapaSan’s efforts.

The organizational culture at NapaSan actively encourages technological innovation as well. NapaSan has participated in a number of pilot studies and academic studies to evaluate new technologies, most recently working with Dr. Kati Bell, P.E. (Stantec) and others on a WRF study (LIFT14T16) to use peracetic acid for disinfection of both activated sludge treated and oxidation pond treated wastewater, and also contributing on the Advisory Board for WRF Project 4718 “Battery Storage System Guidance for Water and Wastewater Utilities.”

NapaSan maintains an internal awards program, called the Darcy Aston Innovation Award, where managers and supervisors nominate staff for specific innovative programs or inventions. In the last two years, there have been 26 nominations. All of the projects nominated are highlighted at a District-wide “all hands” meeting, and the top three nominations each year are given awards at the Annual Awards Banquet. And last year, one of the projects was nominated for a CWEA “Gimmicks and Gadgets” award and took third place in the state-wide competition.

Innovation doesn't stop at the borders of our agency. NapaSan staff regularly present at professional conferences and trainings on the innovative projects in which we are engaged. Staff has presented at WEFTEC, Utility Management Conference, CWEA annual and regional conferences, WaterReuse California Conference, and BAYWORK specialty trainings. Topics have included performance measurement using the EUM framework, collection system rehabilitation strategies, setting up Operator-in-Training programs, activated sludge impacts from an earthquake, asset management, and the use of LiDAR to assist equipment rehabilitation in the treatment plant, among others.

Most importantly, the organizational culture at NapaSan is one that promotes excellence in meeting regulatory requirements within a safety-first work ethos. The NapaSan treatment plant has not exceeded its NPDES discharge limitations in over 15 years. In a recent audit by its Worker's Compensation insurance provider, NapaSan exceeded the average of its peer agencies in 52 of 56 applicable policy categories. NapaSan is Lost-Time Accident Free since April 15, 2015, and at EVERY Board meeting, we report on the agenda our lost-time record.

In the next section of the application, we describe NapaSan's efforts related to water reuse, but this is in no way the only Activity Area in which NapaSan excels. We are engaged in the beneficial reuse of biosolids through land application and active farming. We generate approximately half of our energy needs through the conversion of biogas to energy and the use of solar power, along with taking active measures to improve energy and chemical efficiency. We actively engage with community partners and stakeholders in the delivery of recycled water, public educational programs, a Citizens Academy, and development of new services based on customer and stakeholder feedback. The NapaSan Board, its executive leadership, and employees throughout the organization are committed not just to meeting current regulatory requirements in collection and treatment, but in becoming a full resource-recovery facility that is engaged with its customers and stakeholders to help lead the local community and the wastewater professional community into the future.

Water Reuse

Through planning and then implementing its *Strategic Plan for Recycled Water Use in 2020* (August 2005), NapaSan has expanded its capacity to treat wastewater to "Title 22 Unrestricted" tertiary-disinfected quality and to distribute that water to the surrounding community for agricultural use, landscape irrigation and other beneficial uses. NapaSan now owns, maintains, and distributes recycled water through 26 miles of main line to a recycled water service territory of over 31 square miles, compared to NapaSan's sewer service territory of about 21 square miles. In 2017, NapaSan delivered 2,165 AF (705 million gallons) of recycled water into the community, which represents over 20% of total annual flows into NapaSan and about 58% of all summer (May-Oct) flows in 2017.

- a. **How did you go about implementing the practices/activities/programs that you described in your Overview Paragraph?** The recycled water system was initially developed in response to NPDES non-discharge requirements imposed by the Regional Water Quality Control Board in the 1980's, and in cooperation with the City of Napa to allow NapaSan to distribute recycled water in the city's water service territory. Once that system was completed (around 2005, with 10 miles of pipeline), NapaSan partnered with Napa County and the Los Carneros Water District (LCWD) on a significant system expansion as a response to groundwater and surface water deficiencies in the rural, agricultural areas. Working through a multi-jurisdictional partnership (the North Bay Water Reuse Authority), NapaSan, Napa County and the LCWD secured federal grants, state grants, and low-interest loans to finance the system expansion.
- b. **What type and amount of resources were needed to support implementation?** The significant expansion of the recycled water system in the past ten years came about through the full engagement of staff at multiple agencies, including management. Finance and engineering staff at NapaSan, management and finance staff at Napa County, and volunteers from the LCWD were necessary to implement this project. There were 2 state loans, 2 state grants, and 4 different federal grants associated with this project that needed application, oversight, accounting and reporting, as well as the project management and engineering efforts to plan, design and build the projects.
- c. **Did you partner with other stakeholders or organizations as part of your implementation process?** Multiple partners and stakeholders were necessary for this project. NapaSan partnered with 7 other agencies in the three-county area of the North Bay to complete an Environmental Impact Statement/Environmental Impact

Report for expansion of recycled water, and to secure funding from the US Bureau of Reclamation. NapaSan partnered with the City of Napa to purvey recycled water in their water service territory. Napa County created a Community Facilities District to fund recycled water in the MST area, while the LCWD assessed property owners to expand into the Carneros region. LCWD partnered with NapaSan on two other federal grants from different federal agencies, and NapaSan, LCWD and Napa County jointly worked with the State Water Resources Control Board on grants and low-interest loans.

d. **What was the most critical obstacle that your utility had to overcome to be successful in this Activity Area, and how did you do that?**

The most difficult part of expanding the recycled water distribution system was ensuring that there would be users of the recycled water once the system was built. To obtain grant funding and project loans, it was necessary to demonstrate that there would be future users of the recycled water system. This was accomplished in the Napa County MST area through the creation of a voluntary Community Facilities District (CFD). Properties that were adjacent to the new pipeline could connect and use recycled water only if the land owner voluntarily annexed into the CFD. The voluntary nature of the CFD pleased the area residents in that no one was forced to enter into (and pay for) the CFD if they didn't want or need the recycled water, while the voluntary nature of the CFD gave assurances to grantors and the loan originators that there would be adequate demand for recycled water. In the LCWD area, this was similarly accomplished through a vote of property owners to self-assess themselves a property tax, with the high turnout rate and high level of voter support indicating strong demand. These results were due to the diligent, time consuming efforts of staff, consultants and volunteers holding community meetings and one-on-one meetings with land owners to discuss the community benefits of the project and personal benefits of hooking up to and using recycled water.

e. **Has “smart” information technology supported your implementation/optimization in this area? If yes, please describe.** The recycled water distribution system in the LCWD area incorporated “Smart” meters. These meters and the supporting software infrastructure allow irrigation customers in this area to get almost real-time water usage data. This access to data can help managers of these properties manage water usage, evaluate the effectiveness of any conservation efforts, and help identify any water leaks long before the customer is billed for the water use. As water meters in the rest of the NapaSan recycled water distribution system need to be replaced, they are being replaced with “smart” meters so that eventually the entire network of pipelines and meters will be integrated into this system.

f. **Where could other utilities go to find additional information on this Activity Area or the activities/practices/programs that you implemented?** NapaSan produced a short (less than 5 minute) video that describes the need for and accomplishments of the recycled water expansion program, which can be viewed at <https://vimeo.com/178341865>. The entire recycled water program is presented on the NapaSan website: <http://www.NapaSan.com>.

Measure <i>What are you measuring?</i>	Targets <i>What was your goal/intended outcome?</i>	Outcomes <i>What were your actual outcomes?</i>
% of wastewater converted to recycled water (May-Oct)	50%	58% in 2017
% of recycled water treated sold to customers	70%	83.1% in 2017
Recycled water demand compared to recycled water available	Availability exceeds demand	Availability exceeds demand by 1,534 AF in 2017