



Making Water a Career of Choice

A Compendium of Water Workforce
Case Studies from Across the Country

Originally Published January 2021.

Updated September 2022 & June 2026.



Foreword

Ensuring that all Americans have access to clean water is a top priority for EPA. Each day, communities and businesses depend on clean and safe water for daily activities that can range from drinking a glass of water to irrigating the crops that support our food supply. Behind each drop of clean water are the hundreds of thousands of skilled workers, or water protection specialists, and many others that comprise America's water sector. These "water protection specialists" are critical to the safety and well-being of our communities and serve as the foundation for virtually all aspects of our society. They are on the front line of environmental protection in this country.

Jobs in the water sector provide stable employment, meaningful careers, technical training, and important technical skills (including using innovative technologies), and a chance to make a real difference in our communities across the nation.

An occupation in the water sector is a meaningful career in public service with a clear and impactful mission to deliver clean and safe water. Water protection specialists have positive and profound impacts on the health and wellbeing of everyday Americans and our environment. They have an opportunity to contribute to the vitality of their community and be a part of something bigger than themselves.

As part of the agency's commitment to work with partners and make joining the water workforce a career of choice, EPA has recently issued [America's Water Workforce Initiative](#)¹, which serves as a call of action for many partners across the water sector to address the pressing workforce challenges facing the sector. As part of its water workforce initiative, EPA developed this compendium of case studies to illustrate approaches that utility leaders are using to help ensure that their current workers have the skills to meet both current and future challenges as they continue to provide reliable and affordable water services. Many utilities are engaging in innovative work to build community connections to attract new, talented people to the water sector. These community partnerships amplify and support both utility workforce and public engagement efforts. **Since its original publication in January 2021,**

EPA has developed six additional case studies to highlight the efforts of Great Lakes Water Authority, Metropolitan Council Environmental Services, Milwaukee Metropolitan Sewerage District, South Platte Renew, Grand Rapids Community College, American Water Works Association, and WaterNow Alliance. These new additions are included in this updated version of the compendium.

Each case study is different, but they all share a dedication to the health and safety of our communities. The dedicated water workforce professionals at the utilities highlighted in this compendium demonstrate that a career in water means making a difference in people's lives every day. EPA believes these case studies will provide valuable and useful information to help utilities across the water sector support and sustain their most precious resource—their workers.

Finally, EPA wishes to express our sincere appreciation to the following individuals who contributed the information used to develop these case studies.

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The water utility workforce case study team was led by U.S. EPA's Jim Horne (Project Manager) with important input from Leslie Corcelli and Catherine Allen.

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This product was developed with assistance from Rob Greenwood, Sarah Shadid, and Tori Bahe with Ross Strategic (www.rossstrategic.com), under contract GS-00F-0045P, EP-BPA-18-C-0001 with the Office of Wastewater Management at U.S. EPA.



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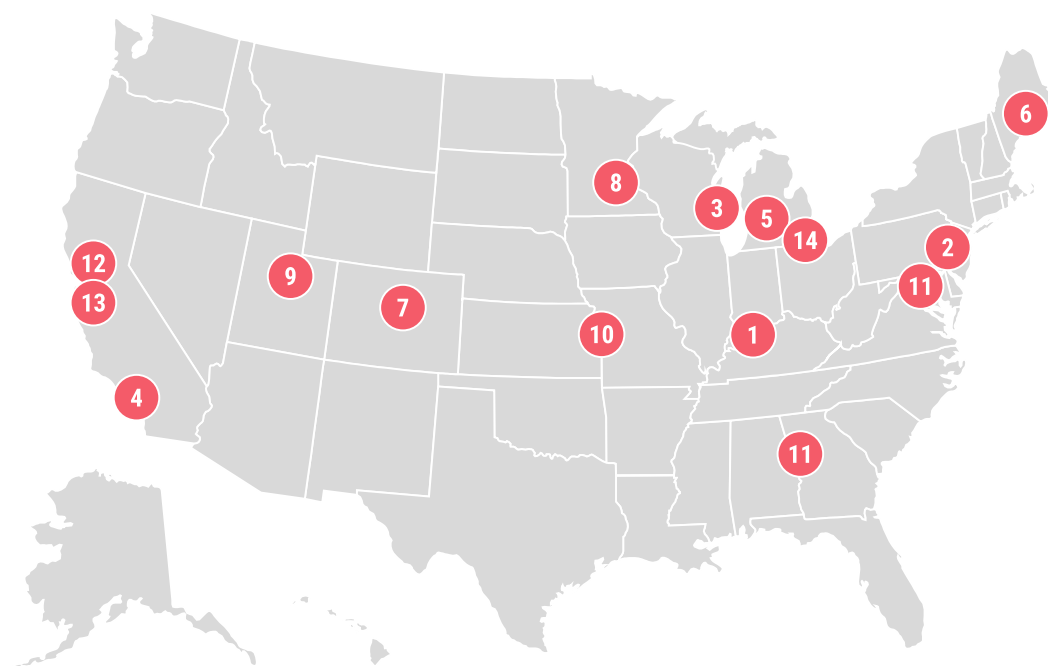


NACWA



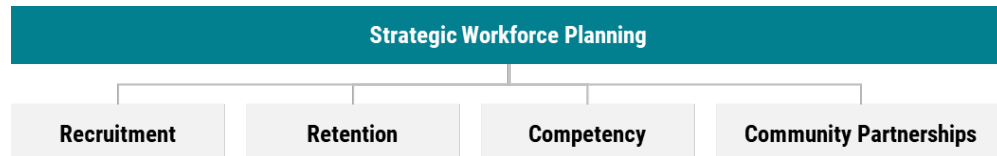
Table of Contents

Introduction	1
1. Community Resiliency Through Youth Engagement and Recruitment.....	2
2. Ensuring a Greener Future by Empowering Young People.....	9
3. Recruiting for a Thriving Regional Economy	14
4. Creating a Healthy and Inspiring Workplace Culture.....	21
5. Fostering & Educating the Leaders of Tomorrow	29
6. Internal Support for Emerging Leaders	34
7. Reimagining Values for a Positive Workplace Culture	39
8. Supporting Management and Equity Priorities.....	46
9. Ensuring the Future: Every Plant Operator Is a Potential Plant Manager	55
10. From Career Pathways to Career Empowerment.....	63
11. Building Bridges to Meaningful Employment for Vulnerable Communities.....	69
12. Connecting with Students from Kindergarten-to-Career.....	78
13. Cultivating Water & Community Leaders.....	86
14. Supporting Apprentices Through Community Partnerships	95



Introduction

The water sector faces significant challenges in recruiting and maintaining an adequate and well-prepared workforce to deliver the critical services that protect public health and support the vitality of our communities, natural environment, and economy. To address these challenges, many utilities have dedicated themselves to advancing practice in four key elements of an effective water utility workforce program: recruitment; retention; competency; and community partnerships. The following provides an overview of each of these four key elements as well as a quick reference to case study profiles that highlight each key element. Although each case study is organized under one key element of an effective water utility workforce program, many case studies encompass other elements as well.



Recruitment: Utilities with strong recruitment programs maintain a stable, robust, and qualified pool of applicants. Also, they can compete effectively for needed skills and talent. To learn about utilities that are focused on bolstering their recruitment efforts, see:

- [Louisville Metropolitan Sewer District, page 2](#)
- [Philadelphia Water Department, page 9](#)
- [Milwaukee Metropolitan Sewerage District, page 14](#)

Retention: Utilities with effective retention programs achieve desired workforce retention levels with qualified, motivated, and resilient staff. Within the utility, human resources and organizational culture can motivate staff and support retention. To learn about utilities with a strong focus on retention, see:

- [Moulton Niguel Water District, page 21](#)
- [Transformative Water Leadership Academy, page 29](#)
- [Saco Water Resource Recovery Department, page 34](#)
- [South Platte Renew, page 39](#)
- [Metropolitan Council Environmental Services, page 46](#)

Competency: Utilities with robust competency programs have well characterized core competencies and emergent skill needs for distinct positions within the utility. Programs provide sufficient training and certifications to support staff and ongoing development opportunities as skills and business requirements evolve. To learn about utilities with strong programs to support workforce competency, see:

- [Central Utah Water Conservancy District, page 55](#)
- [WaterOne, page 63](#)

Community Partnerships: Meaningful community partnerships create value to both the utility and their partners. To achieve this “co-value,” utilities often align their workforce strategy and hiring practices to support the broader economic development and social impact goals of their communities. To learn more about utilities with strong community partnerships, see:

- [AlexRenew/City of Atlanta Department of Watershed Management, page 69](#)
- [San Francisco Public Utilities Commission, page 78](#)
- [Grand Rapids Community College, page 86](#)
- [Great Lakes Water Authority, page 95](#)



Type of Utility	Wastewater/Stormwater/Flood Protection		751,000	Population Served
Governance	Quasi Municipal	Louisville Metropolitan Sewer District	680	Employees
Receiving Waters	Ohio River and Tributaries	Location: Louisville, KY	376 Square Miles	Service Area
Miles of Pipe	3,315 Miles		600 MGD	Plant Capacity

Community Resiliency Through Youth Engagement and Recruitment

Introduction

The [Louisville Metropolitan Sewer District](#)² (MSD) helps provide clean waterways to their region through wastewater treatment, stormwater/drainage management, and Ohio River flood protection. Each aspect of MSD’s operations provides an opportunity to enhance the local workforce, offer educational opportunities, and spur economic development within their community. These actions are part of a larger resiliency effort by the city to create a culture of equity, compassion, and trust within its communities. In 2016, the City of Louisville was chosen to participate in the Rockefeller Foundation’s 100 Resilient Cities initiative and developed a comprehensive Resilience Strategy. The vision, goals, and actions in this strategy reflected the equation that resilience is the summation of equity, compassion, and trust. These three qualities are incorporated into Louisville MSD’s work each day.

MSD embraces its role as an anchor institution and, in 2018, developed a [Community Benefits Program](#)³ to provide a wide variety of programs that leverage partnerships to build a water workforce pipeline, support MSD core services,

and ensure all local communities within the MSD service area experience public benefits. This case study will focus on two aspects of MSD's community commitment: their formal contracting process, which encourages contractors to submit bids that demonstrate a commitment to provide financial contributions, volunteer hours, or in-kind services to the community, as well as MSD's youth development programs, which seek to prepare high school students for successful careers in water infrastructure.

$$R = E + C + T$$

To be a Resilient city, Louisville creates a culture of Equity, Compassion, and Trust.

Community Benefits Program

In the summer of 2018, Louisville MSD completed a [Disparity Study](#)⁴, which found disparities in contractor procurement processes for minority-owned businesses and underutilization of women-owned businesses. These findings meant that only a portion of the potential benefits that result from MSD contracts was being experienced within their community. The disparity study recommendations included the need for MSD to embed the provision of community benefits into all aspects of MSD's capital investments, from construction and construction-related projects to professional and engineering services.

Having seen the success and the impact of a Community Benefits Program (CBP) at other utilities, such as San Francisco Public Utilities Commission, MSD adopted and launched its own CBP. MSD's CBP was formally approved in 2019. The CBP's mission is to be a good neighbor within the community and invite contracting firms to use their resources for positive impact.

The CBP's goals are to foster partnerships within the local communities, build a water workforce pipeline, and ensure all local communities within the MSD service area experience public benefits, especially during times of construction. The CBP is supported by two full-time staff who oversee and monitor the program.



"Thanks to MSD and your Community Benefits Program for helping us make a connection with YouthBuild, such a great organization that we look forward to continue investing in!"

John Allen (L), President, RA Consultants and Tony Marconi (R), former Regional Director of Engineering, RA

A main component of the CBP is the procurement process, which provides a community benefit score to contracting firms that submit a formal community benefit commitment with their proposal. This procurement process applies to all construction and construction-related contracts valued at \$2 million or more and professional service contracts valued at \$200,000 or greater. These voluntary commitments can range from a financial contribution to community improvements in the form of volunteer hours, or in-kind services. The firm that submits this commitment must demonstrate that their community benefits will go directly to schools and nonprofits directly impacted by MSD's operations. Upon award of the contract, the contractor is required to submit a summary of their anticipated activities, which must then be updated and submitted by the contractor at regular intervals to demonstrate the progress and completion of their commitment.

Community Connections

To connect contracting firms with community partners and schools, MSD created a speed-networking event called *Community Connections*. *Community Connections* is a monthly networking event in which community partners and local contracting firms come together to discuss the community partners' programs. During this event, firms learn about community programs and ask questions to gain a better understanding of the community's needs. After four minutes of discussion, participants switch and are paired with a new firm or community partner/school. Pairs switch until all pairs have met and firms have gained an overarching view of the wide range of community partners and schools. These connections are crucial to create external buy-in from community members, educate firms on the important work being done in the community and by educators, and convey the impact a firm may have if they participate in CBP. For more information, check out this [video](#)⁵ from a Community Connections event.



Contractors and community organizations came together for the November 2019 Community Connections

Partnerships from Community Connections

After one of the *Community Connections* events, a local firm decided the work being done by community partners was so important, they wanted to contribute even outside of the CBP process. The firm committed a financial contribution to a local 501(c)(3) organization whose focus is on education, job training, and leadership development for low-income youth between the ages of 16 to 24. To-date firms who have committed to the program have contributed by voluntarily planting trees in communities with low tree canopy, providing financial support to educating youth in STEM related activities, and assisting with emergency housing, job placement, and tutoring services.

Youth Programs

MSD has been an active partner with community programs focused on increasing youth awareness of the critical role of clean water in their communities and the availability and attractiveness of water infrastructure careers. MSD's engagement starts early with the River to River program that provides an outdoor classroom experience for elementary, middle, and high school students to explore the surrounding water bodies. In addition to programs targeted at the youngest members of their community, MSD provides high school students with valuable hands-on experiences in the water sector, along with career and personal mentorship through three robust programs.

River to River

The [River to River: Louisville's Human Water Cycle](#)⁶ program is a joint effort between Louisville MSD and Louisville Water Company to reach and educate elementary and middle school students. This free, hands-on, hour-long lesson for 4th to 8th graders explores water's journey from the Ohio River to people's homes and back again, allowing students to make larger connections between the classroom lessons and the outside world. The classroom experience is capped with a tour of Louisville Water Tower Park and Louisville MSD Floyds Fork Water Quality Treatment Center. The guided tours provide an opportunity for the students to bring what they learned in the classroom to life.

In addition, River to River: Urban Water Cycle High School Learning Experience is offered to freshman and sophomore year students. Students gain an appreciation of how clean and safe water is reclaimed in streams after serving Louisville's drinking water and wastewater needs, as well as the stormwater management, stream monitoring, and flood protection operations that MSD manages along the Ohio River. Many sophomores at Holy Cross High School help with the River to River program and its specific projects.



Students in the Heavy Equipment Sciences pathway at Fairdale High School receive hands-on machinery and safety training.

Fairdale Student Program

Louisville MSD has partnered with Fairdale High School for almost 20 years through the [Fairdale Student Program](#)⁷. Fairdale is designed to prepare students for post-secondary education and career success through the [Academies of Louisville](#)⁸. At Fairdale, there are three academies: Civil Service, Public Service, and Global Service. Each academy has two to four specific pathways – such as Heavy Equipment Sciences and Fire Science within the Public Service Academy, and Cyber Engineering and Law Enforcement Services within the Civil Service Academy.

During their freshman year, students take career exploration classes and job site field trips to gain an overview of the different academies. Students then choose an academy and pathway to pursue for the next three years. Students in the Heavy Equipment Sciences pathway work with MSD to gain direct exposure to heavy equipment and construction tools, safety training, and lessons on current MSD environmental projects. Due to the hands-on nature of the Heavy Equipment Sciences pathway, students not only learn how to operate machinery and gain foundational knowledge in the water sector but can earn industry certifications before graduating. From this partnership, MSD has hired 40 students as employees over the past 20 years and continues to look for opportunities to expand similar outreach efforts at other schools.

SummerWorks Program

Stemming from Mayor Greg Fischer's initiative in 2011, [SummerWorks](#)⁹ connects Louisville's youth, ages 16 to 21, to summer jobs, career opportunities, and supportive networks. In total, SummerWorks has placed over 23,000 youth into summer jobs with over 6,900 youth participating during the summer of 2019. Participants are paired with an employer that aligns with each participant's interests and receive an employee mentor for their eight-week hands-on experience. Louisville MSD has been a partner with SummerWorks for the last five years.

Typically, MSD hosts 14 students each summer. Participants are placed in a department that matches their career interests such as Legal, Finance, Operations, Facility Management, Engineering, and IT. Throughout the summer, interns receive meaningful, challenging, and substantial tasks, and work activities can include administrative support, network support, and preparing and reading drawings. Additionally, MSD provides professional development sessions to prepare participants for their entrance into the workforce on topics such as dressing for success, punctuality at work, and increasing job performance. Over the last five years, one participant has been hired as a full-time MSD employee, but MSD is looking for additional ways to provide a pathway towards full-time employment for SummerWorks participants. Check out this [video](#)¹⁰ that showcases several SummerWorks participants and their highlights.



"I had an incredible experience with MSD and have learned how much MSD does in keeping our waterways safe and clean. The staff are welcoming, helpful, and assisted in my learning about the different departments. I really enjoyed my time in the IT department, and it encouraged me to consider pursuing a career in the tech industry."

Brian M., Pipeline Academy Intern, High School Junior

Pipeline Academy

Though the two high school programs outlined above are important and successful aspects of MSD's outreach, after the publication of the [2018 Brookings Report](#)¹¹ on workforce needs, MSD believed they could do more to engage youth in their community to increase their awareness and interest in water utility careers. To do this, MSD created the Pipeline Academy to provide a year-long internship for junior and senior high school students.

The Pipeline Academy is a partnership between MSD and Holy Cross High School, that allows upper-level high school students to explore STEM fields in the water sector and gain hands-on experience through a year-long unpaid internship. Each student receives a primary MSD mentor that supports them throughout the work experience and a secondary MSD staff member for additional support. This two-tiered mentorship structure provides each student with valuable support that can be a critical element of student success.

In the pilot program, four students participated during the 2019-2020 school year. Weekly during the fall, two juniors and two seniors shadowed different departments with a STEM focus. Students also rotated through different departments every few weeks to allow them to gain an understanding of each department. Additionally, students received advice on necessary academic coursework and certifications to succeed in those respective areas. At the beginning of the new year, the students choose one department to shadow for the remainder of the school term, allowing them to gain a deeper insight and hands-on opportunities.

The Pipeline Academy not only provides a two-tiered mentorship and hands-on experience within MSD's departments, but also provides students with the opportunity to develop important soft skills. MSD hosts a monthly "Real Talk" session to help students delve deeper into questions such as, "What is your career path? How do we help you get there? How do I write a resume? How do I deal with workplace conflict?" These sessions provide a safe space for the students. MSD prides itself on these "Real Talk" sessions because it allows students and MSD employees to take a step back from the day-to-day operations and help students progress on the right path to success.

Although the Pipeline Academy is a new program, MSD plans to expand to a larger cohort and partner with local public high schools. MSD is committed to supporting and mentoring the youth water workforce pipeline and annually provides 10-15 employee mentors that participate and support the youth mentorship programs.

Lessons Learned

Louisville MSD created community ties that enabled them to develop a robust Community Benefits Program and host a variety of student programs. These lessons learned will assist utilities in developing and maintaining community partnerships and engaging with youth:

- **Engage with the Community:** Create neutral spaces for the community to engage with the utility and learn of collaborative opportunities such as the Community Connections event.
- **Find Champion(s):** Identify and engage experienced and dedicated staff to support the various programs.
- **Build Relationships with Schools:** Use every opportunity to build relationships with the students, teachers, and school systems. MSD found it was easier to create school programs/partnerships and gain school support because they actively participated on school boards and at community events. The creation of the Pipeline Academy was not difficult because MSD had an existing relationship with the school.
- **Create Internal Buy In:** Provide staff with internal, open-door training sessions to learn about the utility's initiatives. Educate and empower staff to be advocates for utility initiatives.

Louisville Metropolitan Sewer District's Programs by The Numbers



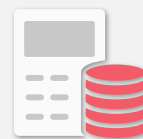
20 YEARS

Fairdale &
SummerWorks programs
have been active



.010%

Percent of total MSD
budget dedicated to
school partnerships



<\$1 MILLION

Estimated projected CBP
commitments over the
next two years

Conclusion

Through the kinds of relatively low-cost investments summarized above, and with the City's resilience initiative in mind, Louisville MSD embraces its role as an anchor institution with a robust portfolio of programs that help recruitment and create a culture of equity, compassion, and trust in its communities. These programs create positive impacts within the region, strengthen community partners, and encourage contractors to do the same. With the CBP, MSD leveraged its capital investments to embed good neighbor principles with contractors. The Community Connection events create a roadmap for those contractors, and this effort received overwhelmingly positive reviews from participants. MSD's youth engagement created clear recruitment opportunities and employment pathways and the space to learn and engage with the water sector. All these efforts emphasize and bolster MSD's mission to be a strategic partner and good neighbor and provide pathways for community connections and recruitment leading to employment in the water workforce.

"I like working with my hands," Megan said, noting that she learns more from hands-on experiences than from reading or listening to lectures. "Academies of Louisville students 'should be excited' about the on-the-job experience they will gain as teens."

Megan M., current MSD employee and former Fairdale student



Type of Utility	Combined	  Philadelphia Water Department Location: Philadelphia, PA	1.7 Million	Population Served
Governance	Municipal Department		Approximately 2,100	Employees
Receiving Waters	Delaware and Schuylkill Rivers		135 Square Miles	Service Area
Miles of Pipe	3,000 mi. Water Main, 3,700 mi. sewer		236 MGD W; 397 MGD WW ¹²	Plant Capacity

Ensuring a Greener Future by Empowering Young People

Introduction

After the 2008 recession, the City of Philadelphia was facing high poverty rates and high levels of unemployment. The City was making plans to meet federal regulations mandating drastic reductions in pollution from sewer overflows, as well as setting its own goal of becoming the greenest city in the country. To achieve these objectives, the City developed the [Green City, Clean Waters](#)¹³ Plan. A critical component of the Plan was the construction of an extensive network of green infrastructure projects through the [Philadelphia Water Department](#)¹⁴ (PWD). Once constructed, the green infrastructure sites required maintenance, and PWD was faced with a shortage of workers, to maintain them. [PowerCorpsPHL](#)¹⁵, a workforce development program, was launched to cultivate a talented workforce among Philadelphia's underemployed young adults. Over the last seven years, this partnership between PowerCorpsPHL and PWD has given the necessary tools and support for 670 of Philadelphia's unemployed and underemployed young people to succeed and thrive in the workforce. This case study will examine

PowerCorpsPHL's model, partnership between PWD and PowerCorpsPHL, and lessons learned to create water workforce opportunities for its unemployed and underemployed young people.

PowerCorpsPHL

Launched in 2013, PowerCorpsPHL is a cross-sector collaborative model that engages disconnected young adults and returning citizens to enter and succeed in career pathways by using service as the strategy. They focus on developing local talent and honing existing skills to create a sustainable career pathway while addressing systemic barriers to employment.

PowerCorpsPHL supports members, ages 18 to 28, through trainings on teamwork, task management, and other soft skills necessary for the workforce, while also providing technical skills, mentorship, a living stipend, and expungement services. The program aims to address the City's gun violence, youth unemployment, and sustainability challenges, and was launched through the Mayor's Office.

Leveraging an AmeriCorps grant, City departments, such as the Philadelphia Water Department, Philadelphia Parks & Recreation, Department of Human Services, and the Office of Workforce Development, collaborated to design the initiative and matched funding through investments from their departmental budgets. PowerCorpsPHL uses social service agencies, such as alternative high schools, foster care, probation officers, and other organizations with clients in need of employment training to recruit new members into the program. Half of the program's participants come from social service agencies; the other half come from alumni referrals and community word of mouth through neighbors, friends, and family.

All members complete [Phase One](#)¹⁶, a four-month, full-time, crew-based AmeriCorps service program that builds a foundation of job-readiness skills. Additionally, Phase One focuses on contribution and connection to the community through the enhancement of public lands and stewardship of community spaces. After completing the foundation, members continue to Phase Two and have the opportunity to partner with PWD. They are able to work

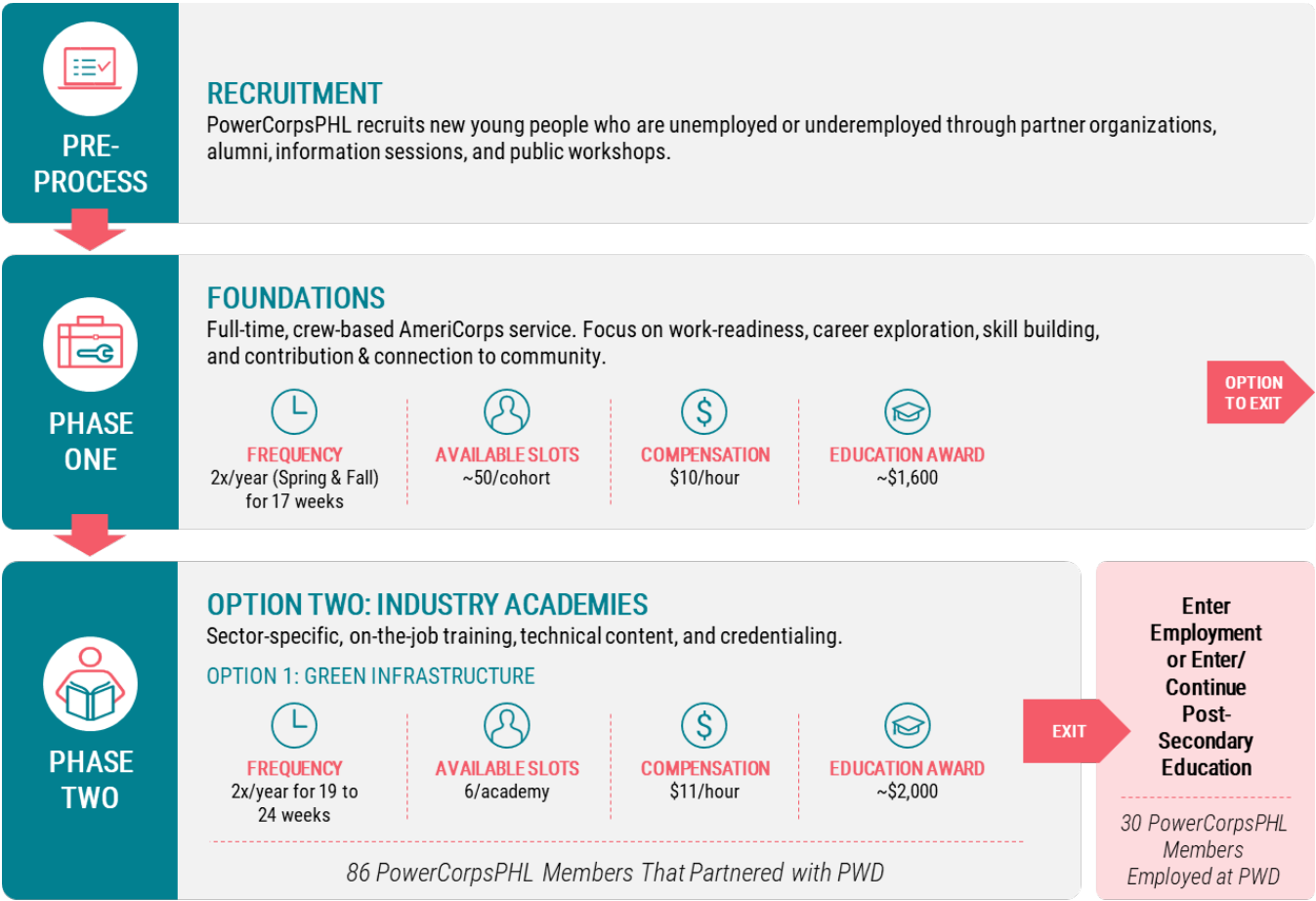


PowerCorpsPHL members maintain over 100 GSI sites around Philadelphia.

with PWD for 19 to 24 weeks, and upon completion can receive an education award of up to a \$2,000. Members are able to enter or continue their post-secondary education or they can enter employment at PWD.

PowerCorpsPHL staff work with local private industry to align training and cultivate employment opportunities. Through this collaborative co-designing process between PowerCorpsPHL staff and private industries, members benefit from industry-aligned career pathways that connect to existing, in-demand jobs. Through engagement with potential employers, coupled with individual member career counseling, members can either exit the program for full-time employment or are supported in the process of entering/continuing post-secondary education through academic support classes and one-on-one counseling. As PowerCorpsPHL has grown, it has refined its model structure to ensure that all members are supported along the process.

The Three Phases of the PowerCorps PHL Model



Philadelphia Water Department and PowerCorpsPHL

To achieve the goal of becoming the greenest city in the country and supporting the community’s young people, PWD and PowerCorpsPHL developed a pathway for young people to gain on-the-job training and transition into full-time positions at PWD. In Phase One, members are introduced to green infrastructure concepts and related careers through preliminary “on-the-job” training overseen by experienced PWD staff. In Phase Two, members in the green infrastructure Maintenance Industry Academy receive higher-level technical training and apply those skills at more than 270 annually serviced green infrastructure systems at 125 different locations across the City. Since 2013,

PowerCorpsPHL team members working with PWD have been tasked to complete green infrastructure site maintenance throughout the City of Philadelphia. PowerCorpsPHL members receive work orders from PWD and work together to clear debris and litter, remove sediment, prune trees, pull weeds, plant vegetation, and apply mulch to green infrastructure systems to ensure they function properly.

After PowerCorpsPHL members complete Phases One and Two of the program, they are eligible to interview with PWD for an apprenticeship position. Given the experience gained during their time working on PWD's GSI and being exposed to the City's water infrastructure systems, PowerCorpsPHL alumni are well-trained and competitive applicants. Since the partnership launched in 2013, PWD has employed 30 PowerCorpsPHL alumni. Due to their on-the-job training, alumni are prepared to work in positions ranging from Maintenance Workers and Engineering Aides to Electricians and Electronic Technicians, and they play an important role as members of the PWD community. Check out this [video](#)¹⁷ that highlights alumnus Aaron Kirkland.

"I love the fact that there's a sense of purpose in what I'm doing. We all have the same passion for cleaning Philadelphia up. I really take pride in investing in the people that's coming behind me, because I know what it's like when somebody showed me the right things to do."

Aaron Kirkland, Crew Chief GSI Operations Unit

Create Champions for Your Effort

One of the key program successes has been the tangible and intangible benefits to the city, utility, and PowerCorpsPHL, as tracked through metrics. These metrics demonstrate the successful partnership and have been crucial to showcasing successes and highlighting champions within the program.

Continuing Education and Growth

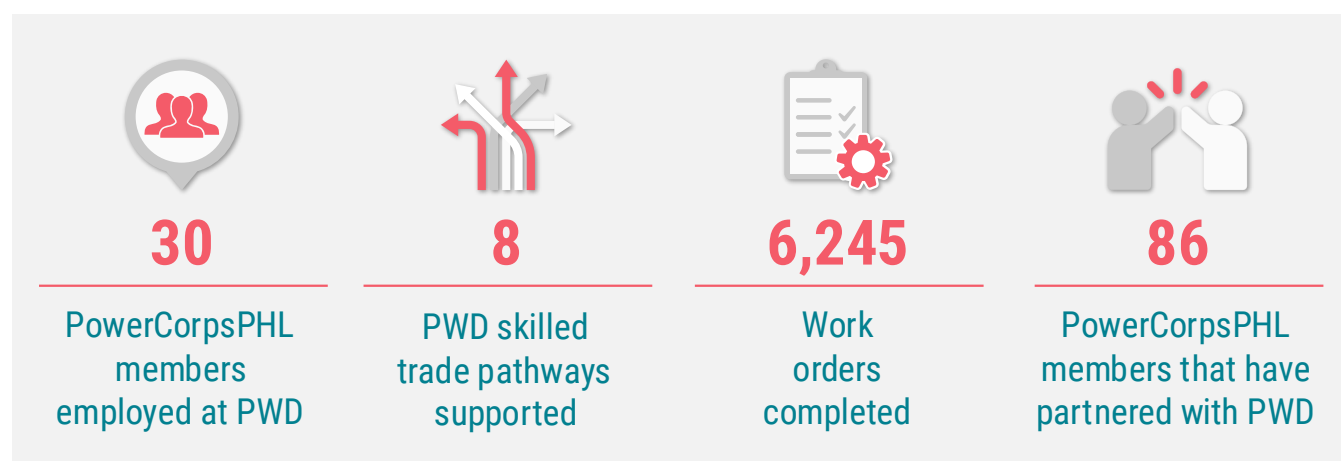
Education and professional development do not stop when PowerCorpsPHL graduates transition to employment at PWD. PWD has partnerships with the Orleans Technical College and the Community College of Philadelphia to offer general education courses, as well as customized and specialized courses in skilled trades. These partnerships have been crucial in supporting PowerCorpsPHL alumni to broaden out of green infrastructure-focused maintenance work to advance into other positions, including electrical, HVAC maintenance, and building mechanics. Alumni receive specialized training that allows them to have strong, long-term careers with the utility. The partnership has also provided the unexpected benefit of filling a variety of positions at PWD beyond the green infrastructure maintenance role originally envisioned.

Lessons Learned

As PWD and PowerCorpsPHL have developed their partnership, they have experienced challenges and continue to improve this program through support and communication. These lessons learned will assist utilities undertaking similar efforts:

- **Create Internal Buy-In:** Communicate with employees the benefits of workforce partnerships through metrics to gain a higher rate of acceptance and approval among PWD employees for workforce partnerships.
- **Provide Clear Expectations:** Provide clear guidance and a tangible workorder tasking process that enables members to learn and successfully complete each work order.
- **Support Members:** Provide training to both members and utility employees to set them up for success. PWD recognized the need to provide an on-site PWD employee to support PowerCorpsPHL Members and help direct the successful completion of work orders.
- **Track Metrics:** Gather metrics to demonstrate and widely publicize tangible outcomes of a community partnership. People rely on numbers to convey a program's success, and metrics provide insight to tangible benefits.

Philadelphia Water Department's Program by the Numbers



Conclusion

As utilities seek to diversify their workforce beyond their traditional sources of employees, programs like the partnership between PowerCorpsPHL and PWD are essential. This partnership took fine-tuning over the years. Both entities relied on strong communication and relationship building to refine their program partnership and ensure both PowerCorpsPHL members and PWD employees were supported. The partnership demonstrated to both organizations the value of collaboration between job readiness organizations and public utilities to provide employment and training opportunities for those within the community, while filling a critical workforce gap faced by many utilities. PWD's partnership with PowerCorpsPHL empowered and employed once underemployed and unemployed young people who can now positively contribute to the greener future of Philadelphia.

"Our crucial and important partnership with PowerCorps showcases what PWD is and continues to be about as a utility leader."

Alex Warwood, Former Apprenticeship and Workforce Development Director at PWD



Type of Utility	Wastewater		1.1 million	Population Served
Governance	Governed by 11 appointed Commissioners	Milwaukee Metropolitan Sewerage District Location: Milwaukee, WI	230	Employees
Receiving Waters	Lake Michigan		323 Square Miles	Service Area
Miles of Pipe	MMSD: 300 miles Communities: 3000 miles		600 MGD	Plant Capacity

Recruiting for a Thriving Regional Economy

Introduction

[Milwaukee Metropolitan Sewerage District](#)¹⁸ (MMSD) provides water reclamation and flood management services to over 1.1 million residents and 28 communities in the Greater Milwaukee area. Though MMSD serves a large population, many in the community are unaware that MMSD and the water sector more broadly provide meaningful, well-paid career opportunities. To raise awareness, MMSD is developing a diverse talent pipeline program and workforce recruitment strategy within the region. MMSD is working with the Milwaukee Water Works, Veolia Water Milwaukee, the Wisconsin Department of Natural Resources, and local organizations to foster greater awareness of water sector careers among surrounding communities, specifically historically underserved communities. This engagement, part of the [Equitable Water Future Roadmap](#)¹⁹, enables the water sector to communicate with local organizations on their anticipated career needs and openings to interested individuals. These engagements are openly advertised, and MMSD works with local organizations to help announce, promote, and distribute information to the communities they serve. Most recently, MMSD along with its water sector and organizational partners hosted the first One Water, Our Water: Explore Milwaukee Water Jobs Fair in spring 2021. This inaugural virtual event introduced the array of water sector jobs and highlighted current and future job openings. One hundred attendees

were able to ask questions and sign up for informational interviews. The event is part of a larger equity focused workforce approach to integrate community partners into recruitment efforts to ensure utility staff are representative of the community.

MMSD works with the region's water sector and organizations to create awareness of career opportunities in the water sector through two approaches. MMSD identifies and develops alternate career pathways such as internships that allow for community individuals to get involved and build stable careers. Over the years, MMSD has implemented numerous recruitment efforts, such as internship programs. In the future, these programs will evolve to include high school students and skilled positions that require a two-year technical degree. MMSD is also developing apprenticeship positions for key technical positions (i.e., lab technician and monitoring sampling technician) and opportunities for previously incarcerated individuals. Concurrently, MMSD uses recruitment strategies to spark interest in individuals through school visits and job fairs that spotlight the region's water sector opportunities.

This case study will highlight MMSD's efforts to recruit individuals from the communities they serve through college-level internships and community partnerships. MMSD continues to develop and evolve its recruitment strategies in accordance with the Equitable Water Future Roadmap and hopes to incorporate lessons learned into the development process.

Contracting with Veolia Water Milwaukee

[Veolia Water Milwaukee](#)²⁰ is contracted by MMSD to operate and maintain MMSD's wastewater treatment system. Veolia embraces a diversity-focused recruitment process. Veolia's contract with MMSD calls for a robust supplier diversity program. More than 25 percent of Veolia's supplier portfolio are firms from local small, women, minority, and veteran-owned business enterprises. Additionally, Veolia is also responsible for procuring work from construction contractors. When Veolia issues invitations to construction firms to bid on MMSD work, they are required to incorporate local workforce and apprentice utilization requirements. MMSD prides itself in working with Veolia Water Milwaukee and their commitment to diversity and engaging with local workforce.

Supporting Internships

MMSD connects with young and diverse people in their communities through a robust set of [MMSD's internships](#)²¹. Students and co-ops can intern with MMSD throughout the year including the summer. On average, 30 interns and co-op students join MMSD each year and have the opportunity to work in various departments such as engineering, laboratory services, and water quality protection. In addition to hands-on experiences, interns can tour local water reclamation facilities and attend Commission meetings. In 2019, MMSD hosted 31 interns and 6 co-ops. MMSD also created a [video](#)²² about the internship experience.

The Regional Internships in Science and Engineering (RISE), which was co-created and developed with [Prism Technical Management & Marketing Services](#)²³, is eligible to college students who attended high school in the MMSD's service area and are currently studying engineering, construction management, or water related science. It aims to retain talented students to the local area by exposing them to the many career opportunities at planning

firms, construction contractors, and engineering designers. RISE connects students to local firms and prepares them for success in the Greater Milwaukee engineering infrastructure job market. Since 2009, RISE has provided internships to 65 students and most recently served 15 students in 2019.

MMSD has long-standing and successful internships. MMSD is developing an internship for those who are not currently in post-secondary education and will focus on the pre-apprenticeship level.

Building Community Relationships

Prior to 2018, MMSD primarily recruited its workforce through general internships with college students. MMSD has pivoted to a more focused approach and engages with workforce partners to recruit individuals interested in the construction trades. MMSD is taking a unified approach with various partners such as workforce organizations (i.e., workforce development boards and community groups), the construction industry (i.e., contractor's associations), and construction labor organizations who determine the demand for new apprentices each year and their training needs. Through this approach, MMSD connected and partnered with an organization that is revitalizing Milwaukee's industrial careers and an organization that is engaging with the community's youth.



Pre-apprentices gather to receive hands-on training for skills such as welding during a four-week entry level construction skills training program.

Wisconsin Regional Training Partnership Building Industry Group & Skilled Trades Employment Program (WRTP | BIGSTEP)

MMSD aims to have a robust talent pipeline from underserved communities. Through community connections, MMSD engaged and partnered with the [WRTP BIGSTEP](#)²⁴. WRTP BIGSTEP is a nonprofit that provides valuable services, resources, and programs for those who are looking for family-sustaining jobs in the construction, manufacturing, and emerging sectors of the regional economy. The program aims to help non-traditional candidates enter and navigate the challenges of an apprenticeship, especially in the first few years. Candidates are recruited from the local communities and build their skill sets through a four-week entry level construction skills training and receive tutoring assistance for the General Educational Development (GED).

WRTP BIGSTEP was created and is supported financially by the construction trade unions to help better prepare candidates, particularly from underrepresented communities, for success in the construction trades. MMSD is one of the industry partners that provides financial support to the program, and this close relationship to the construction industry and labor enables WRTP BIGSTEP to tailor their pre-apprentice program to reflect necessary industry skills. As candidates complete the program, construction contractors, including those that work on important MMSD capital projects, can recruit and have direct access to qualified and diverse individuals. Twenty seven percent of apprentices that work on MMSD projects and have received services from WRTP BIGSTEP are African American. Outside of the WRTP BIGSTEP program, approximately 8 percent of apprentices that work on MMSD projects are African American. WRTP BIGSTEP apprentices employed on MMSD capital projects are three times more likely to be African American when compared to the other apprentices. This relationship between MMSD and WRTP BIGSTEP has increased the diversity of the apprentices that more accurately reflect the region's diverse communities.

Supporting the Community's Apprenticeship Opportunities



Dwayne (left) and other trainees learn important skills that will prepare them for their careers.

After Dwayne Sampson graduated high school in summer of 2018, he immediately enrolled in the training program and was one of 10 trainees. Once he completed his training, Dwayne joined the Sheetmetal Union and was accepted as a HVAC Pre-Apprentice. Dwayne was able to go from recent high school graduate to beginning his career as a HVAC Apprentice in a little over a year. While starting this career, Dwayne needed guidance and was assigned an Apprentice Success Coach. Dwayne received support on how to deal with new work assignments, un-ideal workplace environments, and lay-offs. In fall 2019, Dwayne was promoted to an Apprentice with the Sheetmetal Union. Dwayne is just one example of how MMSD's support of WRTP BIGSTEP assists training graduates as they start their careers and improves the workforce pipeline for the entire region.

Overall, WRTP BIGSTEP's program has served 253 pre-apprentices in 2019 and served 153 pre-apprentices in 2020 in the Milwaukee region. While MMSD provides financial support to WRTP BIGSTEP, not all participants work on MMSD capital projects. Over the last eight years, 22 percent of construction apprentices on MMSD capital projects received pre-apprentice training from WRTP BIGSTEP, and the apprentices provided 25,000 construction hours. This

indirect support pipeline bolsters the construction and manufacturing industries in the whole region. MMSD is an active community partner that aims to help and promote its service area. MMSD's important relationship with W RTP BIGSTEP allows job seekers in economically disadvantaged communities to have direct access to opportunities in construction trades. Job seekers can then prepare, enroll, and complete a pre-apprentice program that allows them to be prepared for full-time employment.

Fresh Coast Ambassadors

In addition to pre-apprenticeship opportunities, MMSD wanted to engage with 14- to 24-year-old youth to create greater community awareness of the water industry. In 2018, MMSD partnered with Cream City Conservation and Employ Milwaukee to create the [Fresh Coast Ambassadors](#)²⁵ program. This entry-level green infrastructure program introduces youth to water industry career pathways, watercourse topics, green infrastructure training along with personal and professional development. In addition, participants can network with industry professionals and can even earn industry recognized certifications.

Fresh Coast Ambassadors launched its inaugural program in 2019 and worked with three crews: spring, summer, and fall. Each crew, made up of 8-16 crew members, met between two to four days a week. Each crew had a detailed work plan, schedule, and visited several worksites where they removed invasive species and maintained green infrastructure. At the conclusion of the program, participants left with numerous certifications and trainings such as the National Green Infrastructure Certification Program (NGICP), OSHA 10-Hour Construction Safety and Health card, American Red Cross CPR/First Aid certification, and forklift training.

In addition to physical work, Fresh Coast Ambassadors strives to empower participants and support self-confidence and personal reflection. Program participants completed a self-assessment at the beginning and end of their crew rotations. Many participants had a positive experience and not only learned about green infrastructure but interpersonal reflections, such as their leadership style as well. This program moves beyond just physical labor and works to empower their participants through personal development, such as practicing gratitude, financial literacy,

"This experience has made and shaped my relationship to the environment. The program opened my eyes to how much nature impacts us, not only in resources, but also in community. I learned so much more about the importance of taking care of the environment in order to preserve it for later generations."

Hanan Ali, 2019 Fresh Coast Ambassador



Fresh Coast Ambassadors maintain rain gardens and other green infrastructure while learning about the water sector.

conflict management, and goal setting. These important life skills allow their participants to leave the program feeling more confident about their futures and with a stronger relationship with the environment.

Over the past two years, Fresh Coast Ambassadors has worked with 28 young people and began recruiting in early 2021 for their third-year cohort that started in summer 2021. Some participants have been interested in working with MMSD full-time but due to low turnover and lack of entry level positions, MMSD has not been able to hire any Fresh Coast Ambassadors.

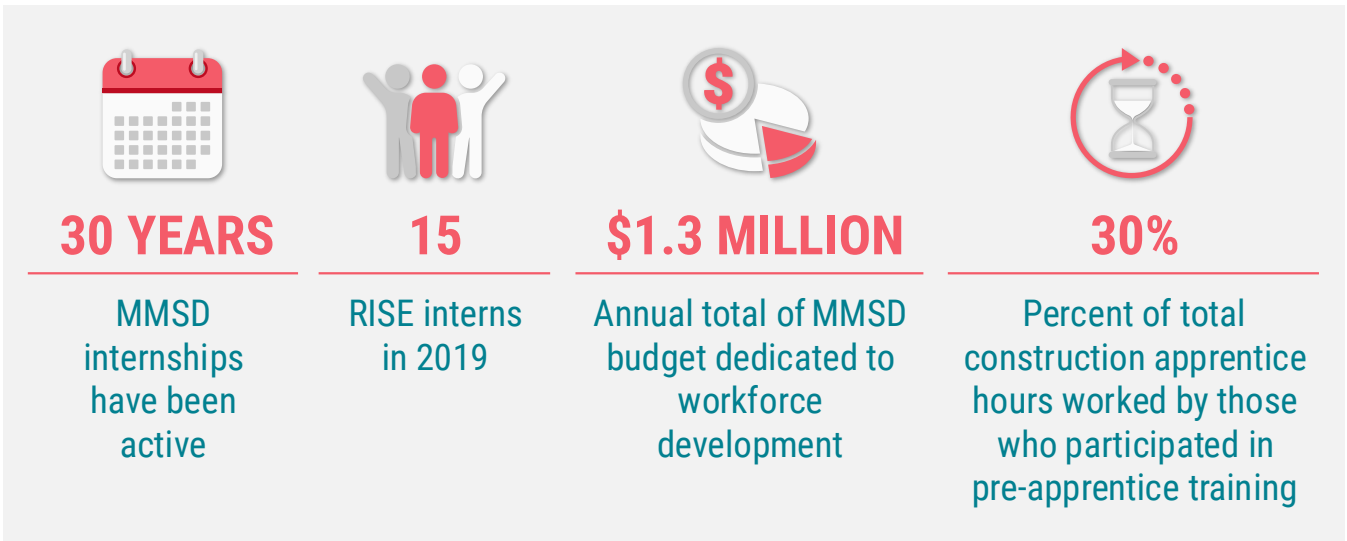
Through the past two years, MMSD has learned some lessons and plans to institute new changes including additional recognized certifications, field experience, company site visits, and career panels. These activities help Fresh Coast Ambassador participants further the industry and hear firsthand from current employees and employers.

Lessons Learned

MMSD is constantly looking for new engagement opportunities with their local communities and to further develop a workforce that accurately represents their service area. Past opportunities have provided valuable lessons learned on recruiting the next workforce generation that MMSD hopes to integrate into their future programs:

- **Develop Tracking Mechanisms:** Prior to launching a new program, establish a mechanism that tracks how many people go through and receive full-time employment from an internship or apprenticeship. This data will be important for funding and support for new programs.
- **Understand Funding and Limitations:** Review external funding with community partnerships and discuss any participant limitations such as background or financial status. These limitations could have important ramifications for community partnerships and programs.
- **Begin Awareness at a Young Age:** Engage at the youngest levels via water-related education, such as how wastewater systems play a role in public health and in protecting and improving the environment. Provide compelling examples about the many career opportunities in the water sector.

Milwaukee Metropolitan Sewerage District’s Programs by the Numbers



Conclusion

MMSD works with the region's water sector and organizations to develop a workforce that represents the communities they serve. The region's equity-focused mindset not only highlights the need to recruit individuals that represent its diverse communities but the need to create greater awareness in the community of water sector's benefits and its job opportunities. MMSD is proud of its established recruitment programs, such as its internships, Fresh Coast Ambassadors, and community partnership with W RTP BIGSTEP.

As MMSD looks to expand its recruitment efforts with an equity lens, it will integrate lessons learned from past and current recruitment efforts. MMSD's recruitment efforts aim to not only provide technical hands-on skills but interpersonal skills that will set up participants up for future success. While employment at MMSD is a goal, they are supportive of individuals utilizing their skills in the area to not only bolster the water and construction sector but the region as a whole. As MMSD looks to expand and improve its recruitment strategies, they will continue to build community relationships, recruit from communities they serve, and support a thriving Milwaukee.

"While Milwaukee is a water-centric city, our water workforce does not reflect the diversity our residents. To build a more diverse workforce we are investing in and partnering with community-based workforce partners and other water sector employers -- there is no such thing as a 'go it alone' approach when developing our future workforce."

Kevin L. Shafer, Executive Director



Type of Utility	Combined	 Moulton Niguel Water District	170,000	Population Served
Governance	Authority/Special District		163	Employees
Receiving Waters	State Water Project and Colorado River		37 Square Miles	Service Area
Miles of Pipe	1,299 Miles		22.3 MGD W; 21 MGD WW; 12 MGD Recycled	Plant Capacity
		Location: Laguna Hills, CA		

Creating a Healthy and Inspiring Workplace Culture

Introduction

[Moulton Niguel Water District](#)²⁶ (Moulton Niguel or the District), located in Orange County, provides high-quality drinking water, recycled water, and wastewater services to more than 170,000 customers in the Cities of Laguna Niguel, Aliso Viejo, Mission Viejo, Laguna Hills, Dana Point, and San Juan Capistrano. Moulton Niguel is devoted to cultivating a healthy and inspiring workplace for its 163 employees. Since joining the team in 2012, Moulton Niguel General Manager Joone Lopez has instilled the District’s HERO Principles – Honesty, Effort, Respect, and One Team – at every level of the organization. The goal is to support the District’s foundation of Performance, Impact, and Resiliency. Moulton Niguel ensures that employees are performing at the highest levels, going above and beyond in the community, and are prepared for unforeseeable events.

Over the last eight years, Moulton Niguel launched a wide variety of efforts, such as the Moulton Leadership Academy, the Future Leaders of Water (FLOW) Initiative, and partnerships with academic institutions, to imbed these

principles into the operational DNA at Moulton Niguel. This case study will examine the academies, programs, and partnerships that support and help achieve the District's mission to create a healthy, respectful, and inspiring workplace culture.

HERO Principles

At the heart of Moulton Niguel's workforce program is a commitment to creating a workplace where employees feel respected and taken care of by each other and the management team. In 2012, General Manager Joone Lopez brought her vision of the HERO Principles to Moulton Niguel. Through her leadership and workforce initiatives, the HERO Principles became the foundation for a respectful and supportive workplace:

Honesty: The fundamental principle, honesty, is the "H" in HERO. To develop a strong workforce culture, trust and accountability must be established and reinforced first. The management team encourages feedback from all employees regardless of title. The team fosters communication and creates neutral spaces and an open forum for idea sharing during daily staff meetings and monthly all-hands team meetings to hear feedback and integrate these ideas into District operations. Honesty is part of individual professional growth as well. Employees are also expected to share their weaknesses or mistakes with their supervisors to gain constructive feedback to continuously improve.

Effort: The management team encourages and reinforces individual and team effort. Employees are consistently encouraged to come to work every day and give their best effort to the job at hand. Effort is valued and rewarded through public acknowledgment, praise, and recognition.

Respect: The management team treats employees – and requires employees to treat each other – with respect and courtesy. Coordination and collaboration are based on mutual respect and regard for each other's strengths, expertise, and knowledge. Demonstrating respect demands a level of professional civility towards one another that ultimately leads to growth in personal connection, understanding, and appreciation amongst the organization.

One Team: During all-hands meetings, the management team promotes engagement and connections at all staff levels. These meetings allow employees to understand how their roles fit into the District's big picture.

These actions create a sense of excitement and pride, which promotes comradery within, leading to cross collaborations between various departments. The HERO acronym was created to make it easy for staff to remember Moulton Niguel's core values. During new hire orientations, new employees are introduced to these core values and are reminded that technical expertise is important but upholding Moulton Niguel's core values is required. All employees know they can and will be called upon at any time to remind each other of these values. The values are even woven into an interview question asked of all prospective candidates. Staff make job applicants aware of Moulton Niguel's workplace culture prior to hire.

Cross Collaboration

Moulton Niguel has a leadership mandate, or rather expectation for all staff, that states departments must work together on issues that cross multiple departments such as finance, operations, etc. This interdepartmental collaboration brings a wide variety of senior staff and their respective department teams together to discuss issues with a cross-disciplinary lens. Examples include monthly engineering and operations "huddles," annual budget

workshops, and communications teams that may involve more than 25 participants. During these meetings, hierarchy and titles are of little importance, leading to greater feedback and generation of ideas and solutions. Employees are encouraged to be honest and freely share their ideas. During these meetings, ideas from entry-level employees are incorporated into future work plans. These contributions are recognized at all-hands meetings during a regular “kudos” section, where Moulton Niguel collectively celebrates staff achievements, reinforcing the One Team principle.



Moulton Niguel employees have an annual District Day and reinforce the HERO principles through group activities.

Internal Leadership Academy

Moulton Niguel recognized that to effectively instill HERO Principles across the organization, they needed to provide managers with the tools and support necessary to lead by example. However, the District found a lack of available and appropriate external leadership training and though they considered hiring an external group to facilitate a leadership academy, there were many logistical hurdles and many of the external curriculums did not fit into Moulton Niguel’s logistical and organizational needs.

After deliberation, the management team decided it would be most cost-effective and beneficial if Moulton Niguel conducted the leadership academy internally. This tailor-made program would fit all of Moulton Niguel’s logistical constraints and organizational needs; reinforce the mission, values, and sense of team; and take advantage of inherent institutional knowledge by using Moulton Niguel’s subject matter experts. One of the first steps to create the leadership academy was to form an interdepartmental innovation team to identify the necessary qualities and skills of a Moulton Niguel leader.

Forming an Interdepartmental Innovation Team

Moulton Niguel formed an interdepartmental innovation team made up of well-rounded individuals from different departments such as engineering, operations, customer service, and finance. The team served as an initial think-tank and identified the qualities of a successful leader at the District. Some examples of these qualities were:

- Perpetually seeks further understanding of the bigger picture
- Serves as a steward of Moulton Niguel’s vision and mission
- Holds themselves to a great sense of accountability
- Creates an inclusive environment and facilitates a team-win group mindset

Once the necessary qualities were identified, the innovation team created a curriculum that would effectively teach and reinforce these qualities.

Curriculum

The innovation team brainstormed curriculum components and incorporated past experiences and observations, and the necessary qualities of a leader. The team designed a curriculum that reflected these qualities and provided tools and knowledge for a successful leader at Moulton Niguel. The team crafted these ten focus areas:

- Operational Overview
- Administrative Policies
- Interagency Relations
- Occupational Safety
- Customer Service
- Communication
- Time Management
- Technology
- Employee Development
- Employee Discipline

Each focus area had a set of subtopics with a functional tie to actual job performance at Moulton Niguel. The innovation team recruited internal subject matter experts to teach specific subtopics and split the workload. This approach allowed Moulton Niguel to support internal knowledge transfer and experience without the cost of an external service.

Participants attended five, on-site half-day sessions over five months. They were scheduled on strategic days and times to reduce the impact on operations and customers. During these sessions, speakers were encouraged to use various teaching techniques such as PowerPoint presentations, Q&A sessions, competitive group activities, theatrical skits, and technology demonstrations. These sessions were interactive and pushed managers outside of their comfort zones. Throughout the process, each manager was able to be the student as well as the teacher to incorporate their own experiences into the curriculum through the motto of “Learn, Share, Grow.” This empowering leadership academy gave managers the tools to continue to succeed and progress in their career paths, and effectively engage and empower the staff at Moulton Niguel.

Academy Expansion

The first Moulton Niguel Internal Leadership Academy in 2017 proved to be a success for managers. Due to this success, the District expanded it to an organization-wide training during the Annual District Day. Moulton Niguel’s employees participated in activities that focused on the District’s core values through the motto of “Learn, Share, Grow” and provided ample teambuilding opportunities. This new academy included staff members from all levels and focused on employee core values, promotion of grassroots leadership, and emphasis on HERO Principles through a combination of skits and group activities.

The success of the two internal leadership academies has strengthened employee engagement and development. Moulton Niguel plans to make these academies reoccurring to continuously empower its employees and maintain a supportive work environment. The internal academies and support of the HERO Principles earned Moulton Niguel the award of Top Workplace in Orange County for three years running. Check out this [video](#)²⁷ that showcases Moulton Niguel’s Third Year as a Top Workplace.

Future Leaders of Water Initiative

[The Future Leaders of Water](#)²⁸ (FLOW) Initiative seeks to inspire a new generation of water champions through education and recruitment. FLOW was an effort to integrate all of Moulton Niguel's workforce initiatives and build on them through sharing and great collaboration. This initiative, created in 2019, engages with community groups, professional associations, and academic institutions and aims to educate the public to actively seek career opportunities in the water sector.

FLOW reaches a broad audience and creates excitement about the water sector. Moulton Niguel engages with participants through facility tours, internships, and community events. During these connections, participants are asked about their interests, career, and education goals with the hopes to attract and recruit the best and brightest candidates. These engagements emphasize the many career opportunities available in the water sector such as information technology and human resources to the frequently advertised construction and water chemistry positions. Additionally, it is emphasized that every position plays an important role in Moulton Niguel and each position is part of the One Team mindset.



A group of emerging professionals from the Coro Fellows program, visit Moulton Niguel to learn about the water sector as part of the FLOW Initiative.

The water sector is evolving and adopting new technologies that are crucial for the sustainability of the District and region. To adapt to these changes and tackle upcoming challenges, Moulton Niguel recognizes that their water workforce needs to be innovative and creative. Moulton Niguel continues to concentrate on recruiting innovative skillsets such as data science, which has provided value to not only Moulton Niguel but also to the customers and communities it serves. FLOW allows Moulton Niguel to engage, educate, and empower, and recruit bright individuals for available opportunities at Moulton Niguel and in the water sector.

Check out this [video](#)²⁹ that highlights the FLOW Initiative at Moulton Niguel.

Partnerships with Academic Institutions

With changing technologies and the influx of new information, it is crucial that utilities engage with different sectors to gain new perspectives. For this reason, Moulton Niguel engages with various schools, community colleges, and universities in their region to discuss the attractiveness and availability of job opportunities in the water sector. At local high schools and community colleges, the District meets with students in career and technical education

programs to discuss the full range of water sector careers to expand their understanding beyond the prominently advertised engineer and construction positions. Students are frequently surprised to hear the range of stable jobs and the many avenues for involvement.

Additionally, Moulton Niguel is surrounded by some of the nation's top universities and strives to connect with these universities through partnerships. Moulton Niguel has created partnerships with the following academic institutions, to name a few:

Santiago Canyon College: Moulton Niguel visits students and provides advice to students on career opportunities in the classroom and during the college's career fair. Moulton Niguel informs students of opportunities in the water sector beyond the traditional construction and engineering positions. Moulton Niguel has hired several employees who attended Santiago Canyon College, and many employees continue their education at the College.

University of California, Davis: Moulton Niguel is partnering with UC Davis in a multi-year, multi-million-dollar pilot program to better understand how water utilities can reduce energy usage. This pilot program idea was the result of the state's goal to reduce greenhouse gas emissions. This project is designed to reduce the District's energy consumption and will combine water system hydraulic modeling with energy intensity models to create a demand management system. The pilot will help utilities nationwide reduce energy consumption, saving money for utilities and ratepayers, and reduce greenhouse gas emissions. This pilot will be coming to an end in 2021.

University of California, Irvine: With the FLOW Initiative and Moulton Niguel's expanded efforts in educating the public, Moulton Niguel connected with a dedicated water center at its neighboring research institution, University of California, Irvine (UCI). Water UCI is a globally recognized leader in water research and has built several educational offerings, from a middle school program to internships to symposia. Moulton Niguel has partnered in their educational offerings and determined there were opportunities to broaden the FLOW Initiative through a collaboration with Water UCI. Additionally, Moulton Niguel staff are participating in developing a National Science Foundation Industry University Research Center at UCI.

California Data Collaborative: Moulton Niguel is a founding member of the California Data Collaborative, which provides a network for water professionals to design and build the data infrastructure and analytic tools that strengthen water planning. The collaboration empowers agencies to make informed, data-driven decisions responsive to tomorrow's water needs. The unique inter-agency database of cleaned and standardized data accelerates research to generate insights for the water industry. World-renowned research institutions, including the University of Southern California, University of California, Los Angeles, and Stanford University, and industry professionals facilitate intellectual partnerships to fill gaps in knowledge and transform the state of the art.

"I attended a Water Science Career Fair on campus. At this event, I sat in a presentation on job interview preparation led by Todd Novacek, Director of Operations for Moulton Niguel. One key moment that stood out to me in the presentation was when Todd explained that he began his career as a meter reader and how rewarding a career in the water industry can be. I applied for a position with MNWD following the career fair."

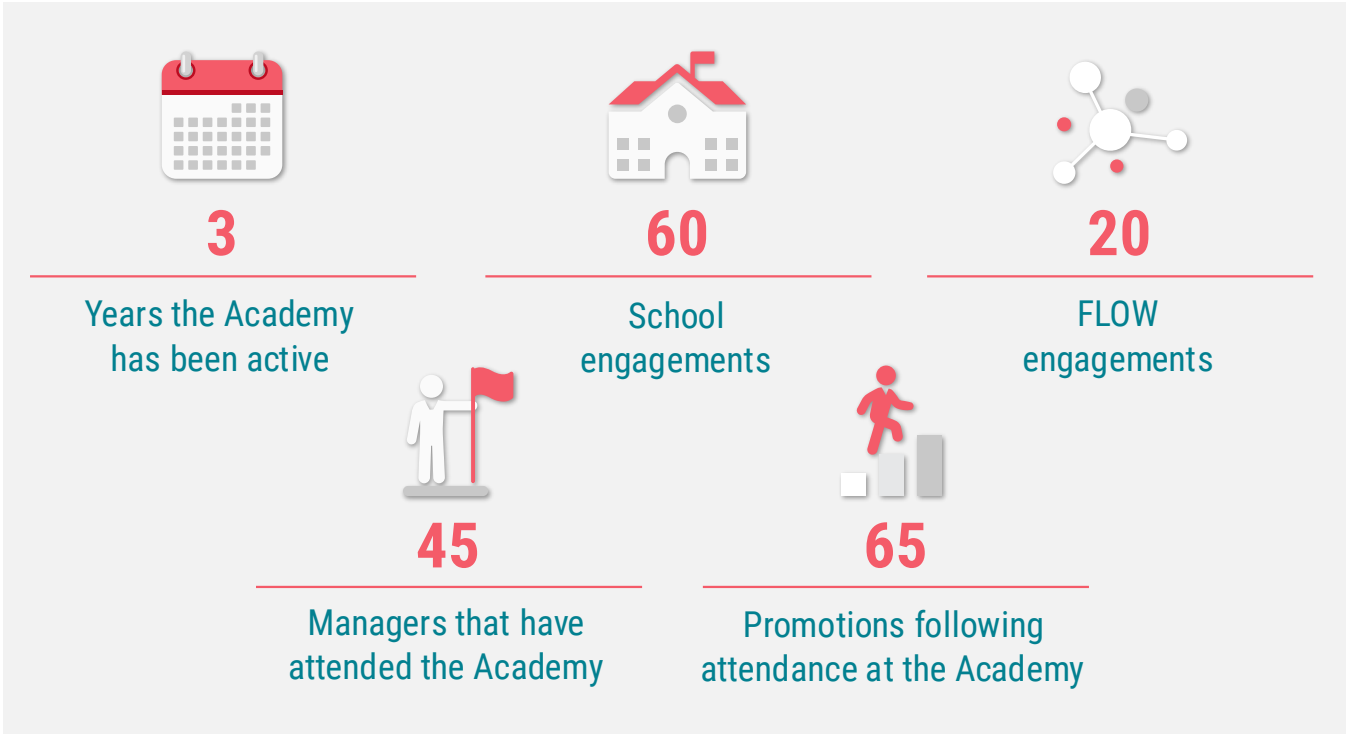
Matt Keith, Temp Customer Service Field Tech

Lessons Learned

Moulton Niguel is committed to creating a workplace culture that supports and empowers its most valuable resources: its employees. The following lessons learned will assist utilities as they create programs for a healthy and inspiring workplace culture:

- **Care for your employees:** Show employees that management cares about their wellbeing in addition to their job performance. Make an effort to engage and connect with all employees.
- **Encourage employees:** Create spaces that encourage employees to use their imagination to address and tackle problems. Encourage creativity and support employees in their efforts.
- **Learn from staff:** Engage with staff and subject matter experts on unfamiliar topics and provide neutral spaces for knowledge transfer.
- **Prioritize others:** Identify the needs of the utility and coworkers, and create time and space to address those needs.

Moulton Niguel’s Program by the Numbers



Conclusion

Moulton Niguel creates safe and supportive spaces for its employees to thrive and succeed through their foundation of Performance, Impact, and Resiliency and upholding the HERO Principles. The District's efforts began with a commitment to treating employees with respect and the development of programs to achieve that goal has resulted in the District winning the Top Workplace in Orange County for three years in a row. Moulton Niguel focuses on internal employee development through the two internal leadership academies and an environment that focuses on and reinforces the HERO Principles. Employees can provide honest feedback to continuously enhance the District and improve methods to support the community.

To keep pace with the changing technologies and information, the District recruits some of the nation's best and brightest through the Future Leaders of Water program and academic partnerships. These initiatives and programs allow employees to use technology and science to think creatively and advance the District towards a sustainable future. Moulton Niguel not only provides safe, high-quality water to its customers but also provides a healthy and inspiring workforce for its employees.

"Knowing the names of your employees means a lot. This is one part of a larger effort to show employees that you care, that they are seen, and that they are respected and taken care of."

Joone Lopez, General Manager



Fostering & Educating the Leaders of Tomorrow

West Michigan Water Careers Program

Introduction

The Grand Rapids Community College (GRCC) West Michigan Water Careers Program¹ embodies all four key elements of developing a water workforce: recruitment, retention, competency, and community partnerships. This case study will focus on the West Michigan Water Careers Program's emphasis on **recruitment** and **community partnerships**. Utilities with strong recruitment programs maintain a stable, robust, and qualified pool of applicants, and utilities that can develop meaningful community partnerships create value to both the utility and the community they serve. GRCC partnered with local workforce boards, community groups, and stakeholders to develop a transformative workforce training initiative that was tailored to the water sector and empowered individuals and

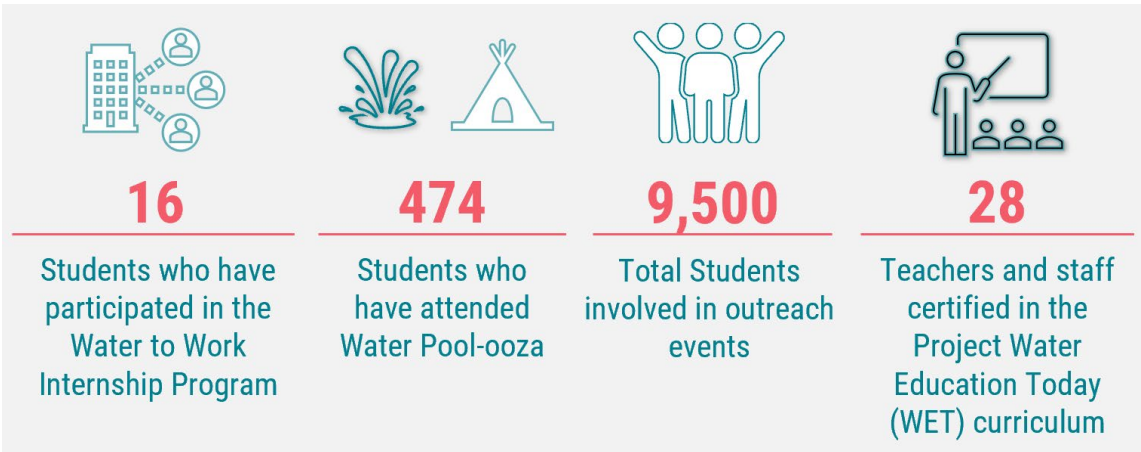
¹ To accelerate career pipelines in the water utilities sector and provide access to water utility workforce opportunities Congress, the American Water Infrastructure Act of 2018 authorized the Environmental Protection Agency (EPA) to develop a grant program under Section 1459E of the Safe Drinking Water Act (SDWA). EPA is authorized to award grants to nonprofit professional or service organizations, nonprofit labor organizations, nonprofit community colleges, institutions of higher education, or other nonprofit training and educational institutions to (1) assist in the development and use of innovative activities relating to water workforce development and career opportunities in the drinking water and wastewater utility sector, and (2) expand public awareness about drinking water and wastewater utilities and to connect individuals to careers in the drinking water and wastewater utility sector. In 2021 for the initial grant cycle, EPA selected a total of 9 organizations to receive grant funding under the "[Innovative Water Infrastructure Workforce Development Program](#)." GRCC is one of these 9 recipients.

strengthened communities. Recruitment is key: by reaching students of all levels, the program creates a stable, robust, and qualified pool of applicants for the City of Grand Rapids and surrounding utilities.

In the vibrant City of Grand Rapids, Michigan, the West Michigan Water Careers Program serves as a hub of education, training, and economic development. The program’s mission is to provide accessible pathways to success for all learners, and it offers a wide array of courses and initiatives designed to meet the evolving needs of the community. Recognizing the critical importance of workforce development in sustaining local industries, GRCC and the City of Grand Rapids forged strategic partnerships with employers, government agencies, and industry organizations to create targeted training programs that align with emerging workforce demands. GRCC’s partners include Bay College, Grand Rapids Public Schools, and West Michigan Works!. Local community partners include the Grand Rapids Urban League, Steepletown Neighborhood Services, and the West Michigan Center for Arts and Technology (WMCAT). This case study explores the collaborative efforts between GRCC and its community partners to shape a skilled and diverse water workforce through three programs: the Water Work Internship Program, the Water Careers Camp, and Water Pool-ooza.

Program

West Michigan Water Careers Program by the numbers:



Water to Work Internship Program

The Water to Work Internship Program is central to the West Michigan Water Workforce Careers Program’s commitment to workforce development. It is a collaborative initiative with Bay College that is designed to cultivate a skilled workforce for the water sector. Through this program, students gain hands-on experience and practical skills in various aspects of water management, including wastewater treatment, stormwater management, and water quality monitoring. Under the mentorship of industry professionals, interns participate in real-world projects, acquire industry certifications, and develop the competencies needed to succeed in the water workforce.

Moreover, the Water to Work Internship Program incorporates a strong focus on diversity, equity, and inclusion, ensuring that opportunities

“Behind every drop of water, there are hundreds of rewarding careers to explore. This program allows you to find a career that aligns with your values and makes a positive impact on our generation and beyond.”

Hillary Caron, Water Education & Programs Coordinator, City of Grand Rapids

for career advancement are accessible to individuals from all backgrounds. By actively recruiting underrepresented populations and providing support services such as career counseling and academic advising, GRCC aims to foster a more inclusive and equitable water workforce. Through these initiatives, GRCC is not only addressing critical workforce shortages but also is promoting social equity and economic mobility within the community.

The collaborative efforts between GRCC and its community partners have yielded significant outcomes and impact in the water sector and beyond. Multiple graduates of the Water to Work Internship Program have secured employment within the water industry. Building the water workforce through this program contributes to the operational capacity and resilience of local utilities and agencies.

Beyond its immediate benefits, the Water to Work Internship Program serves as a model for effective collaboration between educational institutions, employers, and industry stakeholders. By leveraging resources, expertise, and shared goals, stakeholders can address critical workforce needs, drive economic growth, and advance social equity in the community. As Grand Rapids continues to evolve as a hub of innovation and opportunity, initiatives like the Water to Work Internship Program play a vital role in shaping a more prosperous and sustainable future for all residents.

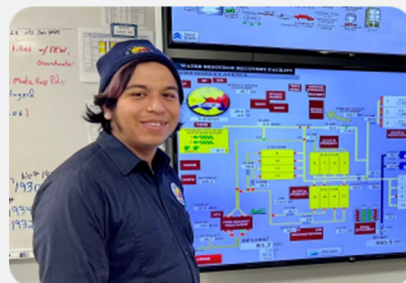
Water Careers Camp

The Water Careers Camp is another major workforce effort within the West Michigan Water Careers Program. This inexpensive annual summer camp offers a unique opportunity for middle school students to explore various career paths within the municipal water industry. This immersive camp provides hands-on experiences and educational sessions designed to introduce participants to the diverse range of roles and responsibilities involved in ensuring the safety and sustainability of water resources.

Through the camp's engaging activities, students gain insights into water treatment processes, water quality monitoring, infrastructure maintenance, and environmental conservation efforts. The camp includes interactive sessions facilitated by industry professionals, enabling students to interact with experts and gain valuable perspectives on career opportunities in the field.

Students in the Water Careers Camp not only develop a deeper understanding of the importance of water management but also acquire practical skills and knowledge that can pave the way for future careers in the water sector.

[READ THE STORY HERE »](#)



"What is nice about taking classes while we are working is that if we have any questions or don't understand something, we can ask the professor, a co-worker, or another intern."

Daniel Martinez, Cohort 1 Intern

[LEARN MORE HERE »](#)

"Like water and sewer utilities across the nation, Grand Rapids is experiencing staffing shortages due to retirements and the lack of a diverse pool of qualified water professionals. We are confident that this partnership with GRCC will help to address our long-term workforce needs and encourage young people within the community to pursue a career in the water industry."

Wayne Jernberg, Water Systems Manager, City of Grand Rapids



Water Pool-ooza

Water Pool-ooza is a free program aimed at educating community members about sustainability, conservation, and careers in water-related fields. The program features hands-on workshops, educational seminars, and demonstrations led by experts in the field, providing participants with valuable insights into water conservation practices, water quality management, and sustainable living strategies. Attendees learn about innovative technologies and initiatives aimed at addressing water challenges while also discovering potential career pathways in environmental science, engineering, and related disciplines.

Water Pool-ooza serves as a platform for fostering community engagement and raising awareness about the critical role that water plays in our daily lives. By partnering with GRCC, the City of Grand Rapids is empowering residents with the knowledge and skills needed to make informed decisions and take proactive steps towards building a more sustainable future. Through its emphasis on education, collaboration, and action, Water Pool-ooza inspires individuals to become stewards of their local water resources and champions of environmental conservation efforts.

Lessons Learned

GRCC and their community partners created the West Michigan Water Careers Program to help bring people from the community into well-paying jobs in the water sector and to increase the overall awareness of the career pathways available to community members. Lessons learned from the initial programs include:

Reach out to your local workforce boards early in the process, as they can be very helpful for your recruitment and outreach.

Tie your programming to the state's science curriculum to encourage adoption by teachers.

Actively seek out community-based partners that are already doing great work in the communities that you are trying to reach.

Provide wrap around support services to your interns with the help of mentors, regular check-ins and office hours.

Provide your cohorts with additional resources, such as math and chemistry classes, to help them prepare for their exams.

"We are grateful to the EPA for partnering with us to provide this essential training, which will provide up-close looks at family-sustaining careers that keep our communities safer."

Julie Parks, Former Dean of Workforce Training, Grand Rapids Community College

Next Steps

The West Michigan Water Workforce Program is expanding their program with students of all ages and to branching out to surrounding communities by identifying more regional partnerships. They are expanding their programs to help city employee gain additional skills to help advance the career paths for those already working for city government. Additional partners are joining the effort and are expanding the project's reach in terms of communities impacted. GRCC continues to work with their existing partners, and they will be joined by Muskegon Community College, the Cities of Holland, Wyoming and Muskegon Heights, and Plainfield Charter Township, Northview Public Schools and the Hispanic Center of West Michigan.

Conclusion

1The West Michigan Water Workforce Program exemplifies the transformative power of education, workforce development, and community engagement in the water sector. By providing accessible pathways to careers in water management and engaging with the community on the benefits of local water utilities, the program is not only addressing critical workforce shortages but also fostering a more resilient and equitable community. As the demand for skilled water professionals continues to grow, initiatives like the West Michigan Water Workforce Program serve as catalysts for innovation, economic development, and social progress in Grand Rapids and beyond.



"Everything we've covered we've been able to do hands-on experience with. It really lines you up for success. It's hard to not succeed within the program due to all the support and learning you're doing."

Angel Vazquez, Cohort 2 Intern



Introduction

"You have to plan for the future of your utility. If you don't train your workforce, where are they going to be in the future?"

Workforce Case Studies | 34

outstanding service to the community. Saco WWRD is an active member of regional and national associations and leadership encourages employees to attend conferences and join team challenges that help employees gain new skills and network with other utility professionals. Employees take classes at the Wastewater and Drinking Water Operator Training School and Maine Management Candidate School to train and stay up to date in clean water treatment, maintenance, asset management, and all other facets to running a treatment facility. This case study describes how Saco WWRD supports its employees through teambuilding, networking, and professional development opportunities.

Teambuilding Experiences

With a full-time staff of ten, Saco WWRD employees work together to provide service to its almost 12,000 customers. Saco WWRD supports these teambuilding activities by setting aside 2–3 percent of its annual budget for teambuilding, training, and travel opportunities. This consistent line item creates a culture of professional development and ensures that employees are able to consistently engage with professional networks.

Operations Challenge

Since 1998, Saco WWRD employees have joined the Maine state team and competed in the Operations (Ops) Challenge at the annual Water Environment Federation's Technical Exhibition and Conference (WEFTEC). At this event, teams compete in various challenges and scenarios and are scored on accuracy and time. This event, funded by state and regional associations, is a cost-effective opportunity to test Operators on their knowledge and skills to network with the thousands of other conference attendees. The annual participation at WEFTEC also ensures employees are regularly exposed to innovative ideas from across the nation and able to maintain connections to other water professionals. Many Saco WWRD employees have participated for three or four years and developed lasting relationships with their teammates.

Participation in the Ops Challenge is also important once employees return home. Historically, this experience is often a steppingstone to upper management positions. Saco WWRD Director, Howard Carter, notes that most of the Saco WWRD employees who have participated in the Ops Challenge have moved onto higher positions both within Saco WWRD and other utilities in the region.



The Maine Ops Team competes in a set of challenges testing their knowledge and communication skills.

Photo Credit: City of Saco/A. Dickinson

Regular, Internal Team Meetings

Saco WRRD has an all-team meeting every morning to discuss outstanding items, items for the day, and a plan for the upcoming day. These daily meetings follow an open discussion format and allow all employees to participate and share their ideas and thoughts. This format emphasizes teamwork and the Director and Deputy Director look forward to hearing feedback from their employees.

Networking Through Professional Development

Saco WRRD leadership encourages and provides funding for its employees to participate in water professional development courses through regional programs. Since 1985, all employees have participated in Joint Environmental Training Coordinating Committee (JETCC) courses.

The Joint Environmental Training Coordinating Committee

The JETCC coordinates training for Maine's environmental professionals. In addition to JETCC's regular ongoing certification and continuing education classes for Wastewater and Drinking Water operators, JETCC offers Management Candidate School (MCS) and an intensive Wastewater Operator School (WOS). As part of the New England Interstate Water Pollution Control Commission's (NEIWPCC) state network, JETCC, the Maine-based program partner, develops, coordinates, and conducts training courses that serve water quality professionals. Training credits fulfill requirements of the Maine Department of Environmental Protection's Wastewater Treatment Plant Operator Certification Program and are approved by the Maine Board of Licensure of Water Systems Operators for Drinking Water Operator Training. Participation in JETCC classes helps employees expand their engagement with other water professionals as they gain knowledge and experience in their respective fields.

Wastewater and Drinking Water Operator Training³¹: A regular, ongoing Operator Training schedule with a variety of entry level and advanced courses each fall and spring. As the foundation of JETCC training, Maine operators rely on this innovative program to remain current on water quality issues and to obtain state required continuing education.

Wastewater Operator School (WOS)³²: A 6-month, 12-session training program with in-depth training to entry level Operators, technicians, and others who want to deepen their understanding of biological wastewater treatment concepts. WOS prepares personnel for Maine's Wastewater Operator exams. Two Saco WRRD employees have completed this program.

Maine Management Candidate School (MCS)³³: An 11-month training program that provides intensive skills-development training and networking that is crucial for the next generation of water professional leaders. The curriculum, designed for mid-level Operators, includes technical courses on topics like construction planning and engineering basics, communication, and specialized skill training in budget preparation and personnel management. Four Saco WRRD employees have graduated from this program.

Water Leadership Institute

Through the Water Environment Federation, the Water Leadership Institute program aims to educate, train, and connect emerging leaders within the water industry. This intensive program allows participants to take management training and leadership development courses that combine the challenges facing water and wastewater industries. Participants attend an in-person workshop, complete assignments, and produce a

final project. Saco WRRD encourages its employees to apply to this program to further their professional development.

From Intern to Operator: Riley's Journey at Saco WRRD



Operator and Lab Technician, Riley C., participates in regular team meetings.
Photo Credit: City of Saco/A. Dickinson

Riley started at Saco WRRD eight years ago as an intern and is currently an Operator and Lab Technician. He started with an Associate Degree in Environmental Science and while working at Saco WRRD took classes in Wastewater 101 through the JETCC. As he progressed, he realized that, “having joined a team that has been together for many years and each teach member having significantly more experience in the field than I, it was clear that I had some learning to do.” Riley pursued a bachelor’s degree and felt, “Saco was an extremely useful resource for me, from notifying me of open scholarship opportunities and allowing me to use work computers after hours to complete homework, to even offering tuition reimbursement for some courses.”

Saco WRRD’s school assistance helped Riley complete his bachelor’s degree and continue to gain more skills at the utility through training and external opportunities. Riley participated in the Ops Challenge and pushed himself to learn new materials and network with other professionals. After his first Ops Challenge, Riley continued to study and passed his Grade 5 Wastewater Certification and then participated in the Management Candidate School. Riley notes, “These programs have all been a great reminder to keep learning. It inspired me to take on new challenges and meet others in the field.” Riley exemplifies the benefits of teambuilding and professional development opportunities. Check out this [video](#)³⁴ that highlights Riley’s journey at Saco WRRD.

Lessons Learned

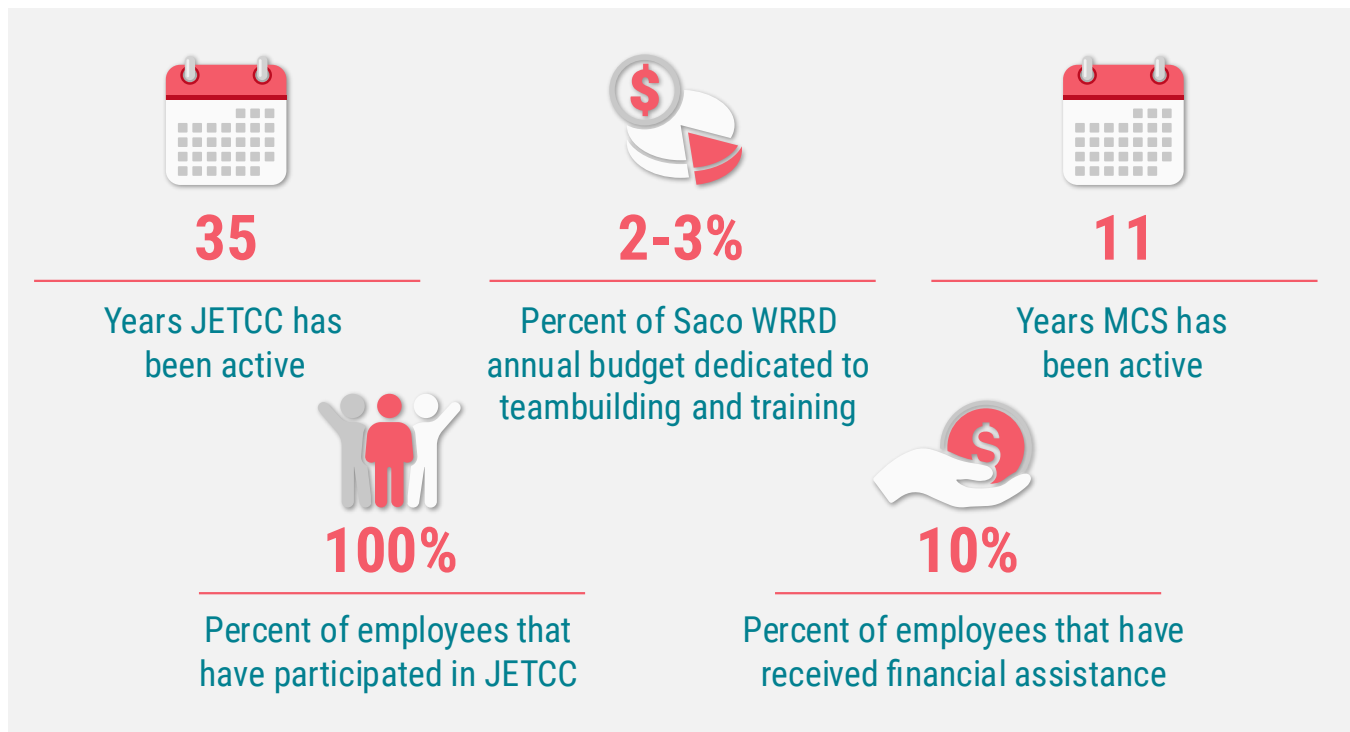
Saco WRRD supports its employees by creating a culture of professional improvement. Employees that engage in networking opportunities are celebrated and promoted. These lessons learned will help assist utilities create a supportive culture for their employees:

- **Support and Empower Your Employees:** Help employees accomplish their career goals by providing resources or on-site training. Let your employees grow and be supportive of their goals.
- **Encourage Professional Development:** Create a supportive environment where employees feel comfortable sharing professional ambitions and approaching management with opportunities.
- **Think Beyond Your Utility:** Support and train employees to succeed in your utility and at other utilities. Saco WRRD feels that if their employees receive training, succeed, and move to another utility, it benefits the clean water industry as a whole.
- **Include Training and Travel in the Budget:** Set aside money to support employee professional development training and traveling. Communicate with employees about utility resources when they are exploring continuing education classes and out-of-state conferences.

Creating Opportunities for Employees Beyond Saco

Saco WRRD is considered a “training ground” for Operators and leadership promotes professional development opportunities to gain experience in teambuilding and management skills. Director Howard Carter supports staff that gain these important experiences and seek managerial opportunities at other utilities. He believes it is important for water professionals to share their knowledge and skills to help advance the clean water sector as a whole.

Saco Water Resource Recovery Department’s Program by the Numbers

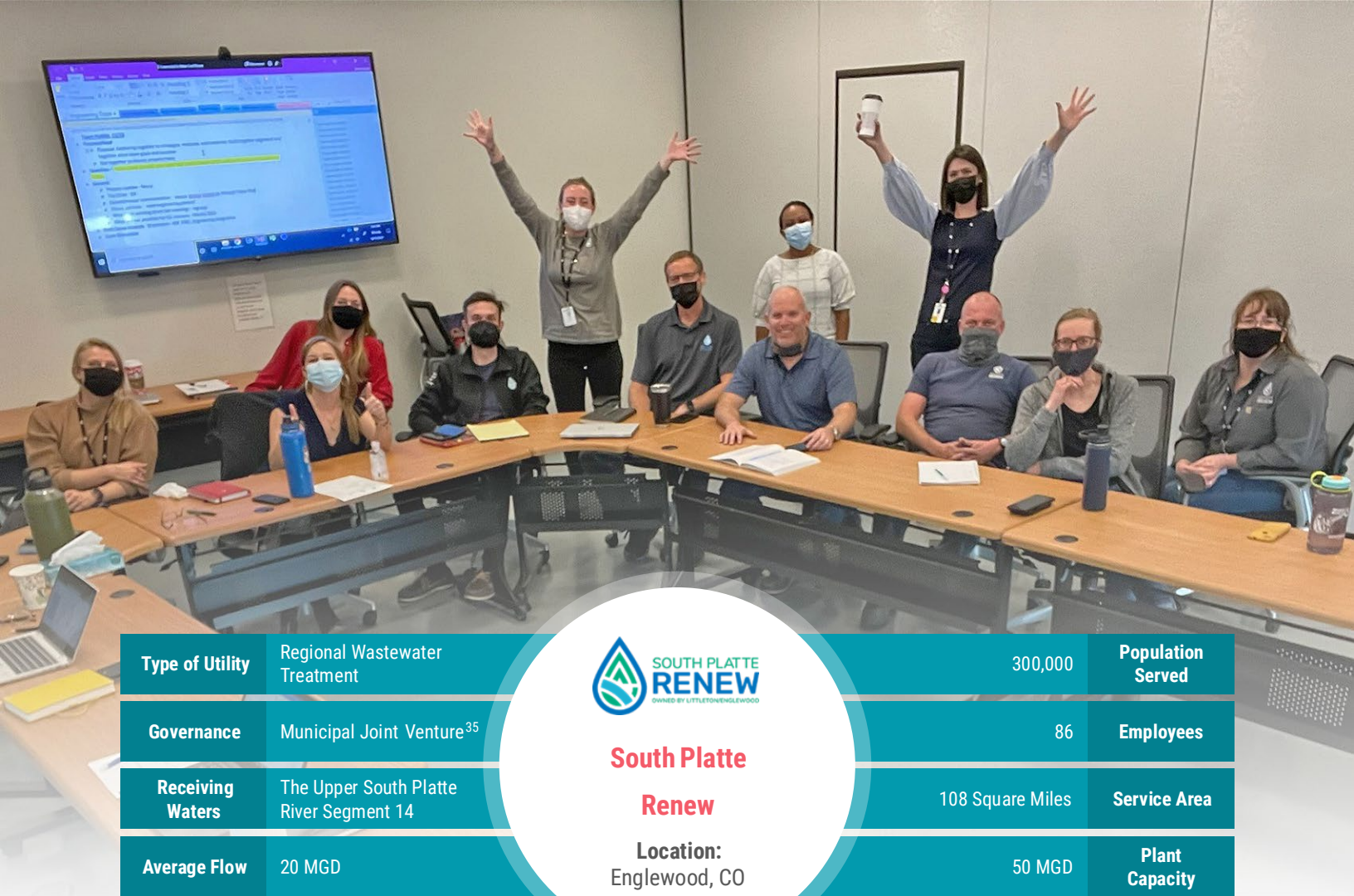


Conclusion

Saco Water Resource Recovery Department is the training ground for Operators and supports its employees through numerous external professional development opportunities. Employees further their knowledge and network with industry peers through the Ops Challenge at WEFTEC, take Wastewater and Drinking Water Operator Training courses, and gain leadership skills at the Maine Management Candidate School. Through these important engagements, Saco WRRD employees develop necessary technical and leadership skills to progress in their careers. Many individuals have progressed from Operators to Directors, either at Saco WRRD or at other utilities. Saco WRRD genuinely wants its employees to succeed and provides ample opportunities to support its employees and the clean water sector.

“For people thinking of entering the clean water industry, know that we care and support one another and that’s why many of us stay and make our careers out of it.”

Howard Carter, Director



Reimagining Values for a Positive Workplace Culture

Introduction

As the third largest water renewal facility in Colorado, [South Platte Renew](#)³⁶ (SPR) operates and maintains a wastewater treatment system to protect the communities they serve. SPR is committed to innovation – and that extends from its treatment facility to its teamwork. Over the last three years, the leadership team has committed to investing in making SPR a people-centric organization. Prior to 2019, SPR noticed that many employees were siloed in their departments, which resulted in limited to no knowledge transfer. The lack of knowledge transfer was also evident when new employees joined SPR.

When Pieter Van Ry joined as SPR's newest director in August 2018, the utility faced a variety of workforce issues, from lack of knowledge transfer to low workforce morale. Pieter conducted hour-long interviews with every employee to gain a base understanding of the utility's current culture. He asked employees about current conditions,

focusing on what was working as well as areas of potential improvements. From these interviews, it was apparent that staff did not feel part of a team, and the utility lacked a positive culture that made people want to show up and do their best work. When the leadership reflected on what they had heard, it became clear that there was a need to build the workforce culture from the ground up. SPR began a strategic initiative to change the organization's culture and create a positive, supportive, and sustainable workplace with high standards by revisiting the utility's Vision, Mission, and Values (VMV) through an inclusive employee-driven process. This bottom-up strategic initiative led to an increase in overall workplace satisfaction, development of proper knowledge transfer channels, employee support systems, and connection to a purpose that continues to gain momentum with the employees. This case study will examine SPR's VMV process, key organizational changes, and lessons learned to create a positive and sustainable workplace.

Vision, Mission, and Values Process

To kick off the VMV effort, the leadership team established a targeted committee made up of representatives from every level of the organization, including front-line employees, supervisors, and mid-level managers. By staffing the committee with all levels and departments, the team believed they would be better able to capture the full range of staff opinions and motivation.

Committee Engagement

Over the course of nine months, the committee engaged with every employee to identify key characteristics they wanted to add, remove, and retain in the existing workplace culture. With this valuable information, the committee moved towards developing the VMV with the assistance of an external facilitator. By using an external facilitator, the team was able to establish and maintain an unbiased atmosphere where members were encouraged to have open dialogue to drive the process forward. While developing the VMV that would support the utility's goals, reflect its culture, and reinforce teamwork standards, the committee had to confront difficult questions and assumptions. The committee pondered if employees and supervisors were being held accountable.

Additionally, staff feedback highlighted that they did not feel heard when they provided suggestions; these suggestions were not considered or incorporated. Lastly, the lack of transparency was the hardest assumption to address and change. The staff felt that they were not receiving the full picture from leadership thus leading to trust issues. This discussion around transparency, accountability, and staff engagement highlighted the committee's need to balance differing perspectives of its members, while at the same time seek to create consensus for the VMV. However, though conversations could at times be difficult, the committee aimed to seek understanding of every employee's different point of view so that they could develop a product free of individual judgement. Throughout the process, the committee had full upper management's support to operate independently and confidentially, which was essential to encourage authentic responses.

The final product was a new VMV that represented the organization they aimed to be and its workforce expectations for the future. In 2020, the VMV were completed and announced to staff to provide direction for decision-making and goal setting that would shape SPR's future. The new VMV outlines SPR expectations for all staff, from the front-line to the Director. Since the rollout of the VMV, some employees have left the utility who no longer fit in with the current and organizational direction. However, SPR is committed to recruiting and onboarding new employees who are invested in being a part of SPR's new and improved culture. SPR created a [video](#)³⁷ that highlights their vision.

Vision

Renewing water for Colorado's future.

Mission

Dedicated professionals leading the industry by:
Providing high-quality treatment for high-quality water.
Rethinking wastewater through innovative solutions
Engaging our community to build stronger partnerships.

Values

Safety
Passion
Leadership
Accountability
Trust
Teamwork
Excellence

Organizational Changes

Since the rollout of the new VMV in 2020, organizational morale has improved substantially. A staff survey conducted at the end of 2020 showed higher levels of employee satisfaction with staff reporting a greater sense of purpose and alignment with the organization. Over 80 percent of those surveyed felt valued for their contributions to the organization. In terms of professional development, over 70 percent of those surveyed felt they had opportunities to grow professionally. With the vision and mission clearly established, it has made it easier for staff and management to identify and pursue internal projects that support SPR's goals, align behaviors with cultural standards, and foster innovation through teamwork.

In addition to the revisiting the VMV, SPR made several organizational changes. These changes ranged from increased employee engagement in problem solving and decision-making, redesigned career progressions, to the creation of workplace redundancies. Although these changes took time to implement, SPR has seen a positive increase in workplace culture and continues to utilize employee feedback for further refinement and improvement.

Employee Engagement

There are numerous ways that SPR engages with employees to create a positive workplace. The following activities have been launched to help SPR achieve the aspirations set out in the VMV:

Creation of the "In Real Life Committee": This new committee carries forward the additional VMV initiatives and ensures the VMV are continuing to define and drive their culture. It is tasked with ensuring that all SPR staff are continually supporting the VMV.

Employee Satisfaction Survey: SPR staff participate in an annual Employee Satisfaction Survey to provide anonymous feedback for organizational leadership to review. Leadership gathers valuable insights from the survey that help guide and shape the organization moving forward.

Monthly All Staff Meeting: These monthly meetings give staff the opportunity to provide feedback on organizational direction, changes, and initiatives. All employees have an opportunity to ask questions and discuss any important issues. The leadership team will frequently recognize those that are going the extra mile for the utility through various methods of recognition.

Monthly Supervisor and Manager Meeting: SPR holds monthly meetings with supervisors and managers to develop and reinforce the importance of culture to the middle management group. At these meetings, supervisors and managers learn and discuss new strategies for management, leadership, coaching, and workplace engagement. As part of those meetings, the group will review and discuss an article or book on various leadership and workforce topics. SPR understands that middle management greatly influences the utility and having a strong, united, and intentional strategy for workplace culture is key.

South Platte Appreciation and Recognition Committee (SPARC): This newly created committee focuses on creating programs and events that recognize staff contributions. These efforts range from value awards to employee appreciation events that increase employee morale, productivity, and retention. In particular, the committee created the “Longevity” awards that are presented at all staff meetings. It recognizes staff anniversary month and for those who have been with SPR for over five years, they are presented with an award and a speech by their supervisor on their major contributions over their tenure.



“The SPR All Staff meetings have moved us into our desired culture by reinforcing our values. Bringing us all together as a team, following an agenda by leadership, sharing our passions with projects, and recognizing all the hard work our teams and individuals are doing strengthens the positive workplace culture SPR is building.”

Brenna Durkin, O&M Planner

Career Progressions

In conjunction with developing the new VMV, SPR wanted to provide clear expectations on career progressions for the engineering and operations departments to allow for open communication and pathways to success for future and current employees.

First, job descriptions were reviewed and updated to ensure they accurately captured the requirements and responsibility for each position. These descriptions are important for planning for future hiring opportunities, promoting employee productivity and accountability, and ensuring long-term workforce sustainability. Each job description depicts required competencies and necessary training or coursework, along with desired leadership qualities. The job descriptions are crucial during the hiring process and are a basis for interview questions that dial in on the candidates’ skills relative to the position’s competencies.

In addition to a review of job categorization and requirements, SPR conducted a compensation study to ensure that its pay plan was competitive with other regional utilities in the Denver metro area and was fair and consistent within the utility. The results of this compensation study showed that SPR pay plan was below the other utilities in the area. To further examine this difference, SPR created the Compensation Plan to examine the organization's internal pay equity. This plan established four job grades that helped differentiate between positions and standardize compensation across equivalent skill sets and responsibilities. The four job grades of Operations, Administrative Support, Professionals, and Managerial and Directors each had a minimum, midpoint, and maximum pay range. SPR then analyzed each job position and determined where it fell in comparison to the Compensation Plan and addressed any inconsistencies based on resource allocation and through several market adjustments. SPR went through an extensive operations and communication process before adjusting staff salaries. SPR incorporated the financial changes resulting from the new Compensation Plan into the budget, created implementation and communication plans, and discussed the plan with staff. This process took approximately one year to complete and resulted in a Comprehensive Plan that will help SPR's employee recruitment and retention, as well as the utility's internal and external equity across positions. As a result of the Compensation Plan, several employees received salary adjustments and the plan is scheduled to be re-evaluated every two years to ensure that compensation remains competitive with the market.



Employees, like Jamie, can be nominated for Staff Value Awards that highlight their contribution to the utility.

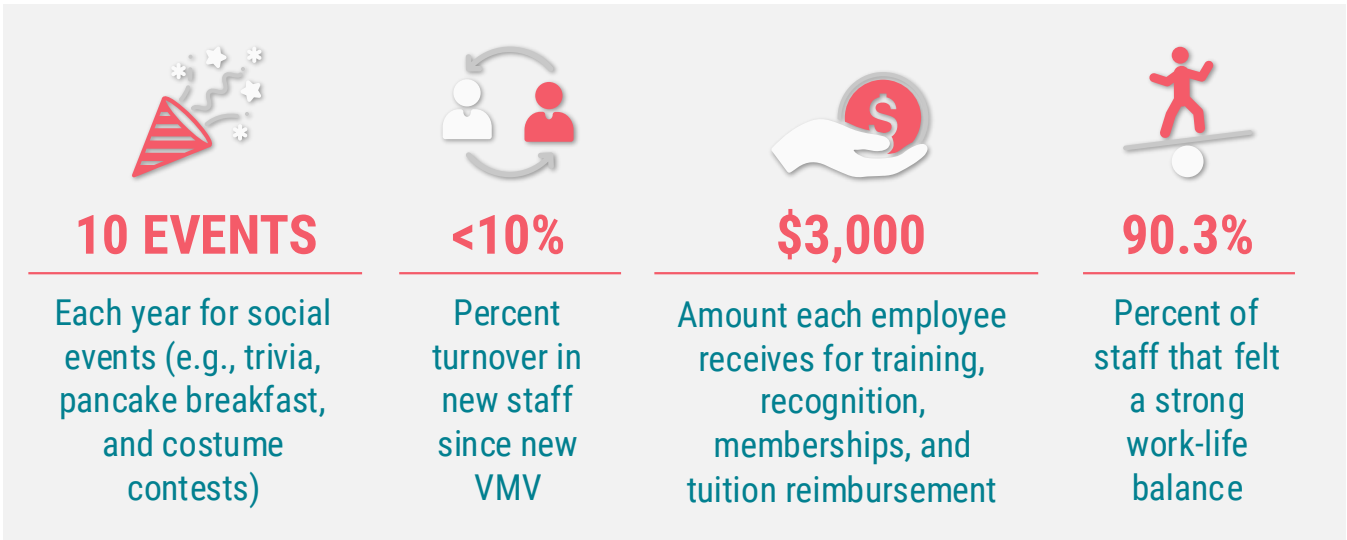
Building Redundancies

With the influx of new employees and expected retirements, SPR created a process for knowledge transfer and building redundancies into its various departments. For example, there was only one employee responsible for process control decision-making. To build in redundancies and decentralize decision-making, SPR created a multi-person Process Control Team composed of an Operations Supervisor, Process Specialist, Instrumentation Operator, and several shift operators. With this multi-person team, other staff members can learn, grow, and show leadership in this area. This team meets daily for internal coordination and then biweekly with laboratory, regulatory, and engineering staff. These valuable touchpoints allow the full Process Control Team to stay up to date and build in redundancies in the event someone on their team is sick or decides to leave the organization. In the event that someone leaves SPR, other team members have the knowledge to continue regular operations and train new employees.

SPR has taken a similar approach with the Biogas and Beneficial Use Programs by including staff from different divisions to participate in workgroups. These workgroups aid in knowledge transfer and allow staff to address programmatic issues together. Throughout the organization, peer-to-peer learning has become much more prevalent and encouraged. The Engineering team works together to analyze, critique, and evaluate project designs. The

Operations team utilizes workgroups and daily meetings to share information in a team setting. SPR is looking for additional opportunities to integrate peer-to-peer learning into other departments and teams. Overall, there has been a substantial breakdown of silos and increased collaboration across divisions within the last year.

South Platte Renew’s Programs by the Numbers



Lessons Learned

SPR provides a positive and supportive workplace environment and is continuously looking for additional ways to support its employees. These lessons learned will help utilities create an engaging and supportive workplace culture:

- **Welcome Feedback and Communication:** Maintain a positive workforce culture by welcoming communication, accountability, feedback, and transparency. Understand that creating and maintaining a positive culture is a continuous cycle.
- **Drive the Culture:** Encourage leadership to continuously drive the culture through large and small staff engagements. Without consistent leadership alignment and support, the workforce culture changes will not last.
- **Maintain Consistency and Predictability:** Establish an environment that has predictable expectations to which everyone is held accountable. Positive organizational culture can thrive when everyone understands what is expected of them.
- **Embrace the Timeline:** Create realistic timelines and understand that improving workforce culture does not happen overnight. SPR notes that it takes time, dedication, and persistence to develop and maintain a lasting positive culture.
- **Seek Out Dedicated Leaders:** Pursue supervisors that align with the VMV and allow them to drive the workforce cultural development and adoption.

Conclusion

Since 2019, South Platte Renew has dedicated efforts to cultivate a positive workplace culture that supports all employees. SPR's dedication led to the utility closely examining its own workplace culture, which uncovered a fundamental issue that required a review of how the utility works together to support SPR's goals. The VMV process required SPR's leadership to have honest, brave conversations with its employees to create a clear path for a desired future. From revisiting the utility's Vision, Mission, and Values to creating redundancies in several departments, SPR is always looking for opportunities to develop and implement new strategies and actions that foster a sense of pride and ownership among its employees. Although these strategies take time, SPR is dedicated to the longevity of its utility and routinely engages with current employees for feedback. SPR understands that its greatest asset for recruitment and retention begins with its current employees and works to create a positive workplace culture for its current and future workforce.

"Over the past few years at South Platte Renew, the cultural change that has taken place has impacted our workforce in ways that I did not anticipate. Employees, including myself, are more productive and engaged, take ownership of organizational progress, and are generally happier to come to work."

**Kacie Allard, Deputy-Director of
Business Solutions**



Type of Utility	Wastewater	2.6 million	Population Served
Governance	Appointed Council	541	Employees
Receiving Waters	Mississippi, St. Croix, and Minnesota Rivers	3,200 Square miles	Service Area
Miles of Pipe	Over 640 miles	370 MGD	Plant Capacity



**Metropolitan Council
Environmental
Services**

Location:
St. Paul, MN

Supporting Management and Equity Priorities

Introduction

The [Environmental Services division of the Metropolitan Council](#)³⁸ (known as MCES), located in the Twin Cities metro area, protects the public health of more than 2.7 million residents and the surrounding environment through efficient, cost-effective wastewater collection and treatment. To ensure it can provide this vital service now and in the future, MCES has made a commitment to advancing workforce and equity practices.

The MCES workforce strategy is a multi-pronged approach that includes recruiting from the community, retaining equity-minded employees, and bundling equity support services with other enriching employee life cycle services. First, MCES partners with local unions and workforce centers to recruit individuals for apprenticeship and training programs for electricians and construction inspectors. In addition, MCES maintains its long-standing relationship with the [State of Minnesota’s Urban Scholar program](#)³⁹ to provide college students from diverse racial and ethnic backgrounds with hands-on summer internships that include leadership development. Second, MCES strives to

retain employees by providing support to management. Managers often set the tone of an organization and ensure implementation of equitable practices. It is crucial that managers are supported in these practices through targeted trainings and introspective exercises. Lastly, managers and employees are supported by the division's Workforce & Equity department that oversees the organization's equity strategies and workplace support initiatives. This case study will focus on the existing recruiting programs, such as the apprenticeship, training, internship programs, and how MCES is advancing the needle of equity through new initiatives to support management so they in return can support their employees and equity in the workplace.

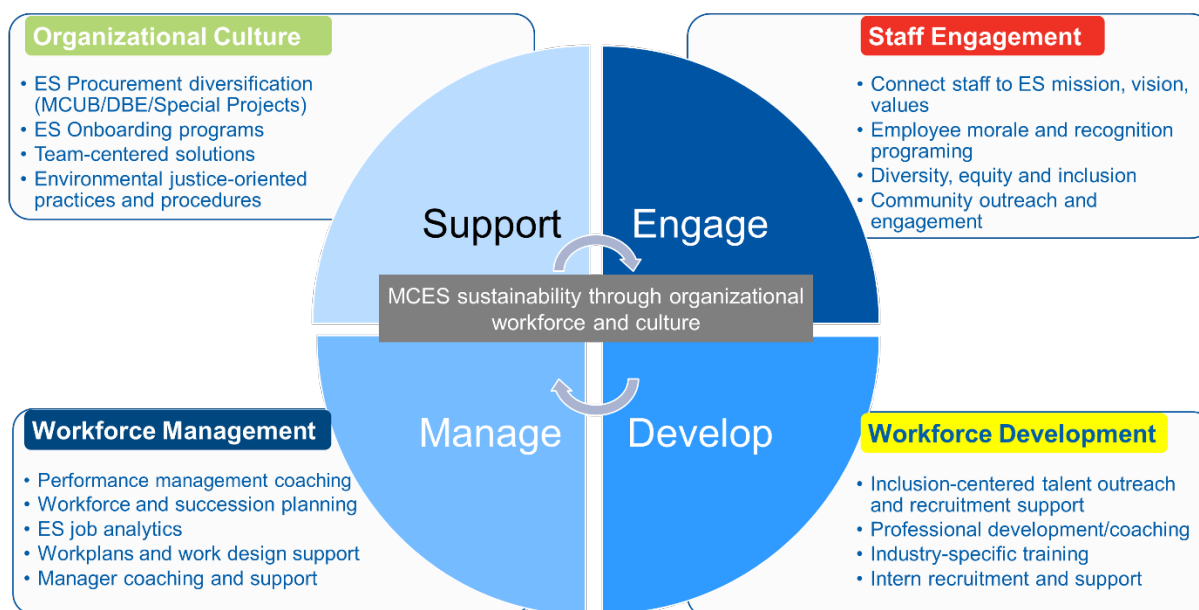
Workforce & Equity Department

MCES is committed to its community and staff and understands that many of its staff reside in and represent the diversity of the communities they serve. As one of the 25 largest metro areas in the country, the Twin Cities region is faced with numerous inequities between white, non-Latinos, and people of color, ranging from the widest disparity in household income to the second widest disparity in employment rate in the nation. These growing inequities highlighted the need for MCES to closely examine and advance its equity practices and opportunities within its workforce and community. To accomplish these tasks, MCES established a Workforce & Equity (W&E) department in 2020.

Today's W&E department began with one position in a general administration department. After observing the value and need, MCES committed to more-robust, division-wide workforce and equity practices and expanded the W&E department to an eight-person team with leadership and resources. This department reports directly to the General Manager. The W&E department views the workforce and intercultural development cultural system as connected. It provides MCES management with tools that promote employee retention and a positive work culture. The W&E department is integrated into the workforce operations of MCES. For example, the department works with Human Resources and managers on positive performance management (discipline) issues and protocols; supports MCES-wide training compliance (both equity and license-linked operational training); participates in union relationship building and negotiations, workforce planning, targeted workforce recruitment, employee recognition program management, leadership development training, and intern management. With this integral role in operational decision-making and having resources to recognize employee performance, conduct training, and evaluations, the W&E department has the ability to impact change. This strategic positioning and mindset enabled MCES to expand its recruitment strategies and incorporate equity initiatives that go beyond the traditional diversity, equity, and inclusion programs most organizations rely on.

Metropolitan Council Environmental Services Organizational Workforce and Equity System

Foundations of MCES organizational workforce
and culture business system



Apprenticeship, Training, and Internship Programs

To support its mission to partner, plan, and provide services to protect the region's waters, MCES aims to hire talented individuals from the local communities and build a workforce that reflects the diversity of the region. They have invested in numerous recruiting programs over the years and currently have two apprenticeship programs aimed at cultivating a strong water workforce with specialized technical skills. These apprenticeship, training, and internship programs aim to advance equity by increasing access to stable, high-quality careers for veterans; people with disabilities; women; and Black, Indigenous, and People of Color (BIPOC).

Electrical Apprenticeship Program

Electricians working in utilities have a unique skillset that relies on problem-solving, collaboration, and adaptability. Prior to 2019, MCES struggled to find emerging electricians that possessed these skills and who also represented the diversity of surrounding communities. The managers of the Electrical Planning & Maintenance team at MCES were supportive of the W&E Department's inclusion efforts, and they partnered to increase diversity in the Electrical Planning & Maintenance team. Tapping into existing relationships, MCES staff reached out to local electrical unions that were also looking to increase inclusion and diversity in their workforce. After brainstorming, MCES and the [International Brotherhood of Electrical Workers Local 110](#)⁴⁰ (IBEW) built a pipeline from the community to increase the number of candidates from underrepresented communities. IBEW selected candidates who were interested in electrical apprenticeships and had baseline qualifications that showed likelihood for success. Apprentices participate in a 12-month program and gain specific hands-on electrical experience that can apply towards the state certification exam. During the program, they gain knowledge on operating electrical instruments and troubleshooting common problems in the context of a water utility. After the program, apprentices have a competitive advantage over other applicants for open positions because they have experience working with specific MCES systems and protocols.

Five electrical apprentices have participated in the program. A key element of success was the IBEW's willingness to collaborate and foster this relationship to ensure that local electricians received the necessary support and had job opportunities. Internally, the manager saw the program's value to the department and continued to champion the effort. With this support, MCES was able to continue bringing in top underrepresented talent to learn more about MCES' opportunities. At the beginning of the program, some staff held a misperception that the apprentices were underqualified and only brought it due to an affirmative hiring process. Over time, staff have seen the value of the equity program and the new perspectives these apprentices bring to the organization.



Apprentices like Nancy, have the opportunity to gain hands-on knowledge on utility electrical systems.

Construction Inspector Program

Similar to the Electrical Apprenticeship Program, MCES noticed that the pool of candidates for its construction inspector positions had the right qualifications but lacked gender, racial, and ethnic diversity. This observation, combined with the anticipated need for additional inspectors, prompted MCES, in partnership with the Human Resources department, to create a workforce development solution. This solution would identify individuals from diverse backgrounds who had the aptitude, interest, and commitment to grow into a career as a construction inspector. MCES saw this as an opportunity reach out to its surrounding communities and increase the diversity of construction inspectors while providing the necessary training. MCES wanted to work with a local community organization for its recruitment efforts. Previously, the Human Resources department had partnered with [Twin Cities Rise](#)⁴¹, an organization that assists and empowers community members to find meaningful employment through career training and personal empowerment, on initiatives with the Metro Transit division. Through this existing relationship, MCES was able to connect with Twin Cities Rise and develop a program that created a progressive career pathway for people interested in becoming a construction inspector.

"This program is especially rewarding because it allows us to not only recruit from a more diverse population but allows us to train future inspectors in the specifics of the job."

Jim Sailer, Manager of Construction Services

Twin Cities Rise recruits candidates from underrepresented populations and recommends them to MCES. MCES reviews and interviews each candidate for admission into the three-year program. During the first year, trainees serve as construction inspector trainees and learn the fundamentals of the job. During their second and third year, trainees are associate construction inspectors and gain on-the-job experience until they meet the qualifications to become a certified Construction Inspector. After they complete the program, meet the qualifications to become a certified Construction Inspector, and complete the probationary period, they are eligible to be hired into existing positions. Since the program initiated in 2021, MCES has had two Construction Inspector participants go through the program and both are on track to be hired. These staff will complete the trainee program and presumably become MCES Construction Inspectors in 2023.

Job Career Skills Program and Internship Programs

In addition to the apprenticeship and inspector programs, MCES also has developed multiple “earn while you learn” initiatives. These initiatives were developed to intentionally focus on underrepresented or marginalized workers and increase the diversity of the field.

Urban Scholars Program: This immersive 12-week internship and leadership institute program is for undergraduate, graduate students, and recent college graduates. Scholars are matched with a public sector organization within the Twin Cities metropolitan area ranging from the Metropolitan Council to the Children’s Hospitals and Clinics of Minnesota based on their career goals, professional and academic experience, skill sets, and interests. During the week, scholars spend four days at their internship location and one day participating in The Urban Scholars Leadership Institute at Metropolitan State University. They learn and practice skills in professional development, public speaking, and leadership. Urban Scholars have worked in the following MCES areas: Community Coordination, Asset Management and Planning, Water Supply Planning, and GIS Wastewater. Since 2014, MCES has hosted 17 scholars and five have been hired as full-time employees.



Over the course of three months, Urban Scholars gain valuable professional skills preparing them for their next career move.

Career Skills Partnership: This newly emerging partnership will provide a pathway for youth, people with disabilities, BIPOC, and people reentering the workforce after incarceration to develop skills and become fully employed with MCES in Interceptor Services. This program is structured as on-the-job training where participants spend half their time in classroom instruction on wastewater careers at a local technical college, in MCES-specific safety training and in online wastewater technical training. The other half of their time will be performing the duties of the Interceptor Service Worker in the field. Planned as a two-year program, it will launch later in 2022.

Industrial Painting Department Program: MCES has developed a partnership with the International Union of Painters and Allied Trades District Council 82/Local 61 to recruit more diverse candidates into the industrial painting department. In this program, skilled painters without specific water-industry industrial painting experience will be hired as two-year temporary employees allowing them to learn the necessary skills to become a skilled water-industry industrial painter. When they have completed the two-year temporary program, they will be eligible to compete for permanent positions within the Industrial Painting Department. The program will hire the first cohort in summer/fall 2022.

Associate Outreach Coordinator

MCES created a special position, the Associate Outreach Coordinator (Associate Coordinator), to help increase the visibility and value of MCES to the community. The Associate Coordinator fosters and nurtures relationships with local community organizations and partners that serve underrepresented populations and ultimately helps develop the MCES future workforce through partnerships, outreach, and engaging experiences. Previously, the Associate Coordinator was an Urban Scholar who worked with the Office of Equal Opportunity and Human Resources Department. Due to the success of past scholars and the growing need, it was clear that having a designated full-time Associate Coordinator was essential to having robust and continuous community relationships. In this position, the Associate Coordinator intentionally seeks out potential organizations to partner with and develops a reciprocal relationship.

The Associate Coordinator helps organize career focused tours, career fairs, speaker and panel events, mock interviews, and informational sessions and works to diversify the internship and trainee programs. The career focused tours are customized to each organization and group and provide participants a glimpse of the inner workings of a wastewater treatment plant and the employees that work there. Participants can ask questions and learn about career opportunities and skills needed to work in the wastewater industry.

While this position has had many successes, the Associate Coordinator role has faced multiple challenges. As a government agency, MCES acknowledged the need for a slow, transparent, and patient approach with communities to build and maintain trust. In addition, the Associate Coordinator works on targeted outreach and recruitment for open job positions. In the past, the Associate Coordinator reexamined job postings to ensure the qualifications allow for a wide recruiting net. Some education or experience qualifications have been altered, such as including being multi-lingual as a preferred qualification. Despite these challenges, the Associate Coordinator has been another avenue for MCES to become more visible and present in its communities.

Management Support via Intercultural Development Inventory

With the development of the 2018 equity strategic plan, MCES explored strategies to improve retention of diverse employees. Without the right programs, processes, and support systems to retain employees, even the most successful recruitment efforts would not be sustainable.

To build manager awareness and identify training needs, MCES implemented an assessment tool that looked specifically at intercultural competency, which is the ability and practice of navigating environments that are composed of people from cultural backgrounds outside of their own. This holistic approach provided MCES a baseline of management's intercultural competency and targeted feedback on areas of improvement that could be supported via educational processes and training. This type of self-reflection is vital for managers since they lead teams and can drive an organization's culture and equity implementation process.

The [Intercultural Development Inventory](#)⁴² (IDI) asks 50 multiple choice questions to measure where an individual is in terms of intercultural competency. IDI responses are analyzed individually and as a group and then are categorized on a continuum: Denial, Polarization, Minimization, Acceptance, and Adaptation. MCES managers took the IDI in 2021. Like most IDI assessments, the majority of MCES managers rated their perception of their own intercultural competence higher than their actual orientation toward cultural differences. This gap showed managers that there was room for them to improve and provided concrete ways to increase their intercultural competence. Despite the short amount of time, managers already see changes in their behavior and the positive impacts it has on the teams that they lead.

MCES also wanted to know how employees perceived equity and inclusion work in MCES. Questions were added to the council's employee engagement survey to gather feedback on how employees perceived workplace actions regarding diversity, equity, and inclusion and if they felt comfortable speaking up in these matters. Since the results, the management team has convened in small group discussions, coaching, and training sessions to improve the cultural competency of their department and the council. To continue the momentum, MCES hopes to provide additional coaching sessions for all MCES staff so they can secure and then reflect on their own individual IDI results.

MCES values the IDI because it is an objective assessment that provides a baseline of workplace culture and inclusion. The assessment provides managers and Council leadership with clear ideas and steps to improve the workplace culture. MCES is working with key division leaders to increase their inclusion practices. MCES acknowledges that taking the IDI once is important to gain an individual's and group's baseline for improvement. However, it is essential to retake the IDI every 2-3 years to see progress and determine if programming and training are effective. In 2023/2024, managers will complete the IDI again and staff will be resurveyed to determine whether the implementation of inclusion practices were effective. MCES will adjust its practices as needed. These tools provide valuable information on effectiveness of practices and help advance the needle in advancing equity in the workplace.

Lessons Learned

MCES is committed to creating a supportive workplace for management to grow and commit to equity-focused initiatives. The following lessons learned will assist utilities as they look to create recruitment and managerial support programs:

- **Establish sponsorship within leadership:** Have a sponsor within the organization’s leadership to defend and support the work of the equity department to enable growth and innovation.
- **Right-size the support:** Provide a right-sized budget, staff, and authority for tasks in the equity department for effective work.
- **Celebrate successes:** Accept that this work takes time and effort and set aside time to celebrate successes along the way.
- **Engage strategically:** Use social and positional capital to engage with ambassadors or champions who are outside of the equity department and early adopters to help bring in the “fence sitters” along the way to advance equity work and partnerships.
- **Measure and measure Again:** Identify measurable goals and use an objective assessment toll to measure the progress towards the goal every 2-3 years.
- **Recognize the Synergy:** Integrate other core workplace and employee life cycle supporting activities into the fabric of the equity department's portfolio of services to increase its touch points with employees and managers.

MCES Programs by the Numbers



Conclusion

As one of the largest 25 metro areas in the country, MCES plays an important role in the community for the region’s 2.7 million residents. MCES actively engages with its communities to create and support innovative apprenticeship, training, and internship programs with an aim to recruit talented individuals. MCES understands that recruitment is just the first step in a comprehensive workforce program. The next step in workforce success is retention. Retention requires support from the organization, leadership and, most importantly, management. Managers play a crucial role because they interact day-to-day with employees and implement organizational policies and workplace culture expectations. As a result, managers require support to ensure they are carrying out organizational policies, such as equity efforts, to the best of their ability. To better support managers, MCES created the W&E department and a

holistic approach to support equity efforts at the organization. MCES emphasizes that equity work takes time and effort and is comprised of many different elements such as the W&E department, equity strategic plan, and managerial and employee support programs. MCES understands that equity is a multi-pronged approach in that one element on its own does not equate to a successful and equitable organization. MCES is advancing the equity needle by incorporating new strategies such as the IDI and tailored managerial support to ensure it is providing equitable opportunities for its employees and community.

“It is not enough to successfully recruit a diverse range of candidates today, but rather to emphasize building a self-generating inclusive work environment where employees and managers support and demonstrate the valuing of new perspectives. We strive to build a multi-pronged, multi-partnered participatory coalition of engaged employees and managers. In doing so, Workforce and Equity invests in the whole work experience of both today's and tomorrow's MCES employees.”

Jennifer Zuchowski, MCES Senior Manager, Workforce and Equity



Type of Utility	Drinking Water	 CENTRAL UTAH WATER CONSERVANCY DISTRICT Central Utah Water Conservancy Location: Orem, UT	1.5 Million	Population Served
Governance	Municipal Department		120	Employees
Receiving Waters	Snow Melt, Reservoirs, and Ground Wells		18,000 Square Miles	Service Area
Miles of Pipe	142 Miles		130 MGD	Plant Capacity

Ensuring the Future: Every Plant Operator Is a Potential Plant Manager

Introduction

[Central Utah Water Conservancy District](#)⁴³ (CUWCD) has delivered clean water for the growing population of Central Utah's eight counties for over 50 years. With 62 percent of Utah's population currently living within its boundaries, CUWCD recognizes that achieving customer expectations and utility sustainability depends on developing and supporting its workforce.

The Problem: Twenty years ago, CUWCD's hiring and training workforce strategies did not result in a prepared, engaged workforce. The treatment plants had high turnover rates and a small candidate pool for new hires, which resulted in a staff unprepared to react to change. When positions were filled, the hiring process focused on present needs but did not anticipate management positions that would likely be vacant in the future. Additionally, plant operations at the utility rarely provided formal training opportunities. The turnover rates, recruitment challenges,

short-term hiring views, and lack of employee training led to low morale, lack of knowledge transfer, and ultimately a decline in employee trust, which left the various plants at risk.

The Path Forward: In 1997, CUWCD initiated changes to their recruitment strategies and employee development programs to address these issues. First, CUWCD started to hire differently, by recruiting and hiring treatment plant staff with STEM backgrounds and leadership experience. Next, CUWCD developed a training program for employees differently to advance their technical and leadership skills, leading to upward mobility within the utility. This case study will examine CUWCD's journey and lessons learned in their efforts to hire and train differently.

Hire Differently

Prior to 1997, CUWCD's hiring practices focused only on present workforce demands. CUWCD utilized its network from the Utah Water Quality Alliance to share information, cross-train with other treatment plant staff, and communicate staffing opportunities, but it did not have a specific community outreach initiative. As the years went on, senior treatment plant positions and management roles became vacant due to retirement and turnover without well-qualified internal replacement. This disconnect between current and future needs led CUWCD to hire externally for senior staff positions, leading to low employee morale. To address this gap in personnel, CUWCD recruited the best and brightest candidates with STEM backgrounds, interviewed candidates with a long-term growth mindset, and provided competitive entry-level salary and benefits. These "Hire Differently" changes brought in candidates that would not only succeed in their current role but demonstrated traits of a great future Plant Manager.

Advertise to Attract the Best and Brightest

First, CUWCD changed its hiring announcement to attract those with STEM backgrounds and advertised employment opportunities at academic institutions. To do this, CUWCD changed the job description title from "Operator" to "Water Systems Technician." This change attracted candidates with STEM technical skills, as opposed to those with only heavy machinery experience. CUWCD also developed partnerships with local university professors to increase student awareness of the attractive, well-paying jobs at CUWCD. Professors within science departments advertised and encouraged qualified students to apply to these positions. Interested students were invited to tour the facility to see the real-world applications of their STEM skills and to learn of career pathways within the water sector. Currently, CUWCD is invited to college classes to teach water topics and college career fairs to discuss employment opportunities. CUWCD typically recruits 4–5 interns each year from local colleges.

Interview with a Growth Mindset

To effectively identify interviewees with long-term growth potential, CUWCD needed to articulate critical knowledge categories for successful plant operations. Leadership met with facility managers and developed five knowledge areas needed for success, from Water Systems Technician to Plant Manager:

- Education and Water Experience
- Computers and SCADA
- Electrical Skills
- Mechanical
- Personal Character

Once these critical knowledge categories were identified, CUWCD scored each candidate's application based on their demonstrated knowledge within each area. Top applicants were then invited, as a group, for a facility tour, which served as an initial screening or "informal interview" to assess interest and ability. A refined group of candidates were selected for formal interviews. Interview questions touched on the variety of potential situations

and functions anticipated for each role, ranging from instrumentation and electronics to leadership experience. Top candidates were then given an exam to assess computer skills and problem-solving abilities.

This multi-tiered approach allowed CUWCD to interview and hire the right candidates with the necessary technical background and growth potential. Each candidate filled the present position vacancy but was also hired for their potential to grow into the role of Plant Manager.

Shift Pay Differential

CUWCD has around the clock employee coverage with plant roles that require consistent shifts as well as roles that require rotating shift schedules. Rotating shift schedules vary each month and consist of afternoon (swing) and evening (grave) shifts. CUWCD noticed that highly trained rotating shift employees were transferring internally to other CUWCD departments that offered consistent day shift schedules. These transfers occurred when no consistent non-rotating day shift positions were available and left the treatment plants short on experienced employees, thus creating risk for CUWCD.

To prevent the loss of staffing in critical rotating shift positions, CUWCD increased the shift differential resulting in higher hourly wages for swing and grave shifts. Employees with swing shifts received \$2.75 more per hour, originally \$0.25 per hour, and grave shift workers received \$5.50 more per hour, originally \$0.50 per hour. This increased shift differential incentivized employees to stay in their rotating swing and grave shifts, which resulted in fewer vacancies and less overtime pay. The increased differential pay annually per employee was approximately \$6,000, but the net increase per employee after the first year was approximately \$1,500. This “savings” from what was budgeted, appeared to be the result of employees choosing not to call in sick during higher-paid shifts, which previously resulted in covering the shift with an employee who received unexpected, overtime pay. It appears that employees tend to utilize sick leave during the day, regular pay, when there is typically an “extra” operator (technician) available to cover the shift. The most important improvement was the long-term retention of highly skilled employees to operate the treatment plant.

Ensure Pay Is Competitive

As younger workers and recent college graduates enter the workforce, many gravitate toward jobs with high salaries and comprehensive benefits. CUWCD knew it needed to be more competitive with a higher salary for entry-level positions to attract younger workers and recent graduates. CUWCD’s entry-level salaries increased and are competitive on the national water utility scale; within the first five years, Water Systems Technicians are aggressively compensated for completing certification programs and gaining on the job experience. This accelerated increase in salary is meant to be commensurate with what a candidate may experience in a private sector position. Candidates are motivated to apply to CUWCD because of the competitive salaries for entry-level positions and stay long term because of internal training and advancement opportunities that allow for financial growth and stability.

Train Differently

In conjunction with an overhaul of hiring practices, CUWCD created a training program to ensure each employee is supported and encouraged to develop professionally throughout their time at CUWCD. The Lead Operator Training Program is a multi-year, comprehensive training that provides employees with the skills, knowledge, and practice necessary to become a successful Plant Manager. Although the program is voluntary, participants become eligible for promotions, reductions in rotating shiftwork, and salary increases. These additional benefits contributed to an increase in job satisfaction and confidence.

Employees are eligible to participate in the program after completing three years as an Operator (technician). Employees in the program participate in weekly, peer-to-peer trainings and are tested across 120 skills. The training program takes approximately two years to complete and CUWCD encourages employees to take their time to master the necessary skills. Operators who successfully complete the program receive a one-time \$2,500 bonus and are eligible for a promotion to Lead Operator with a supervisor's recommendation and company approval. This section focuses on the two components of the Lead Operator Training Program: the peer-to-peer learning to support skills development and the demonstration of competency across 120 skills through testing.



CUWCD team members must be able to step out of their comfort zone and complete trainings such as confined space trainings.

Peer-to-Peer Training

Peer-to-peer training is an important component of the Lead Operator Training Program. In peer-to-peer training, Operators identify a skill topic of choice, learn about that skill through self-study, and educate their peers with a one-hour presentation and training session. These weekly training sessions enable employees to become resident experts across a variety of topics and foster confidence and teamwork within the utility.

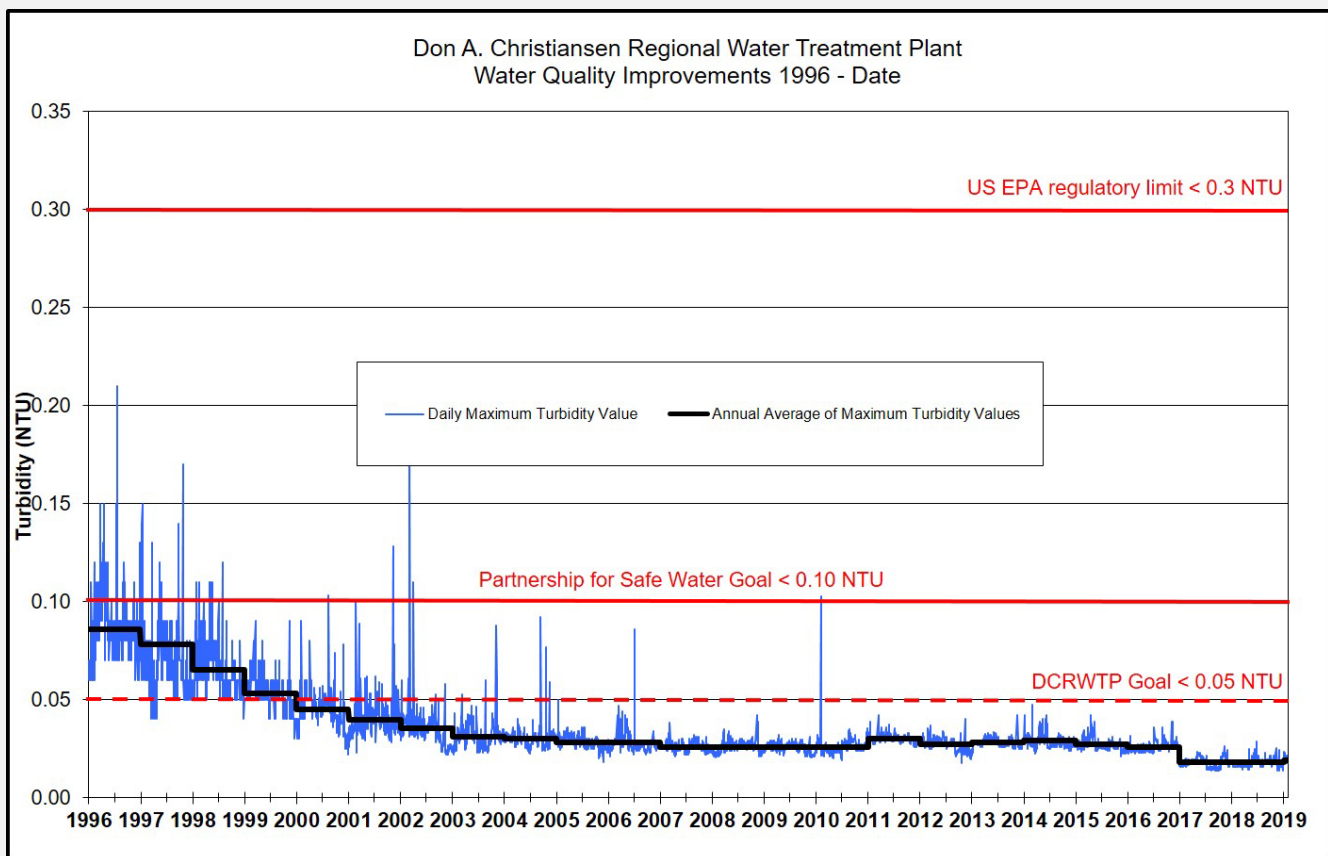
Operators choose a topic from the 120 required skills and lead sessions on those topics, ranging from standard operating procedures to water chemistry. Each operator is typically given three months to research their topic and to create a presentation with information gathered from the utility's subject matter experts. CUWCD prioritizes these trainings by creating dedicated weekly sessions that bring the Operators together. Training sessions are either presented through a PowerPoint presentation or video clips recorded on company smartphones. Both presentation formats allow remote site employees to participate in the training sessions. Most sessions are taught by Operators enrolled in the training program, but other departments such as human resources, are encouraged to participate and teach on topics such as time management and performance coaching.

These cost-effective peer-to-peer training sessions ensure procedures and protocols are consistent among employees, resulting in a safer work environment and safer water for the public. CUWCD's peer-to-peer training challenges employees to continuously learn and gain new skills from colleagues resulting in greater confidence and workplace morale.

Demonstration of Competencies Through Testing

At the completion of each training session, the trainer is charged with measuring the Operator's knowledge, skills, and ability (KSA) through a demonstration of skills, verbal communication, or through a written test at the end of the training. If the Operator is successful, the trainer or supervisor, signs-off on a document of completion/ demonstration of competency. This document is then reviewed by the Operator and the plant manager during scheduled performance planning meetings. While some skills can be learned and signed off in a single training session, most require independent effort and additional studying to reach the required level of competence.

The peer-to-peer training program has resulted in several positive outcomes for CUWCD. As the Operators prepare, share knowledge, and assist co-workers, unity and friendship develops among the cohort of Operators that lasts well beyond the training. Additionally, Operators in the program become more confident in their ability to make critical operational decisions when it matters most, and those that successfully complete the program move on to become



The graph shows the decrease in Annual Average of Maximum Turbidity Values and turbidity spikes due to advanced training.

Lead Operators and often continue their development to become plant managers, facility supervisors, or managers within the organization. Finally, the investment in these trainings has directly led to an improvement in water quality. The turbidity graph below shows the relationship between implementation of advanced training and enhanced finished water quality over time. The treatment plants consistently meet all the established water quality goals and finished water quality has improved dramatically.

Lead Operator Training Program Evolution

Over the last 20 years, the Lead Operator Training Program has evolved to keep pace with the changing technology and industry. CUWCD has kept pace with these external changes by evolving its program. The program has added new plant processes such as ozone, mechanical dewatering, and reclamation processes, which led to the creation of new training skill sets. The original training program had 12 categories and 72 skill sets; today there are 18 categories with 120 skill sets. Additionally, as employees maneuvered their way through the Lead Operator Training Program, CUWCD saw the need to continuously support employee growth and development and created a new position, Operations Supervisor. This supervisory role allows employees to continue to grow in their career.



A group of Operators engage in peer-to-peer training and learn about pH probe calibration.

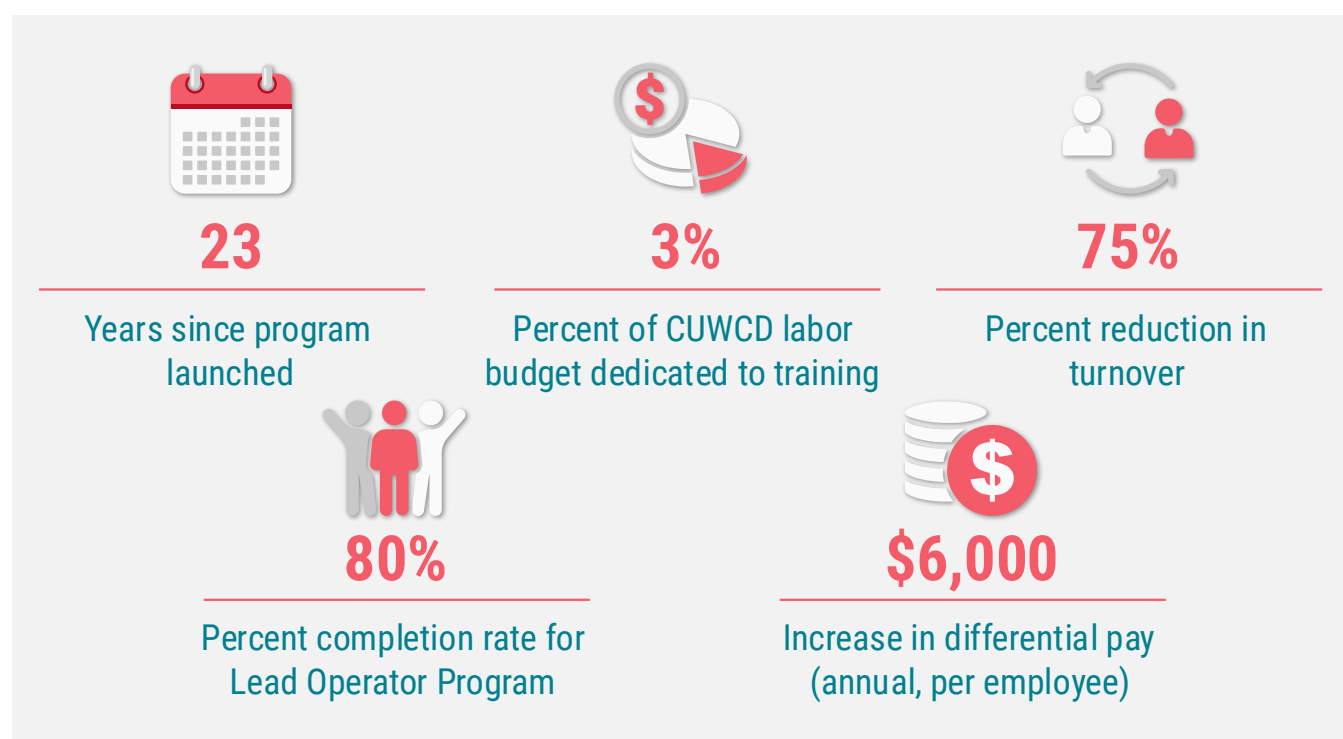
Lessons Learned

Over the last 20 years, CUWCD has created a comprehensive training program that ensures their workforce has the necessary skills and knowledge to adapt and advance in the water sector. In developing and implementing this program, CUWCD has learned the following lessons along the way:

- **Adapt Training for Employee Needs:** Change training formats to meet different learning styles. CUWCD originally completed trainings through paper documents and PowerPoint presentations but has since adapted to generational learning and moved towards “YouTube-like” video training. These videos have not only benefitted the younger workforce, but also allow for the engagement of employees at remote sites.
- **Be Patient:** Emphasize the importance of slowing down and fully mastering the program skill bases. Employees that proceed to the next step without comprehensive preparation, create risk for utilities. CUWCD recognized this shortfall and adjusted the completion time for the Lead Operator Training Program.

- **Dedicate Time for Employee Development:** Commit to weekly training sessions to allow for knowledge transfer and teambuilding between employees. CUWCD designates one hour on Thursday mornings for training and includes both technical and scheduled support staff, such as engineering and human resources.
- **Make it Voluntary:** Provide the pathway for employees who want to develop but recognize that not everyone wants to be a Plant Manager. All Operators participate in the peer-to-peer training program, but completion of CUWCD's Lead Operator Training Program is voluntary. This does not force employees to complete the program but creates incentives for employees to do so.
- **Incentivize Participation:** Provide avenues for employees without a four-year college degree to meet educational requirements for supervisory positions. The position of plant manager has a four-year college degree education requirement that can be satisfied either with a four-year degree or successful completion of the Lead Operator Training Program.

Central Utah Water Conservancy District's Program by the Numbers



Conclusion

CUWCD has curated and sustained a training program and hiring process that ensures the utility is prepared to continuously provide safe and secure water for its residents. The “Hire Differently” and “Train Differently” initiatives are aimed to create a sustainable and supportive workforce environment that provides opportunities for employee growth and development. These initiatives have increased employee morale, reduced staff turnover, encouraged knowledge transfer, provided generational training, and created successful a learning community among CUWCD employees. Over the last 20 years, Central Utah Water Conservancy District has committed to hiring and training the right people because they see every employee as a future Plant Manager.

“When you are hiring for a Plant Operator, you are always hiring for a future Plant Manager.”

Gerard Yates, Water Quality & Treatment
Department Manager



Type of Utility	Drinking Water		444,000	Population Served
Governance	Independent Public Utility		395	Employees
Receiving Waters	Kansas and Missouri River and Collector Wells		272 Square Miles	Service Area
Miles of Pipe	2,700+ Miles	Location: Johnson County, KS	200 MGD	Plant Capacity

From Career Pathways to Career Empowerment

Introduction

[WaterOne](#)⁴⁴ is committed to providing Johnson County, Kansas, a safe and reliable water supply with exceptional service and value. Every day, WaterOne relies on its employees to provide those high-quality services. To ensure their employees are supported and engaged, WaterOne developed a workforce program that trains and empowers staff to advance in their careers and not just their current job.

For WaterOne, developing a robust workforce program has been a journey that started in 2015. At that time, a lack of vacant upper-level positions and non-competitive salaries led many WaterOne Field employees to look for career development opportunities elsewhere. Facing turnover rates as high as 25 percent annually, WaterOne began to restructure its workforce program to develop a voluntary career pathway for Distribution Technicians. The Distribution Technician Program establishes a set of milestones that result in career advancement, provides the support needed to achieve those milestones, and empowers employees to control their own career trajectory. This

case study will examine the development of the Distribution Technician Program career pathway and the development of a workforce program that has made WaterOne an employer of choice in the region.

Distribution Technician Program

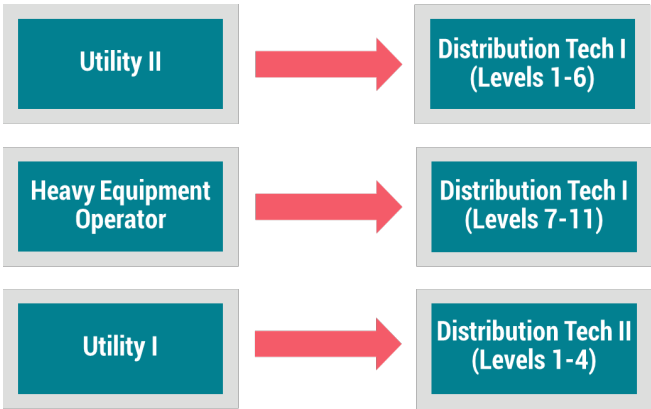
In 2015, WaterOne’s high turnover rates resulted in a rapid loss of institutional knowledge, a constant stream of new hires, and many frustrated front-line supervisors who were continuously pulled away from their regular work to train new employees. The Field workforce was suffering from low morale and reduced productivity. Leadership saw there was an overwhelming need to retain employees, support training, and facilitate knowledge transfer throughout the utility.

In October 2016, WaterOne established the Distribution Technician Program to train and provide advancement opportunities for its workforce. The voluntary program offered participants a comprehensive set of trainings that would provide them with the competencies needed to be successful as a distribution technician. The program also set the stage for participants to advance in their careers at WaterOne through promotions and higher compensation.

Internal Restructuring for Upward Mobility

The Distribution Technician program is curated for employees within the Construction, Maintenance, Valving, and Services (CMVS) branch housed in the larger Distribution Division Structure. WaterOne’s first step for creating a new pathway was to restructure the existing job titles within the CMVS branch to reflect the progression of skills and responsibilities. The entry-level position, Utility II, changed to Distribution Tech I (Levels 1-6), the mid-level position, Heavy Equipment Operator, changed to Distribution Tech I (Levels 7-11), and the higher-level position, Utility I, changed to Distribution Tech II (Levels 1-4). Employees in the CMVS branch with these titles were invited to voluntarily participate in the program.

Job Title Transitions Within the CMVS Branch



Skill-Based Competencies

In conjunction with the position restructuring, WaterOne created a list of six competencies that reflected the skills needed for a Distribution Technician to succeed at the utility. At the beginning of their Distribution Technician program, employees are evaluated by their Foreman to assess their current abilities and competencies. Human Resources partners with CMVS to review the evaluations, discuss whether the employee is at the appropriate level, and develop next steps with the employee. Employees receive a booklet that further details the Distribution Technician program and the specific competencies within each of the six major categories. WaterOne is currently developing a digitized version of the booklet and tracking within the Learning Management System (LMS).

Each Distribution Technician level has a set of competencies that must be completed before advancing to the next level. Within the new structure, the Distribution Technician I is composed of 11 levels and the Distribution

Technician II is composed of 4 levels. Once an employee has successfully demonstrated proficiency in a level's respective competencies, they are eligible for a pay increase. This skill-based pay structure incentivizes employees to continuously learn and advance through the competencies. On average, it takes six months for a Distribution Technician to successfully complete one level. However, this self-paced structure allows employees to dictate their study schedules and complete each level at a slower pace.

Training

When the Distribution Technician program started, participants met with a University of Kansas professor to learn study habits to prepare for their national license and certification exams. As part of the curriculum, participants utilize the online [Water Distribution Operator Training Courses](#)⁴⁵, which are offered at California State University in Sacramento. These self-paced courses correspond with study materials and cover a range of topics. Within the Water Distribution System course, students learn safety, distribution facilities, disinfection, operation and maintenance, and management. Employees take the courses at their own pace and WaterOne covers the cost of study materials, training, and the exams. WaterOne's Safety team provides training and guidance on safety requirements. Distribution Technician IIs attend a three-day supervisory workshop presented by the University of Kansas.

Testing

Testing is an important aspect of the WaterOne Distribution Technician program. Employees not only commit to learning the six competency categories but demonstrate their knowledge in the form of in-utility exams, on the job demonstrations, and national certification exams. In the Licenses & Certifications category, Distribution Technicians are required to take the Water Distribution Operator course and certification exams that are regularly scheduled through the Kansas Water Environment Association. In addition, Commercial Driver's License training and certification on heavy equipment are also included in the program.

In the other competency categories, Distribution Technicians must demonstrate proficiency through utility-specific equipment operation, safety, and WaterOne specific curriculum. To assess their skills in specific competencies, employees complete written and practical exams that are scheduled twice a year. In the practical components, employees must physically demonstrate capabilities to their Foreman. After all competencies within the level have been successfully completed, the Foreman and Assistant Manager convene and identify the employees that will progress to the next level.

Salary Progression

Distribution Technicians are eligible to receive a pay increase when they progress to the next level. This increase typically ranges between 4–7 percent and is dependent on factors such as where the employee started in the



program, how fast they progressed, and their performance. Employees who quickly progress through the program may have two opportunities within the year to move to the next competency and pay level.

Initially, WaterOne's salary progression did not cause an increase in their overall budget. The decrease in turnover and vacancies increased productivity, quality, and engagement.

Empowered Engagement

Over the last four years, the Distribution Technician program has created a pathway for career advancement and reduced the bottleneck that many employees faced before reaching upper-level positions. The program has seen a high level of engagement from staff and when first launched; 75 of the eligible 95 employees enrolled in the program. However, the transition was not without challenges. Some existing employees felt the program created an undue burden and that adequate time and experience would lead to career progression. However, newer employees reported that the clear process enabled and empowered them to succeed at their own pace.

Overall, WaterOne leadership is pleased with how quickly employees have embraced and progressed through the program. Currently, 58 employees are enrolled, and 16 have successfully completed the Distribution Technician program.

"The Distribution Technician program has been a great success. It has improved employee retention and has helped us with recruiting. Distribution Technicians know precisely what they need to do to progress, and they are able to determine their own rate of advancement. A side benefit of the program is that it has caused us to do a better job of providing training to our employees on a regularly scheduled basis."

Greg Johnson, Manager CMVS



WaterOne employees work and learn together to solve water sector problems.

Succession Planning

The Distribution Technician program creates skills overlap that allows for additional coverage across positions leading to many participants emerging as future leaders. Within the major competencies, Distribution Technician II employees receive training in necessary Foreman skills, such as timekeeping and completing work orders. WaterOne is currently expanding training efforts to ensure they have adequate coverage during emergency callouts, especially for Foreman positions. These trainings facilitate knowledge transfer and allow Distribution Technician II employees

to gain hands-on experience and become leaders within the utility. Leaders gain more responsibilities and are promoted to higher positions, thus securing the future workforce and internal knowledge.

Higher Caliber Applicants

A positive outcome of the Distribution Technician Program was the influx of higher caliber applicants. Previously, WaterOne often received applications from individuals with only distantly related experiences, which meant leadership was often engaging in the time intensive process of actively recruiting qualified candidates for positions. Since the start of the Distribution Technician Program in 2016, WaterOne has seen an increase in qualified applicants. This increase is due to two motivating factors: the opportunity to develop a career path and an increase in compensation. Applicants are motivated to apply and work for a utility that invests in their employees through development of a career path, allowing them to control their trajectory.

The Human Resources (HR) team connected with the Engineering Career Centers at the University of Kansas and Kansas State University through the biannual career fairs. The WaterOne HR team attends the career fairs with a WaterOne engineer, preferably one that graduated from the university. The engineer acts as an ambassador and subject matter expert while talking with students about WaterOne opportunities. These career fairs have increased HR's awareness and knowledge about the engineering profession, as well as provided an opportunity to network with students/potential candidates.

In addition to career fair recruitment opportunities, WaterOne has a robust summer intern program. Interns are placed within most of the Divisions, including Engineering. During the program, interns receive tours and engage in organizational awareness activities that provide interns the opportunity to learn about other positions and functions at WaterOne. Students often return for multiple years and are valuable mentors for incoming interns.

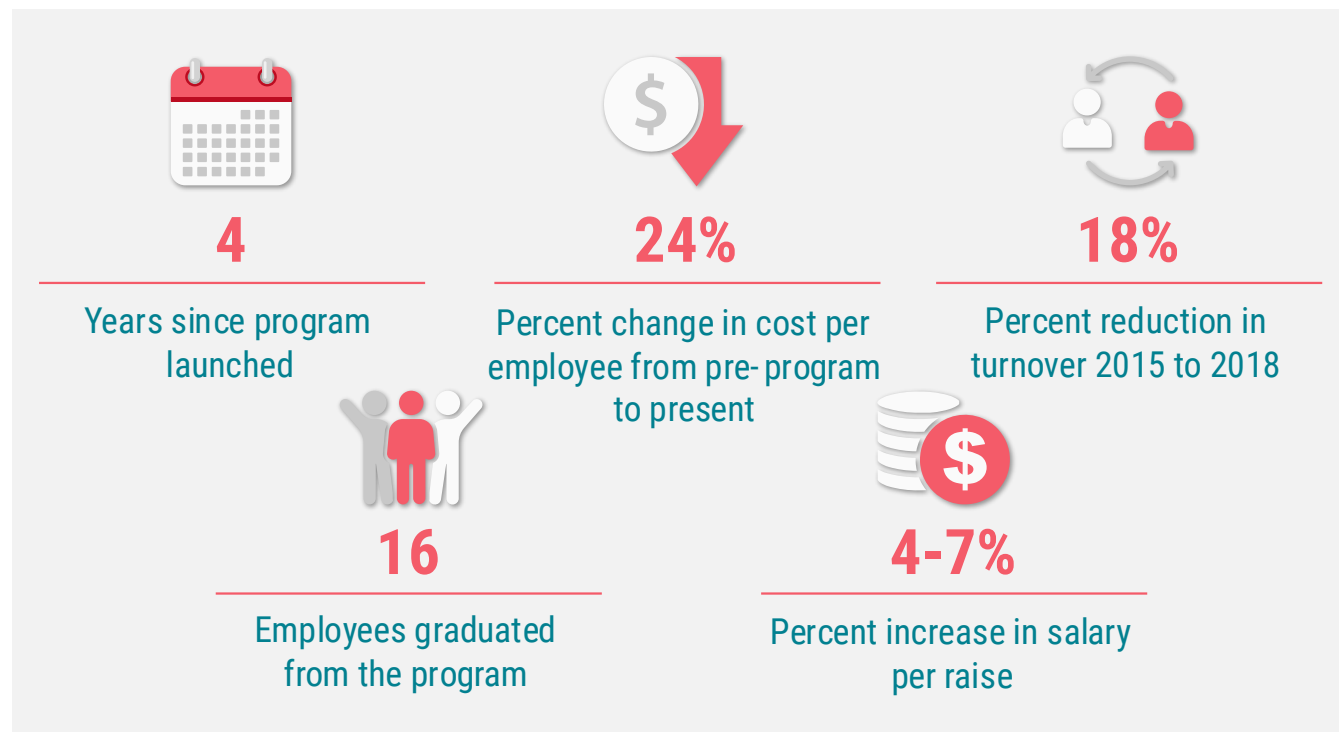
Lessons Learned

WaterOne created an empowering career path that allows employees to manage their career trajectory and enhance workforce morale. This restructuring process was not without challenges and learning experiences. These lessons learned will help assist utilities to create their own internal career paths:

- **Encourage Open Communication:** Provide neutral spaces that allow employees to engage and provide feedback for management. Support all-inclusive staff meetings that allow everyone to engage.
- **Provide Resources:** Help employees succeed with on-site training and resources. WaterOne partnered with the University of Kansas to provide employees with study skills and resources
- **Clearly Convey Competencies:** Emphasize that employee advancement is based on successfully demonstrating competencies. Highlight that successful demonstration of competencies equates to an increase in skills, pay, and promotions.

- **Create Internal Buy-In:** Create a workgroup to formally involve staff that will be impacted at the beginning of program development to help articulate current challenges and create buy-in for proposed solutions. Ensure there is consensus with Human Resources, managers, and other internal business partners to support the process.

WaterOne's Program by the Numbers



Conclusion

WaterOne's Distribution Technician Program empowers employees to control their own career trajectory. This self-paced program allows staff in the Distribution Division to gain skills and advance their careers. Prior to this program, WaterOne was experiencing turnover rates of 25 percent, as employees were leaving in search of other opportunities. Since the implementation of the Distribution Technician Program, WaterOne's turnover rate has reduced to 7 percent. WaterOne hopes to expand its workforce program to create a career pathway for advancement to the Foreman position and to develop on-site training sessions. By supporting employees, WaterOne has increased morale and attracted a higher caliber of job applicants. The Distribution Technician Program has improved retention at the utility and enabled employees to set their career paths to control their own trajectory, making WaterOne an employer of choice in the region.

"The Distribution Technician program gives new staff a way to control their own destiny. As part of this program, a technician can see that they set their own career path through what they learn and achieve."

Michael Armstrong, General Manager at WaterOne



Building Bridges to Meaningful Employment for Vulnerable Communities

Introduction

Both Alexandria Renew Enterprises (AlexRenew) and the City of Atlanta Department of Watershed Management (DWM) are leaders in their communities. They not only provide safe and reliable water to their communities, but they also employ residents in meaningful, wage-competitive careers. In recent years, both utilities have looked to reach further into their community to build relationships with organizations that prepare vulnerable populations for career success. These relationships have resulted in the development of programs that provide clear pathways to train and hire new employees from diverse backgrounds. These programs range from high school internships for economically disadvantaged youth to adult programs that enable victims of sex trafficking and individuals who are currently incarcerated—on non-violent/non-sex offending charges—to transition to meaningful and family-sustaining careers. These partnerships have required communication and active engagement from both utility and community partners to create supportive learning and work environments for their participants. This case study will examine how partnerships help build the utility workforce of the future and bolster the community by providing participants

with the education, life skills, and career readiness needed to secure full-time employment and financial independence in their communities.

Type of Utility	Wastewater	 Alexandria Renew Enterprises Location: Alexandria, VA	320,000	Population Served
Governance	Special District		110	Employees
Receiving Waters	Potomac River via Hunting Creek		52.8 Square Miles	Service Area
Miles of Pipe	20 Miles		54 MGD	Plant Capacity

Alexandria Renew Enterprises

Overview

[Alexandria Renew Enterprises](#)⁴⁶ (AlexRenew) is one of the most advanced water resource recovery facilities in the country, and the innovation doesn’t stop when it comes to growing and developing the workforce that ensures the safety and wellness of their Northern Virginia community. Over the years, AlexRenew developed a robust portfolio of workforce programs to recruit, retain, train, and empower their workforce. More recently, AlexRenew established and grew community partnerships to cultivate the workforce of the future. This case study focuses on the partnerships AlexRenew established with the [Urban Alliance Internship Program](#)⁴⁷ and the [Arlington Career Center](#)⁴⁸. These partnerships were developed to increase youth awareness of the attractiveness of water sector careers and to provide hands-on job training, internship opportunities, and mentorship to under-resourced young people in the community.

“Community partnerships are a cornerstone of our working programs. These partnerships not only allow us to train and recruit outstanding young people for careers in water, but they also help us continue to educate our community on the importance of clean water and our critical role as a public service anchor in them.”

Karen Pallansch, AlexRenew Chief Executive Officer

Urban Alliance High School Internship Program

[Urban Alliance](#)⁴⁹ is a national youth development nonprofit that provides economically disadvantaged young people with access to the exposure, opportunity, support, and training needed to prepare them for lifelong economic self-sufficiency. A core component of their work is the High School Internship Program, which provides students an intensive, year-long experience through paid internships, job training, and mentoring. Every year, more than 80 seniors in Northern Virginia sign-up for the year-long internship program, which offers the opportunity to work with [24 local businesses and organizations](#)⁵⁰. Urban Alliance hosts three “mixer” style activities, providing a space where

students can meet and ask questions of the organizations/mentors. After the mixers, students list the businesses and mentors they are interested in interning with and mentors create a list of students as well. Participants in the Urban Alliance Internship Program have reported increases in confidence working in professional environments and higher high school graduation and college acceptance rates.

Starting in 2013, AlexRenew began a partnership with the Urban Alliance High School Internship Program to mentor seniors from T.C. Williams High School, the only public high school in Alexandria City. T.C. Williams serves approximately 4,000 students, 70 percent of whom come from diverse backgrounds. This unique year-long paid program introduces motivated T.C. Williams students to a variety of water jobs and exposures the students to a professional workplace. Critically, the partnership provides each student with two engaged adults: an Urban Alliance Coordinator who provides professional or “soft” skills training and a one-on-one AlexRenew mentor to support the student through direct work experience and education. The AlexRenew mentor supports the students as they rotate through the different departments and ensures that department projects given to students are viable and challenging. This complimentary coordination between the two organizations provides each student with the wraparound support that is essential to success.

During the school year, interns work part-time at AlexRenew and rotate departments regularly to ensure they are exposed to the full suite of possible careers in resource recovery, including engineers, scientists, and professionals in finance, communications, and IT departments. During the departmental rotation, interns assist with ongoing projects and report to their project supervisor and coordinator. Students are mentored through the process of learning about technical complexities, career opportunities, and sustainable practices within the water utility sector. Urban Alliance and AlexRenew host workshops on professional development, professional writing, and assistance on college and career planning. To date, AlexRenew has hosted 10 Urban Alliance interns.

Arlington Career Center Internships

The [Arlington Career Center](#)⁵¹ (ACC) offers students project-based learning for their high school education, which allows students to succeed in higher education and the workplace. ACC offers 24 unique Career and Technical Education programs and provides students with opportunities to earn college credits through a dual enrollment program. ACC students reflect the diversity of the Arlington/Northern Virginia community. Many students come from diverse backgrounds and are often English as a Second Language students. ACC supports the diverse student body by providing over two dozen career and technical education programs, counselor support, and allowing students the ability to curate their Capstone Experience.



Kayla Yingst, AlexRenew's Communications Programming Specialist, with two interns, Isaac (left) and Hiwot (right) at an Urban Alliance event.

ACC students start to curate their own [Capstone Experience](#)⁵² in 9th grade by building a foundation, then exploring Capstone opportunities in 10th grade, preparing their Capstone in 11th grade, and conducting their Capstone Experience during their senior year. This experience is unique to each individual and their internship aligns with their interests and academic/career goals. Students gain experience writing a resume and cover letter, developing a research question, and presenting their final thesis at the end of their experience.

In 2018, AlexRenew began conversations with the ACC to develop an internship program for ACC students to complete their required Capstone Experience project. This partnership allows students to obtain hands-on experience in STEM-related fields and increase their awareness of the availability and attractiveness of water sector jobs. Students who are interested in working with AlexRenew for their Capstone Experience are given tours of the municipal water facility and meet with AlexRenew staff to ask questions and determine if AlexRenew is the right fit for their Capstone project.

Though the relationship between the two organizations is relatively new, AlexRenew already hosted two students from the ACC. The first student, upon completion of the internship, was hired as a part-time data analyst at AlexRenew. The second student, Aidan, completed their internship and is working full-time as a General Laborer at AlexRenew. Visit the text box below to learn more about Aidan's experience. This partnership has given ACC students real-world experiences and a direct pipeline for employment with AlexRenew. The utility sees the importance of interacting and curating workforce experiences with Northern Virginia's youth to recruit these bright students to AlexRenew.



Aidan, 2020 Senior at
Arlington Career Center

Intern Spotlight

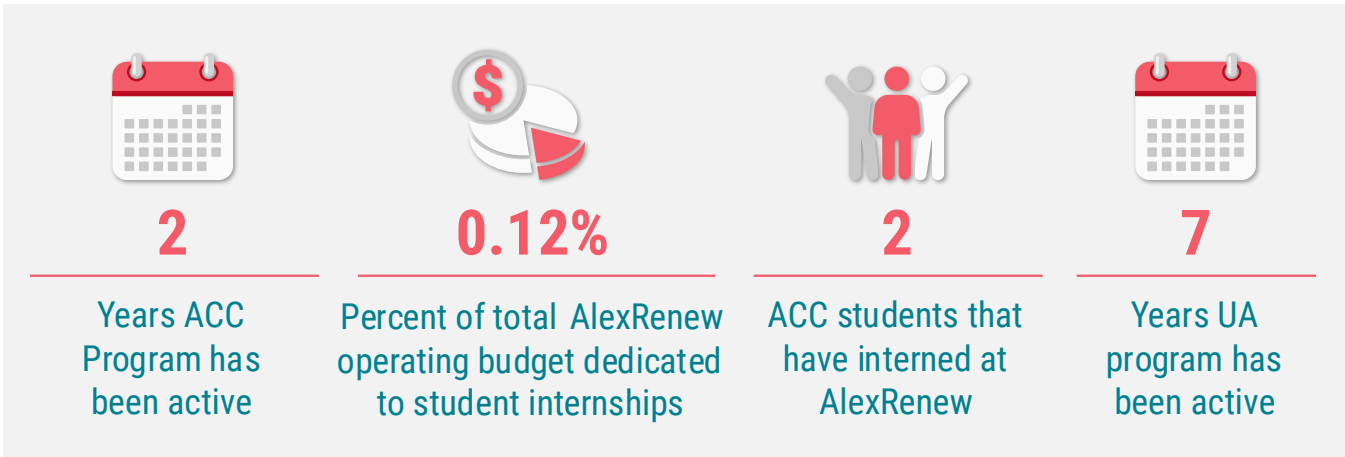
Interests: Maintenance, Operations, and working on cars.

What the internship has meant to Aidan:

"I am learning loads of information every day while working at AlexRenew. Whether it be simple small tricks about every little tool, or how the entire system of a water treatment plant works. I never go a day without learning something new. What I love about the Capstone Experience is the reality of actually working in the field. In my high school, I am given the opportunity and knowledge of working over 200 hours at a real job. The fact that I leave high school with the knowledge puts me much higher than the average student. Giving high school students this opportunity to give the workforce a try is, in my opinion, one of the greatest things we can do."

This past summer, Aidan started as a full-time General Laborer at AlexRenew

AlexRenew's Program by the Numbers



Type of Utility	Combined		1.2 Million	Population Served
Governance	Municipal Department	City of Atlanta Department of Watershed Management	1,415	Employees
Receiving Waters	Chattahoochee River	Location: Atlanta, GA	650 Square Miles	Service Area
Miles of Pipe	2,790 W; 2,150 WW; 603 Miles Watershed Protection		100 MGD W; 188 MGD WW	Plant Capacity

City of Atlanta Department of Watershed Management

Overview

The [City of Atlanta's Department of Watershed Management](#)⁵³ (DWM) provides safe drinking water and clean water services to over 1.2 million residents. In 2017, DWM experienced stagnant recruitment and challenges with knowledge transfer from experienced staff members to newer staff members. To address this, DWM developed a strategic workforce plan to ensure a sufficient and prepared workforce. This planning effort included a review and revision of job position requirements and qualifications to solicit broader applicants, the development of career pathways to demonstrate the growth available to DWM staff, and an increased focus on employee development and support.

External partnerships are a key aspect of DWM's strategic workforce plan and they have developed strong relationships with local educational institutions, such as Atlanta Technical College and Georgia Tech, to provide curriculum for water professionals, increase student awareness of the water sector employment opportunities, and provide water operator certification programs. As these programs grew, so did DWM's ability to recruit post-secondary candidates and existing water professionals, but DWM and the City of Atlanta wanted to reach deeper and build capacity among Atlanta's more vulnerable residents.

In 2018, Mayor Keisha Lance Bottoms created the Office of Equity, Diversity, and Inclusion (known as One Atlanta) and developed legislation that provided support to Atlanta's often forgotten communities. This case study focuses on the new partnerships that the City of Atlanta and the DWM cultivated with the [Wellspring Living Women's Academy Program](#)⁵⁴ and the Atlanta Department of Corrections.

Wellspring Living Women's Academy Program

Wellspring Living's mission is to transform the lives of women who are at-risk or victims of sexual exploitation by providing specialized recovery services. The Women's Academy at Wellspring Living offers General Educational Development (GED) completion support, career readiness training, and apprenticeship opportunities to help ensure participants obtain living-wage jobs upon completion of the program. Full-time employment is often a critical step towards independence. In 2019, DWM developed a partnership with Wellspring Living to launch an apprenticeship opportunity to provide workforce soft-skills and full-time employment with DWM.

"I am so grateful for this opportunity and just blessed that the City of Atlanta is willing to partner with programs like Wellspring. With this type of partnership, not only does it help give women like me a chance at a different way of life, it gives us hope."

J., Wellspring Apprentice and now a current Atlanta DWM Employee

Participants receive 12 weeks of paid apprentice training in job readiness skills and are then employed by the DWM for 12 weeks. Wellspring Living staff conduct trainings with DWM staff to ensure that the work environment is supportive for both staff and participants. After this period, participants may be hired full time to support the DWM in their customer service or billing operations. Since the inception of the initiative, the DWM has trained three individuals and has hired two full time. Looking forward, the DWM hopes to continue and expand its partnership with Wellspring Living and increase the number of apprenticeship participants to support their transition into full-time employment.

Preparing Adult Offenders to Transition through Training and Therapy (PAT³)

In 2018, the DWM partnered with the City of Atlanta Department of Corrections (ADOC), the Georgia Department of Corrections (GDC), and the Urban League of Greater Atlanta (ULGA) to develop the Preparing Adult Offenders to Transition through Training and Therapy (PAT³). PAT³ is a pre-release reentry program for male offenders who are held in medium- or minimum-security facilities with 12 to 18 months remaining in their sentences for non-violent/non-sex offending charges. This program aims to reduce the recidivism rate and reintegrate individuals into the community by providing substance abuse training, education, life skills, family planning resources, on-the-job training, anger and stress management, and certification and employment assistance. Check out this [video](#)⁵⁵ that highlights several PAT³ participants.



PAT³ graduates maintain DWM's operations during the COVID-19 pandemic and provide clean water to their community.

PAT³ is a three-tiered process consisting of state-mandated vocational training, workforce development, and employment. The whole process can take 12–18 months and has the end goal of full-time employment with the DWM.

- **State Mandated Vocational Training:** The first tier is the New Beginnings Transitional Training, Career and Employment program, a 12-week curriculum, administered by the ULGA. The curriculum is designed for the individual's workforce development needs and addresses the barriers to becoming employed. Participants work to establish employment/career and personal goals with qualified training facilitators, a case manager, and a job/career coach.
- **Workforce Development:** The remaining weeks are supported by the DWM and are dedicated to industry-sector competency training and gaining the certification needed for a water service professional. The tier includes five modules that take participants through topics such as career opportunities, water system introductions, major components of a distribution system, safety, and 16 weeks of preparation to become a licensed Water Distribution System Operator for the State of Georgia.
- **Employment:** Graduates of the program become full-time employees at DWM. Participants maintain regular contact with their career and employment coach to ensure employee retention and consistency for 90 days.

PAT³ provides career training and life-skills to reduce recidivism and provides a sustainable career path while supporting workforce initiatives by DWM. Since 2018, DWM has permanently hired 13 of 15 program participants from the PAT³ program.

Resource Allocation for DWM Programs

As relatively new programs, DWM did not have to dedicate any additional resources for either program. The department had over 300 vacant positions and the available budget to hire new employees. They felt these were great programs and were dedicated to their success.

City of Atlanta Department of Watershed Management's Program by the Numbers



Lessons Learned

AlexRenew and the City of Atlanta's DWM robust programming unite their communities through the engagement with underrepresented persons and populations. While developing these programs, both utilities experienced challenges and breakthroughs and provided the following insights and lessons learned for other utilities interested in undertaking similar efforts.

- **Align Goals:** Find community partners that have focused objectives that are aligned with your needs to ensure both entities benefit from the partnership.
- **Build on Strong Foundations:** Look for organizations with an already established program that has available resources to support participants and other aspects of participant support that are not managed by the utility.
- **Celebrate the Wins:** Celebrate the program's wins and successes. By keeping metrics, utilities can showcase the successes through their community partnerships for outreach and development of new community partners.
- **Communicate:** Identify and prioritize the needs and expectations of the utility and the community partner through an active discussion and development of a plan to address those needs and expectations.
- **Prepare Employees for Success:** Provide staff with the information and training necessary to support participants. In these instances, AlexRenew provided training and education for working with high school age students and Atlanta DWM worked with staff to ensure sensitivity and appropriate engagement with at-risk individuals.
- **Find Champion(s):** Identify and engage dedicated and experienced staff to support the effort. Having internal buy-in and support beyond leadership is a critical step in program success.

Conclusion

Through these new initiatives, both AlexRenew and the City of Atlanta's DWM have developed meaningful partnerships to build a future workforce from among underserved populations in our communities. These partnerships have created numerous touchpoints and opportunities to create a diverse and passionate workforce. Participants have benefited from the support given by utility staff champions and the communication between utilities and community partners to secure full-time employment and financial independence.

"We must continue to focus on recruiting, training and maintaining our most valued resource: our workforce. It is the employees who make our vision and mission a reality."

**Andrada Butler-Cunning, Former Chief of Staff,
City of Atlanta DWM**



Type of Utility	Combined ⁵⁶	 San Francisco Public Utilities Commission Location: San Francisco, CA	2.7 Million	Population Served
Governance	Municipal Department		2,300	Employees
Receiving Waters	Hetch Hetchy Reservoir, Alameda and Peninsula Watersheds		2,500 Square Miles	Service Area
Miles of Pipe	1,000+ Miles		192 MGD W; 80-575 MGD WW ⁵⁷	Plant Capacity

Connecting with Students from Kindergarten-to-Career

Introduction

The [San Francisco Public Utilities Commission](#)⁵⁸ (SFPUC) is a national leader in developing and growing a utility workforce program with initiatives focused on recruitment, retention, competency, and community partnerships. The foundation of these efforts is their Kindergarten-to-Career strategy, which is focused on engaging with kindergarten through high school students to raise early awareness of the Bay Area’s watersheds, develop the next generation of environmental stewards, and provide opportunities for San Francisco’s youth to learn about STEM careers within the utility sector.

SFPUC developed youth engagement touchpoints at each stage of a student’s educational experience, from Kindergarten-to-Career. These engagements build upon one another to match a student’s academic progression, beginning with initial elementary classroom presentations and field trips and culminating in job shadowing and paid internships for high school and college students considering their future careers.

Since 2012, these efforts have engaged more than 77,000 youth in San Francisco. While these programs may not directly result in immediate recruitment, SFPUC's long-term Kindergarten-to-Career approach provides many lasting tangible and intangible benefits that build strong communities and a strengthened workforce pipeline. This case study will provide an overview of SFPUC's youth community programs with a spotlight on the John O'Connell High School program.

SFPUC's Community Benefits Program

Youth engagement and education are key components of SFPUC's [Community Benefits Policy](#)⁵⁹. This policy outlines the agency's commitment and approach to ensuring that communities are positively impacted by SFPUC services. The Community Benefits Program focuses on workforce development, small business opportunities, neighborhood partnerships, environmental justice and land use, education, and art. SFPUC has shared its good neighbor approach with other communities, government agencies, and utilities around the country.

Supporting Elementary School Students

SFPUC introduces elementary school students to water services, environmental stewardship principles, and watershed concepts through curricula content, classroom presentations, and visits to demonstration gardens. Below is an overview of the various programs and materials that SFPUC produced in partnership with local educational organizations to build and deepen ecological awareness.

- [The Story of Poo](#)⁶⁰: Produced in partnership with the California Academy of Sciences, this [short animated video](#)⁶¹ teaches young audiences about San Francisco's sewer system, from flushing the toilet all the way to the treatment plant.
- [Our Water Curriculum](#)⁶²: SFPUC has developed water curricula aimed at students in 4th through 6th grades and includes teacher guides, fact sheets, activity sheets, and lesson plans that discuss the history of water in San Francisco, recycled water, and plastic pollution. SFPUC has also designed a [Watershed Stewardship Curriculum](#)⁶³ that teaches watershed and pollution awareness, green stormwater management, and water conservation. Additionally, SFPUC provides free classroom presentations on the Our Water curriculum.
- [College Hill Learning Garden](#)⁶⁴: The College Hill Learning Garden is an education and demonstration garden that teaches over 2,000 local students each year how they can support ecologically friendly water, food, energy, and waste systems. Students of all ages participate in hands-on stewardship focused activities, often building upon other SFPUC experiences and concepts, to adopt sustainable practices and understand career opportunities in related green industries. Students can also visit the [Garden for the Environment](#)⁶⁵ to learn about small-scale urban food production and organic gardening space.
- [Big Ideas Educational Framework](#)⁶⁶: In partnership with the Center for Ecoliteracy, SFPUC created the *Big Ideas* educational framework to serve as a resource for curriculum developers, teachers, and schools. Through the publication of this framework, the SFPUC seeks to foster the next generation of environmental stewards and provide a water, power, and sewer framework for Grades K-12. Teachers can also engage in a

one-year professional learning opportunity through the [Bayview Science Institute](#)⁶⁷, in partnership with the California Academy of Sciences.



Elementary students visit SFPUC's College Hill Learning Garden to learn and explore the relationship between food, water, and energy.

Supporting Middle School Students

As students advance in their educational journey, SFPUC helps middle school students explore a variety of water resource environments. Students have the opportunity to take field trips to wastewater treatment plants and parks, to explore physical environments and ask questions, and to explore real career opportunities. Middle school students build upon knowledge gained in elementary school by emphasizing the relationships and connectivity of water to the San Francisco Bay Area.

- **[Wastewater Treatment Plant Tours](#)**⁶⁸: SFPUC provides free tours of the Westside Recycled Water Facility and the Southeast Treatment Plant to provide students with exposure and the knowledge of how SFPUC protects human health and the environment.
- **[Sunol AgPark](#)**⁶⁹: Located in beautiful Sunol Valley, within the Alameda Creek Watershed, the Sunol AgPark is owned by SFPUC and is managed through a partnership agreement with the [Alameda County Resource Conservation District](#)⁷⁰ (ACRCD). Within the AgPark, eight small-scale organic farms grow fresh fruit, vegetables, and flowers for Bay Area communities. The SFPUC and ACRCD partnership provides land and technical assistance to the farmers and hands-on environmental education programs for Bay Area schoolchildren.

Supporting High School Students

SFPUC's high school programs enrich students' lives and provide exposure to environmental stewardship and water, power, and sewer concepts. High school students are presented opportunities to explore employment opportunities at SFPUC through after-school and summer internship programs. These programs provide valuable mentorship to students and open the door to possibilities in the water service sector and STEM fields.

- **[SSIP CityWorks](#)**⁷¹: Entering its ninth summer, SSIP CityWorks is an eight-week paid summer internship program for high school students and college students from San Francisco's southeast neighborhoods. Starting after their junior year in high school, students are provided with internship opportunities every summer either at the SFPUC or with one of the private engineering firms participating in the Sewer System Internship Program. Since 2012, nearly 100 students have participated in the CityWorks internship.

- **Project Learning Partnership Grant Program**⁷²: Through the Project Learning Partnership Grant Program, SFPUC supports existing summer and academic-year youth programs to integrate project-based learning on water, power, and sewer concepts and to learn about utility careers. More than 3,000 youth have engaged in meaningful and enriching projects related to the SFPUC since 2012. In the most recent grant cycle, participating organizations have implemented activities designed by the California Academy of Sciences on Clean Power, Flooding, and Groundwater; brought youth on tours of the SFPUC headquarters and the College Hill Learning Garden; and participated in the annual Futures Fair, a youth summit focused on utility job opportunities and career readiness programming.
- **YouthWorks**⁷³: For about 20 years, YouthWorks—a paid after-school and summer internship program—has provided San Francisco high school students interested in public service with job opportunities at SFPUC and more than 30 other City departments, such as the Department of Health and District Attorney’s Office.
- **Project Pull**⁷⁴: For more than 25 years, Project Pull has provided more than 1,500 San Francisco high school and college students with paid summer internships at SFPUC and other City departments. During their eight-week program, interns at the SFPUC learn about careers in architecture, business, engineering, and science.

Virtual Engagement During COVID-19

Due to the COVID-19 pandemic, SFPUC launched its ninth annual CityWorks Summer Internship Program in late June 2020 as a virtual internship for the first time. This paid internship opportunity allowed 20 students from the Bayview-Hunters Point community to gain important mentorship opportunities and exposure to available career opportunities in the utility sector. SFPUC worked with its private contracting partners, [Young Community Developers](#)⁷⁵ and [Ignited](#)⁷⁶, to ensure interns have a unique and impactful virtual summer internship program.

John O’Connell High School Career Awareness Pilot

The John O’Connell High School in San Francisco’s Mission District neighborhood provides an equity-centered learning community for students to develop academic mastery and interpersonal skills that will help them succeed in both college and in their careers. Since 2017, the SFPUC has partnered with the teachers at John O’Connell High School to develop a unique project-based curriculum with a deep nexus to the water, power, and sewer operations of the SFPUC. Furthermore, students gain exposure to careers in the water, wastewater, and utility field during their studies through the SFPUC partnership. This program has become the cornerstone of the SFPUC’s Kindergarten-to-Career strategy.

The John O’Connell Career Awareness Pilot has four main goals:

1. Foster student awareness of career opportunities in the utility industry through the creation of regular and progressive education and engagement.
2. Provide all students with real-world connections to SFPUC staff and work-based learning experiences related to the agency.
3. Provide teachers with the opportunity, time, and resources to build connections, knowledge, and excitement around work-based learning and career skills.

4. Clearly connect graduating students to internship, trainee, pre-apprentice, apprenticeship, and entry-level job opportunities.

These goals are met through the support of the school's administration, SFPUC staff engagement with teachers and students, tours of SFPUC sites, and SFPUC-integrated lesson plans.

Supporting the School Administration

For the SFPUC, making a meaningful impact on the students at John O'Connell High School requires a comprehensive approach that includes teachers' needs and the administrative context within which they operate. As a school operating in a lower-income community with 60 percent of students on the subsidized lunch program, SFPUC has created a funding structure that allows their grant to also be used in support of meeting administrative needs and providing teacher teams additional time and supplies. The majority of grant funds support teacher planning time for SFPUC-related project-based learning curricula, which ensures that teachers are resourced to integrate learning creatively and effectively on utility concepts and careers into their lesson plans. Funds also support 8th-grade recruitment efforts, which showcase the partnership with the SFPUC, and busses for SFPUC-related tours and trips.



Teachers take a SFPUC facility tour during their week-long externship.

Engaging with Teachers

Teachers are uniquely positioned to make a meaningful impact in the lives of their students, and SFPUC designed a program that places teachers at the center of this effort. SFPUC partners with [Ignited](#)⁷⁷, a Bay Area-based nonprofit that connects teachers with business leaders and scientists to help transform the classroom experience by providing teachers with real-world applications to their curriculums. With Ignited, teachers participate in a week-long paid externship to learn about SFPUC operations, from collection systems to treatment processes. This learning opportunity helps teachers understand things like the biology behind wastewater treatment processes, the history behind San Francisco's water system, and math involved in SFPUC hydrology.

The externship also provides teachers with working time to develop their curriculum and ensures subject matter experts are available during that time to act as a resource in developing lesson plans. In advance of the 2018–2019 academic year, a third of John O'Connell teachers attended the SFPUC Teacher Externship and developed SFPUC-aligned curricula on water, power, and sewer concepts for their students. Teachers leave the externship with a breadth of water, power, and sewer knowledge; connections to SFPUC staff; and a clearer sense of how students can benefit from the agency partnership.

Engaging with Students

SFPUC wanted to create a sustained, sequential set of interactions with students that introduced age-appropriate educational content and experiences and laid the foundation for older students to consider SFPUC as an attractive potential employer. For this reason, the pilot includes engagements at freshman, junior, and senior years with plans for touchpoints at the sophomore level anticipated in future iterations of the program.

- **Freshmen:** Freshmen have an opportunity to go on an overnight trip to Camp Mather and visit the Hetch Hetchy Reservoir. For many students, this rewarding outdoor experience visiting Yosemite National Park and the surrounding public lands is deeply impactful. During this trip, students learn about the environment and see first-hand the source of 85 percent of San Francisco's drinking water.
- **Juniors:** Juniors receive work-based learning in their curriculum and visit various employers across the region once a week. This allows students to see different industries and develop a better understanding of how their classroom content applies to the real world. As part of this program, students visit one of the SFPUC plants or facilities to better understand the types of jobs that are available and the skills and education needed to work in those facilities.
- **Seniors:** Seniors are poised to enter the workforce and, for that reason, SFPUC has targeted its most in-depth engagement at this grade level. At John O'Connell, seniors are eligible to receive weekly hands-on training at one of the SFPUC's plants or facilities. Students shadow different departments and gain an all-encompassing knowledge of the public water sector. As a result of this program, one John O'Connell student became interested in the engineer and maintenance technician positions, completed an electronic technician program, and is currently an intern at SFPUC.

"It has been a positive experience being able to learn about San Francisco's environment and natural resources, research and work collaboratively with my classmates, and have hands-on projects related to the SFPUC."

John O'Connell High School student

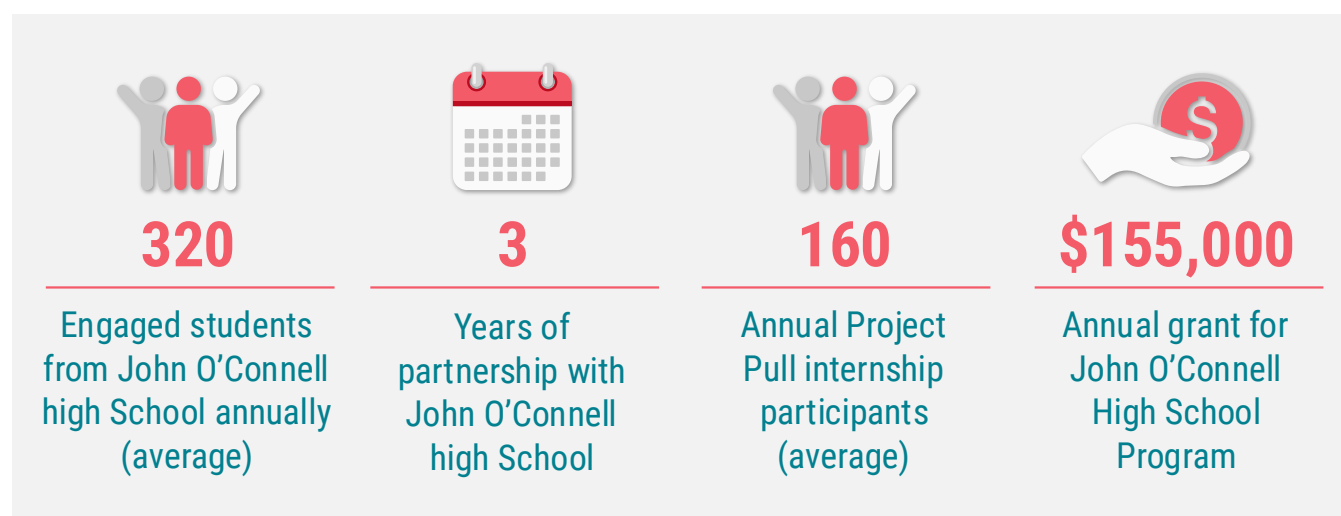
Lessons Learned

For SFPUC, the decision to develop and launch a robust and varied youth engagement program came after an internal workforce assessment identified a significant future gap in mission-critical positions. SFPUC also saw this challenge as an important opportunity to help its local community access family-sustaining employment opportunities—specifically, job seekers from environmental justice communities. With that goal in mind, SFPUC developed programs aimed at creating capacity and awareness at an early age within the community. For utilities interested in launching educational programs for students, SFPUC noted the following lessons learned:

- **Invest in Teachers:** Resources for teacher planning time are vital to the John O'Connell pilot's success. The grants help to ensure that teachers are supported and incentivized to put time and effort into the integration of SFPUC concepts in their lesson plans.
- **Offer Tours to Allow Students to See "Behind the Scenes":** Tours can help to ensure that students see the concepts in action and meet a range of utility staff to learn about their careers. Staff are encouraged to share with students about their jobs, key responsibilities, highlights, challenges, and how they got to the SFPUC.

- **Create Utility Liaisons:** For many SFPUC staff serving as subject-matter experts (SMEs), working with students and teachers can be an exciting opportunity that makes their work more meaningful and fun. Nevertheless, busy schedules and new partnerships can foster unclear expectations and miscommunications. SFPUC pilot program staff have found success in serving as liaisons between teachers and SFPUC SMEs. SFPUC liaisons help to clarify the time expected of an SME's schedule, coordinate dates for guest speaking and tour opportunities, coach SFPUC SMEs on useful and relevant content for high school youth and ensure responsiveness from all parties.
- **Consult and Communicate with School Career Counselors:** It is helpful to ensure that students can access career counselors with knowledge about utility job training so that counselors can support students to advance towards work in the water, power, and sewer sectors. Consultation between career counselors and utility human resources staff can aid in this effort.

San Francisco Public Utilities Commission's Program by the Numbers



Conclusion

Utilities must make an investment in their young people, just as we invest in our natural resources. The San Francisco Public Utilities Commission has curated an array of programs that engage students from kindergarten to career to build important fundamental environmental stewardship ideals and support students as future leaders and utility workers. While these programs do not necessarily result in immediate recruitment, they have touched over 77,000 youth and more than 100 of their educators as they build towards the future together.

The SFPUC's Kindergarten-to-Career strategy and engagements enable students to think about their connection to the natural environment through hands-on field trips, in-classroom curricula, and workforce exposure programs. Through this holistic approach, SFPUC is active in promoting water as a career of choice in their communities by supporting education and opportunity for youth – particularly youth who live in environmental justice communities. The John O'Connell High School Awareness Pilot Program is a catalytic program ensuring that students acquire the opportunity to connect their studies to real-life SFPUC concepts and projects and learn about utility careers in the process.

"We understand that our mission entails more than simply delivering water, power, and sewer services to the public. We want to support our youth through education initiatives, enliven our communities with public arts and green spaces, and bolster the local economy through apprenticeship training and economic assistance programs. We see it as our duty to partner with our residents and businesses to build strong, sustainable and vibrant communities for generations to come."

**Juliet Ellis, Chief Strategy Officer and Assistant
General Manager for External Affairs**



Cultivating Water & Community Leaders

Transformative Water Leadership Academy

Introduction

The American Water Works Association (AWWA)/WaterNow Alliance (WaterNow) Transformative Water Leadership Academy (TWLA)² is a program that addresses all four of the key elements necessary to develop the water workforce: recruitment, retention, competency, and community partnerships. This case study focuses on the TWLA's emphasis on **recruitment** and **retention**. Recruitment requires a stable, robust, and qualified pool of applicants and utilities that can compete for needed skills and talent. Effective retention programs are supported by a utility's human resources programs and an organizational culture of continuous improvement, growth, and development.

TWLA supports recruitment by strengthening the connection between future water leaders and their communities. Connecting water sector leaders and communities builds a critical network that demonstrates the opportunities available in the utility sector and creates paths for prospective employees to be guided towards water sector positions. TWLA supports retention by instilling an organizational culture of growth and development in current

² To accelerate career pipelines in the water utilities sector and provide access to water utility workforce opportunities Congress, the American Water Infrastructure Act of 2018 authorized the Environmental Protection Agency (EPA) to develop a grant program under Section 1459E of the Safe Drinking Water Act (SDWA). EPA is authorized to award grants to nonprofit professional or service organizations, nonprofit labor organizations, nonprofit community colleges, institutions of higher education, or other nonprofit training and educational institutions to (1) assist in the development and use of innovative activities relating to water workforce development and career opportunities in the drinking water and wastewater utility sector, and (2) expand public awareness about drinking water and wastewater utilities and to connect individuals to careers in the drinking water and wastewater utility sector. In 2021 for the initial grant cycle, EPA selected a total of 9 organizations to receive grant funding under the "[Innovative Water Infrastructure Workforce Development Program](#)." TWLA is one of these 9 recipients.

utility employees, building the number and capacity of current water sector employees that are positioned to be the water utility leaders of the future.



One of the critical challenges facing the water sector in the next decade is the aging water workforce. The median age of water employees is 48 years old and 30 to 50 percent of these workers will be eligible to retire within the next 5 to 10 years.³ At the same time, utilities are simultaneously seeking to enhance the diversity of their workforces⁴ to better reflect the communities they serve. Workforce solutions are critically needed as utilities address one water challenges such as emerging-contaminants, water shortages, digital technologies, cybersecurity, and rapidly changing treatment technologies and processes are placing greater demands on our drinking water and wastewater utilities. By investing in the leadership qualities, experiences, and community connections of current water sector employees, TWLA is building the skills they will need for utility leadership and helping to address the recruitment and retention challenges the water sector faces.

TWLA Pillars

The TWLA is designed to cultivate the skilled leadership and talent needed to address emerging water issues. The Leadership Academy's curriculum and ongoing support and experiential opportunities are all geared to increase leadership capacity in areas essential to America's utilities, teach innovative approaches to solving community problems, and through participant training provide opportunities for professional advancement while improving management and protection of water and environmental resources.

The five pillars that form the foundation of TWLA include:

Diversity. Expanding the pool of utility talent and leadership to be inclusive of and reflect all parts of the communities that utilities serve, including marginalized or underserved populations.

Commitment. Developing a guiding mission to create sustainable, community-centered utilities of the future.

Action. Identifying challenges facing communities and developing practical, community-centered solutions.



"The future of water is inclusive and sustainable. We are going to look for sustainable practices that include everyone that it effects."

Gabriel Evans – Equity Intern, City of Scottsdale, AZ

³ America's Water Sector Workforce Initiative (EPA 2020). Available at: https://www.epa.gov/sites/default/files/2020-11/documents/americas_water_sector_workforce_initiative_final.pdf

⁴ The water industry lacks both gender and racial diversity when compared to overall occupational employment. <https://www.brookings.edu/articles/water-workforce/>

Network. Building participants' connection with one another and a body of nationally, regionally, and locally influential organizations.

Community Engagement. Encouraging direct community involvement with a goal of anchoring participants and their utilities more strongly to the communities they serve and fostering deeper understanding and empathy for all parts of their community.

Cohort and Curriculum

TWLA Cohort

Intentionally bringing diversity into the water sector workforce is a key tenet of TWLA and the America's Water Sector Workforce Initiative. TWLA embeds the values of diversity, inclusion, and social equity throughout the program, in both the development of the cohort and the curriculum.

The TWLA commitment to diversity begins with its applicant recruitment process by actively recruiting participant cohorts that are from diverse racial, ethnic, and gender perspectives. Cohort members are also diverse in terms of geography, utility type, and job positions. Developing a diverse cohort of TWLA participants will build a workforce where utility leaders bring a variety of experiences and perspectives to key issues and reflect the diversity of the people they serve. The inaugural cohort of 50 participants fulfilled this program goal and graduated in August 2023.

TWLA 2023 Cohort by the numbers:



DIVERSITY

People of Color: 46%
Women: 62%



GEOGRAPHY

10 EPA Regions
2 Canadian Provinces



ONE WATER

94% Drinking Water
28% Reuse
54% Wastewater
25% Stormwater



UTILITY ROLES

Engineering, Operations, Finance, Communications, Government Relations, Capital Projects, Community Outreach, Project Management, Customer Service, Laboratory, Conservation, Regulatory Compliance

SEE RELATED VIDEO »



"Being in a cohort of 50 members from every area of the nation is great; we are able to discuss things that happen in other regions we wouldn't normally discuss and looking at things from a broader lens has definitely opened my eyes."

Esther Baptiste – Management
Professional Systems Planning, Great
Lakes Water Authority, MI

TWLA Curriculum

The TWLA program is a 10-month leadership academy focused on fundamental concepts of sustainable community leadership to prepare participants for higher-level supervisory or management-level positions. The Sustainable Community Leadership Principles are each developed through key issues and topics addressed in the curriculum.

- **Protecting Public Health:** This principle is discussed through topics on the Safe Drinking Water Act, the human right to water, affordability, customer assistance, environmental justice and the history of redlining, and lead and Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS).
- **Safeguarding the Environment:** This principle is discussed through topics on Anchor Institutions, watershed protection, source water protection, One Water, conservation and water management, the Clean Water Act, EPA's Environmental Justice Directives & National Environmental Policy Act integration, climate change and climate adaptation planning, PFAS, and green infrastructure.
- **Strengthening Public Trust:** This principle is discussed through topics on community mistrust (why public trust is vital), transparency and accountability, restoring community confidence, utility roles and responsibilities, communication, and building relationships.
- **Inspiring Innovation:** This principle is discussed through topics on institutional and cultural innovations, innovative water infrastructure and management solutions, water technology, water finance including inter-generational equity, affordability and debt, and inclusive community approaches.
- **Advancing Diversity, Equity and Inclusion:** This principle is discussed through topics on environmental justice and structural/institutional inequity, strategies for regressing systemic inequity and restoring trust, organizational culture, personal awareness and commitment, personal identity, power and privilege, and unconscious/conscious bias.
- **Thinking Globally and Acting Locally:** This principle is discussed through topics on the importance of context for effective problem-solving through design thinking and contextual engineering, global challenges of climate change, motivating participants to take action and make a difference, gaps to access clean and safe water, historical and structure political and social inequities, and environmental justice.

The learning experiences include 12 virtual lectures and discussion, four interactive small groups and sharing, two in-person workshops, a capstone project, and report-outs on the experience (including leadership knowledge and skills developed). Through in-person and virtual learning sessions, participants engage in full group meetings and smaller group sessions to encourage depth of conversation and sharing. The curriculum provides engagement with mentors and exposure to rich array of organizations and resources to support emerging water utility leaders. TWLA program graduates receive a certificate documenting the certified contact hours received for the program participation, provided by Water Professionals International (WPI).

[SEE RELATED VIDEO »](#)



"The future of water looks like clean, safe and most importantly affordable drinking water – and providing those through an equitable and inclusive lens."

Kevin Rodier – Engineering Project Manager, New Jersey American Water

Collaborating Organizations

The TWLA has developed a collaborative of nationally and regionally influential organizations to share their expertise by enhancing discussions of biases and inequities in the learning process. In addition to the collaborative, speakers for the learning sessions and workshops come from a wide range of organizations and utilities such as:

- Community Water System Alliance
- DigDeep
- Engineers Without Borders
- EPA Office of Environmental Justice and External Civil Rights
- Pacific Institute
- Moonshot Missions
- River Network
- Schuylkill Action Network
- Central Arkansas Water
- Moulton Niguel Water District, California
- Water Replenishment District of Southern California
- University of Illinois, Contextual Engineering Research Group
- Southern Nevada Water Authority
- Water First Education and Training
- WaterNow Alliance
- Los Angeles County Public Works
- D.C. Water
- City of Greeley Water and Sewer
- Denver Water
- Toho Water Authority
- Aurora Water
- Water Professionals International
- Charlotte Water
- Greater Cincinnati Water Works
- Philadelphia Water Department
- Milwaukee Metropolitan Sewerage District

Capstone Project

The capstone project enables participants to apply the TWLA sustainable community leadership principles to real world water challenges so they can then develop and amplify solutions. These projects help to address important needs or unmet opportunities in the participants' organizations and communities. In many cases, the participants' organization has recognized the value of the capstone project such that it became an organizational project, tangibly demonstrating the value TWLA can bring to utilities and their communities.

Many of the completed capstone projects can be adapted for any utility to use, such as workforce development, customer service programs, affordability strategies, community outreach initiatives, as well as best management practices for technical projects. Capstone projects are presented using specific presentation methodology designed to refine participants' essential communication skills over the 10-month cohort period.

In the 2023 cohort, several of the capstone projects focused on workforce development, leveraging the EPA Innovative Water Infrastructure Workforce Development Program support of TWLA even further, by spawning more workforce development projects.

[SEE RELATED VIDEO »](#)



"I am most excited to take back to my home utility more marketing and communication strategies to connect and build trust in the community— and also how I can foster diversity, equity and inclusion to prepare and be a champion of the change that is needed to propel the utility into the future."

Dom Bennett – Assistant Director of Customer Care, City of Lee's Summit, MO

Highlights of a few of the workforce-related capstone project ideas include:

Black in Water: The Importance of Black Mentorship in Black Water Professional Careers

Through interviews and research, this participant set out to encourage water utilities, organizations, and leaders to invest in formal and informal mentorship for young black professionals in the water industry, as well as increasing the representation and visibility of Black voices within the industry.

Recruitment and Retention for the Next Generation of Water Industry Employees

The vision of this project is to bridge the gap for students enrolled in community college or trade schools into internship positions at utilities. This TWLA participant plans to meet with state and regional human resource agencies and community colleges in order to facilitate these entities working together on internship programs. The project includes evaluating the success rates for student interns filling entry level positions.

Developing the Water and Wastewater Workforce through a Community-Driven Approach

This project identified opportunities through the City of Tulsa Water and Sewer Department to develop a focused approach to improve recruitment in positions with historically high vacancy rates and to create community partnerships that are mutually beneficial for connecting people with meaningful employment opportunities.

Ongoing Support of Graduates

TWLA provides ongoing support to cohort participants after the program graduation to continue developing these future leaders. This ongoing connectivity provides continuity with newer cohorts to leverage the benefits of the program into as large as possible a group of future utility leaders. TWLA offers ongoing support to its graduates by:

- Hosting quarterly webinars to graduates;
- Inviting graduates to share their capstone projects and offer feedback to current participants;
- Providing opportunities for graduates to serve as assistants for small group discussions with current program participants;
- Sharing cohort success stories.

Because communication is an important component of the TWLA experience, upon completion each graduate is challenged to exercise their communication leadership and share their knowledge and experience with the water sector by making an oral presentation on how to lead within their utility and/or writing an account of how the TWLA experience affected their understanding of the impact leadership can make positive change.

By tracking communication and leadership milestones, TWLA can show that several of its participants have had job promotions or advancement within their utilities, presented at panels and



“Through this academy...we're doing transformative work to help leaders all around the country emerge. I'm excited that the academy will provide me with the tools and resources to grow as a leader, and then to give that back to my community through our programs and resources, as well as to my colleagues who are young professionals, as well.”

Lily Lopez - Director of External Affairs and Sustainability, Walnut Valley Water District

conferences, written or published articles, been accepted to other leadership programs, received leadership awards, and been appointed to volunteer professional committees. These accomplishments further embed these water sector leaders into their profession and their community, building a pipeline of well-trained and community-minded leaders to guide the water sector into the future and through the challenges to come.

Below are just a few of the beneficial experiences that participants identified after completing the TWLA:

- Becoming a leader that coworkers turn to for expertise.
- Being able to see bigger picture of utility and higher goals.
- Sharing resources and activities from TWLA with their home organizations.
- Being more innovative.
- Building greater trust with public and community partners.
- Facilitating system prioritizations and improvements.
- Recognizing the impact and importance of water utility work.



“The TWLA program reminded me that I have peers across the country who are going through the same challenges, whether the challenge was personal development, workforce development, climate change, or regulatory shifts. TWLA provided the experiences and opportunities for participants to build strong relationships and support systems where we could be encouraged, seek guidance, or give advice during challenging times.”

**Gregory Williams – Deputy Operations Office,
Valley Water**



Lessons Learned

AWWA, WaterNow, and other founding partners created the TWLA to build a network of emerging utility leaders to a) expand their leadership opportunities; b) strengthen ties between communities and utilities; and c) help drive recruitment and retention in water sector jobs. The challenges and needs of the water workforce are vast and require this kind of collaboration across the sector and in local communities to ensure a sustainable and resilient water workforce in the years to come.

Lessons learned from implementation of the inaugural TWLA program include:

- Build in plenty of time for networking, interaction, and sharing best practices. The topical knowledge transfer is important, but building relationships across the cohort, and therefore the water industry, is also critical to a successful program outcome.
- Determine whether any parts of a program may qualify for continuing education units/professional development hours, which provides a double benefit for operators or engineers.
- Be flexible and prepared to deal with travel challenges, including travel expenses.
- Account for program attrition.
- Continue to invest in recruitment of a diverse cohort, especially Tribal participants.
- Begin with the end in mind, not only the goals for the program, but how you can build a lasting, sustainable community of leaders.
- Build in performance metrics for tracking and quantifying results – think about the metrics that define success for your program and track them from the start.



"I feel much more solid in my ability to identify future industry trends and challenges. I also now have much more confidence leading employees towards meaningful changes that may be necessary to shape future success."

Melissa Gray – Utilities Operation Manager, City of Tulsa Water and Sewer Department

Next Steps

The second TWLA cohort (2024) is well underway, and the host organizations are hoping to be able to continue the program for some time to come. With a recently awarded additional EPA Innovative Water Infrastructure Workforce Development Grant, TWLA will increase their ability to track cohort members once they have graduated from the program and use the data to create reports on the successes of the program in preparing future water leaders. TWLA is also looking to expand the pool of participants into three complementary leader groups that will all benefit from leadership development, mentoring, and cross-training. TWLA will continue to explore sustainable and diverse funding models since the program's commitment to diversity and inclusion requires that the cost of the program is not a barrier to participation.

Conclusion

The collaboration between AWWA, WaterNow and other partners in establishing TWLA highlights the transformative potential of partnerships in advancing sustainable water management practices and workforce development opportunities. By harnessing the synergies between government agencies, industry organizations, and non-profit organizations, these organizations are addressing complex challenges more effectively and drive meaningful change. As the water sector grapples with unprecedented challenges, the collaborative efforts highlighted in this case study serve as a testament to the power of collective action in shaping a more resilient and sustainable water future.



Transformative Water Leadership Academy panel – from left to right: Alane Boyd, TWLA Leadership Team; Lily Lopez, 2023 Graduate; Gabriel Evans, 2023 Graduate; and Skylar Reed, 2023 Graduate



Type of Utility	Combined	 GLWA Great Lakes Water Authority Great Lakes Water Authority Location: Detroit, MI	3.8 million W; 2.8 million WW	Population Served
Governance	Independent Authority		Approximately 1,027	Employees
Receiving Waters	Detroit River and Lake Heron ⁷⁸ ; Detroit and Rouge River ⁷⁹		1,698 Square Miles W; 944 Square Miles WW	Service Area
Miles of Pipe	816 miles W ;195 miles WW		1,720 MGD W; 1,700 MGD WW	Plant Capacity

Supporting Apprentices Through Community Partnerships

Introduction

As a treatment services provider, [Great Lakes Water Authority](#)⁸⁰ (GLWA) provides high-quality drinking water to nearly 40 percent of Michigan’s population and effective and efficient wastewater services to nearly 30 percent of the state’s population through formal agreements. Since the organization’s establishment in 2016, GLWA has helped build partnerships and workforce relationships across the region, especially among the water and infrastructure sectors. Since GLWA serves a large population and collaborates extensively on the ground through formal agreements—with 88 member partners across 112 drinking water communities and 19 wastewater member partners across 79 communities. GLWA understands that workforce recruitment and retention is a current and growing concern. GLWA developed new strategies and initiatives to recruit new staff that represent the diversity of the

communities they serve. This case study will examine GLWA's efforts to: achieve a representative workforce through community workforce partners and internal retention programs, and share strategies and resources with their member partners.

Supporting Apprenticeships

GLWA saw a decrease in their workforce due to retirement and natural attrition. Due to steep competition for those with skilled trades experience, GLWA needed to develop new recruitment strategies. GLWA realized there were untapped markets within their local community and accordingly engaged with workforce organizations that had longstanding relationships and programming within the community, and together they developed workforce pathways for local individuals. GLWA's Chief Organizational Development Officer used deep community ties to further develop GLWA's relationships with local organizations and establish a community apprenticeship recruiting program and pre-apprenticeship program.



Shane Clark is an Electrical Instrumentation Control Technician – Electrician Apprentice for GLWA. Shane was featured in GLWA's Caught Working Safely program in 2020 after safely disassembling heavy light fixtures in a two-story building.

GLWA now works with workforce partners in the community, such as Focus: HOPE to recruit individuals with an interest in a career in the water sector, taking them through an U.S. Department of Labor (USDOL) registered apprenticeship program with local community colleges and trade schools. GLWA provides key support during both the apprenticeship and when they become full-time team members. In 2020, GLWA completed a three-year Electrical Instrumentation Control Technician – Instrumentation (EICT-I) apprenticeship with a 100 percent success rate. Ninety-five percent of the apprentices accepted a full-time position with GLWA. Due to the success of the EICT-I apprenticeship, GLWA is currently in the process of designing a second cohort.

To date, GLWA has four active apprenticeship programs: Maintenance technician, Electrical Instrumentation Control Technician – Instrumentation (EICT-I), Electrical Instrumentation Control Technician – Electrician (EICT-E), and the recently launched Water Technician program, which is GLWA's fourth apprenticeship.

The EICT-I, the EICT-E, and the Water Technician apprenticeships are approved by the Department of Veterans Affairs-Education Services as part of the Support for Veterans in Effective Apprenticeships Act of 2019. Apprentices who are veterans are eligible to receive housing assistance through the GI Bill for the length of their apprenticeship.

Inaugural Class of Skilled Technician Apprentices

Twenty apprentices started their journey at [Focus: HOPE](#)⁸¹ in 2017, where they developed important foundational skills before getting accepted to GLWA's three-year EICT-I Apprenticeship Program. In 2020, GLWA celebrated the graduation of these apprentices from the inaugural EICT-I Apprenticeship Program.

This three-year "learn-while-you-earn" program allowed participants to gain on-the-job skills and attend specialized courses at Henry Ford College. The graduates completed the USDOL requirements and received a USDOL Certificate of Completion of Apprenticeship. Of the 20 graduates, 19 accepted full-time positions at GLWA.

Focus: HOPE

GLWA works with Focus: HOPE, a Detroit-based organization that provides services to combat the effects of racism, poverty, and other forms of social injustice in southeast Michigan. Focus: HOPE provides pre-apprenticeship, workforce readiness, and job training programs that provide foundational skills such as computer and financial literacy, shop math, and advanced manufacturing. Each participant is supported through a mentoring structure that provides support in topics such as work expectations and performance, customer service, and organizational skills. Once participants have completed the pre-apprenticeship training program, they are eligible to apply for GLWA's Apprenticeship Program.

GLWA's registered apprenticeship programs are a partnership between GLWA, Focus: HOPE, local educational training partners, and the local union. These programs are USDOL registered and approved. Once participants are accepted into the GLWA Apprenticeship Program, they are required to complete on-the-job-learning hours and coursework with the educational training partner. On-the-job learning hours and coursework are based on the USDOL apprenticeship standards and vary by apprenticeship. GLWA covers apprenticeship tuition costs from the educational training partner thus removing a financial barrier for the apprentices.

GLWA's valuable partnership with Focus: HOPE has increased the community's awareness of GLWA's services and job opportunities as well as provided new skills and economic opportunities to community members who completed the apprenticeships. GLWA has recruited approximately 60 individuals from Focus: HOPE for their apprenticeship programs.

Michigan Works!

As apprenticeship recruitment became more effective, GLWA saw a growing need to support and retain apprentices once they were in the program. GLWA was introduced to [Michigan Works! Association](#)⁸² through their partnership with Focus: HOPE. Michigan Works! is a statewide, unified workforce development system that provides its members key wrap-around services and connects them to professional development and training opportunities.

These services help address and overcome barriers that many team members face as they seek to successfully maintain full-time employment. Based on available grant funding, team members who meet pre-determined criteria, such as residency and household income, may be eligible to receive assistance in areas of housing, transportation, tools, and work clothing. GLWA works with Michigan Works! to identify and enroll eligible apprentices into the program. In 2020, six GLWA apprentices received support from Michigan Works! These eligible team members collectively received over \$10,000 in assistance to remove barriers to successful employment.

These valuable community partnerships and wrap-around services help identify, train, and retain talented individuals as they navigate starting a new water career at GLWA.



Apprentices receive on-the-job training from experienced staff to support GLWA operations.

One Water Institute

When GLWA was established in 2016, it recognized that many team members were taking on new responsibilities and needed support through structured training opportunities. In response to this need, GLWA created the One Water Institute (OWI), an internal training academy that provides education, training, leadership, and professional development opportunities for their team members. Over the last five years, OWI has expanded and evolved based on assessments of the region's training needs. The OWI is a comprehensive learning and development program with six different academies that is led by a team of full-time GLWA Training and Development Professionals. Several of the courses encourage peer-to-peer learning and support. The six academies are:

- Safety
- Water and Field Services
- Wastewater Operations
- Technology
- Leadership Development
- Leader-in-Me

Leadership Development and Leader-in-Me

The Leadership Development Academy is the most recently developed academy within the OWI. It focuses on providing team members with courses and experiences that will enhance their leadership skills. The Leadership Development Academy includes the following:

- Transition: Team Member to Leadership,
- What is Leadership?,
- Crucial Conversations,
- 7 Habits of Highly Effective People,
- Conflict Management and Resolution, and
- Change Management, etc.

The Leader-in-Me Academy provides team members interested in moving into leadership positions with training and development opportunities to enhance their professional development. Unfortunately, due to the COVID-19 pandemic, GLWA could only do a limited launch of the Leadership Development Academy and Leader-in-Me Academy during the 4th quarter of 2021.

Regional Connector

As a treatment services provider, GLWA recognizes its unique ability to connect with a large number of member partners (i.e., customer communities that receive services through a formal agreement and partnership) and the region's population, and strives to go beyond the traditional customer interaction. Over the past five years, GLWA has grown and enhanced its Member Outreach program. In 2020, the utility conducted more than 80 meetings, including a variety of work group meetings and quarterly One Water Partnership meetings. During these engagements, GLWA learned that many member partners were interested in the OWI, which at the time was only for GLWA team members. GLWA acknowledged that it would be advantageous to provide continuous learning and development services to all its member partners thereby bolstering the entire region. The region would be able to provide high-quality services to its customers while sharing a common language, skill set, and foundational knowledge developed in the six OWI academies. In 2020, GLWA opened the OWI to all member partners as part of their member services.

In addition to regular meetings, GLWA has a robust communication platform that provides key updates on programs and initiatives to member partners. This continuous communication and engagement has built trust and collaboration between GLWA and its member partners.

Another community partnership endeavor between GLWA and Focus: HOPE is an Employer Led Collaborative (ELC) with GLWA as the lead employer. Partially funded by the Michigan Industry Cluster Approach 3.0 grant, the ELC is a regional collaborative that includes commitments from GLWA member partners, educational providers, and community organizations. The ELC's purpose is to integrate the [Talent Pipeline Management \(TPM\) system](#)⁸³ and the framework to fill high-demand manufacturing and water sector jobs with well-trained, skilled workers. TPM is a demand-driven strategy to create career pathways for students and

"GLWA recognized the decrease in the skilled workforce and the tightening of the labor market in southeast Michigan and knew that we needed to be creative in order to fill the skilled roles imperative to our operations. Our creative approach was to launch our inaugural apprenticeship in 2017 with the support of our community partners. Since that time, we have added three new apprenticeships, and all are working productively to help fill skill gaps within our workforce while investing in members of our surrounding community -- a true win-win situation."

Patricia Butler, MA, GLWA Organizational Development Manager

workers with talent pipelines aligned to dynamic business needs. TPM is an initiative of the U.S. Chamber of Commerce Foundation.

Lessons Learned

GLWA developed community partnerships that enabled them to recruit skilled and talented individuals for their apprenticeship programs and created internal academies to further support its team members' development. These lessons learned will assist utilities and other treatment service providers undertaking similar efforts:

- **Confirm Program Funding Support:** Communicate with community partners on their funding sources and potential impact on programs. Focus: HOPE receives state and federal grants to conduct their programs, in particular the pre-apprenticeship programs. When a grant expires, Focus: HOPE must either locate a new grant, update the current program to meet new grant requirements, or suspend the program. Michigan Works! receives state grants to provide services and support to Michigan's workforce development system. Individual Michigan Works! offices launch varying workforce development programs to fulfill grant requirements. GLWA works closely with Focus: HOPE and local Michigan Works! offices to understand their programs, grant requirements and support future grant application requests.
- **Provide Adequate Resources for Apprentices with Employment Barriers:** Support and retain apprentices with key wrap-around services such as financial assistance for housing and transportation and by partnering with the U.S. Veterans Administration and state and local support service agencies.
- **Review Apprenticeship Requirements:** Work closely with the USDOL to understand apprenticeship requirements and standards, and mechanisms to maintain ongoing record-keeping. Prior to launching their first apprenticeship, GLWA worked closely with the USDOL, Focus: HOPE, Henry Ford College, and the local union to develop pre-apprenticeship and apprenticeship requirements and coursework that would set up participants for success.
- **Use Data to Tell a Compelling Story:** To gain executive sponsorship, GLWA learned that using data to identify workforce gaps at the utility was instrumental to gaining and maintaining support.

Great Lakes Water Authority's Programs by the Numbers



5 YEARS

Focus: HOPE and GLWA have partnered together



>\$400,000

Annual funds GLWA allocates to workforce recruitment and retention



5,391

Total GLWA and member partner staff that have attended the OWI



60

GLWA staff recruited through Focus: HOPE

Conclusion

GLWA's current recruitment strategies focus on supporting potential team members through key community partnerships and then once hired, with critical professional development academies. GLWA actively engages with its local workforce community partners to recruit and train promising individuals through its highly successful apprenticeship programs. These apprentices receive hands-on training and after completing requirements, receive a USDOL Certificate of Completion of Apprenticeship, and a full-time employment offer. GLWA, team members and member partners benefit from the OWI and can further their knowledge through six academies. While GLWA has many promising programs, they are looking forward to formally launching new apprenticeships and professional development academies as additional needs arise. GLWA continues to reflect and refine its recruitment and retention strategies to ensure that team members are fully supported.

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- ¹ <https://www.epa.gov/sustainable-water-infrastructure/americas-water-sector-workforce-initiative>
- ² <https://louisvillemmsd.org/>
- ³ <https://louisvillemmsd.org/doing-business-us/community-benefits>
- ⁴ https://louisvillemmsd.org/sites/default/files/file_repository/Supplier%20Diversity/MSD%20Disparity%20Study%20Executive%20Summary%207-23-18.pdf
- ⁵ <https://www.youtube.com/watch?v=NrJzDqxhOcw&feature=youtu.be>
- ⁶ https://louisvillemmsd.org/sites/default/files/file_repository/6843LWC-Joint%20Partnership%20Flyer%20DIGITAL.pdf
- ⁷ <https://www.jefferson.kyschools.us/schools/profiles/fairdale-high>
- ⁸ <https://www.jefferson.kyschools.us/file/fairdale-pathway-chart.jpg>
- ⁹ <https://www.summerworks.org/>
- ¹⁰ <https://www.youtube.com/watch?v=wlnlpWBjQe8>
- ¹¹ <https://www.brookings.edu/research/water-workforce/>
- ¹² W represents drinking water; WW represents wastewater
- ¹³ <https://www.phila.gov/water/sustainability/greencitycleanwaters/Pages/default.aspx>
- ¹⁴ <https://www.phila.gov/water/pages/default.aspx>
- ¹⁵ <http://powercorpsphl.org/>
- ¹⁶ <http://powercorpsphl.org/model/>
- ¹⁷ <https://vimeo.com/382437196>
- ¹⁸ <https://www.mmsd.com/>
- ¹⁹ www.uswateralliance.org/sites/uswateralliance.org/files/publications/USWA_Milwaukee%20Equity%20Roadmap.pdf
- ²⁰ <https://www.veolianorthamerica.com/milwaukee/>
- ²¹ <https://www.mmsd.com/careers/workforce-development>
- ²² <https://youtu.be/SvzasBHxwNA>
- ²³ <https://www.prismtechnical.com/rise>
- ²⁴ <https://wrtp.org/>
- ²⁵ <https://www.freshcoastguardians.com/resources/green-infrastructure-program/fresh-coast-ambassadors>
- ²⁶ <https://www.mnwd.com/>
- ²⁷ <https://www.youtube.com/watch?v=EPigX2PYK8Q&feature=youtu.be>
- ²⁸ <https://www.mnwd.com/future-leaders-of-water/>
- ²⁹ <https://youtu.be/ttsMS5R02Ds>
- ³⁰ https://www.sacomaine.org/departments/water_resource_recovery_division/index.php
- ³¹ <http://jetcc.org/wastewater-training.php>
- ³² <http://jetcc.org/wastewater-training.php>
- ³³ <http://jetcc.org/mcs.php>
- ³⁴ <https://www.youtube.com/watch?v=rUjGtAu9yXI&feature=youtu.be>
- ³⁵ Co-owned by two cities
- ³⁶ <https://southplatterenewco.gov/>
- ³⁷ https://www.youtube.com/watch?v=wwSGc2fl_GA
- ³⁸ <https://metro council.org/About-Us/What-We-Do/Departments/Environmental-Services.aspx>
- ³⁹ <https://metro council.org/Employment/Internships/Urban-Scholars.aspx>
- ⁴⁰ <https://www.ibew110.org/>
- ⁴¹ <https://www.twincitiesrise.org/>
- ⁴² <https://idiinventory.com/>
- ⁴³ <https://www.cuwcd.com/>
- ⁴⁴ <https://www.waterone.org/>

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- ⁴⁵ <https://www.owp.csus.edu/courses/catalog.php>
- ⁴⁶ <https://alexrenew.com/>
- ⁴⁷ <https://theurbanalliance.org/locations/northern-virginia/>
- ⁴⁸ <https://careercenter.apsva.us/>
- ⁴⁹ <https://theurbanalliance.org/about-us/>
- ⁵⁰ <https://theurbanalliance.org/locations/northern-virginia/partners/>
- ⁵¹ <https://careercenter.apsva.us/>
- ⁵² <https://careercenter.apsva.us/capstone/>
- ⁵³ <https://www.atlantawatershed.org/>
- ⁵⁴ <https://wellspringliving.org/academy/>
- ⁵⁵ <https://vimeo.com/269732421>
- ⁵⁶ SFPUC offers water, power, and sewer services
- ⁵⁷ The range of 80-575 MGD depends on wet weather events. SFPUC has multiple wastewater plants.
- ⁵⁸ <https://www.sfwater.org/>
- ⁵⁹ <https://sfwater.org/index.aspx?page=656>
- ⁶⁰ <https://www.calacademy.org/educators/the-story-of-poo>
- ⁶¹ <https://www.youtube.com/watch?v=hBuWCKAx8Is>
- ⁶² <http://sfwater.org/index.aspx?page=490>
- ⁶³ <https://sfwater.org/index.aspx?page=491>
- ⁶⁴ <https://sfwater.org/index.aspx?page=987>
- ⁶⁵ <https://www.sfwater.org/index.aspx?page=160>
- ⁶⁶ <https://sfwater.org/index.aspx?page=1077>
- ⁶⁷ <https://www.calacademy.org/bsi>
- ⁶⁸ <https://www.sfwater.org/index.aspx?page=95>
- ⁶⁹ <https://www.sfwater.org/index.aspx?page=504>
- ⁷⁰ <http://acrcd.org/>
- ⁷¹ <https://www.sfwater.org/index.aspx?page=1138>
- ⁷² <https://www.sfwater.org/index.aspx?page=1262>
- ⁷³ <http://sfyouthworks.org/>
- ⁷⁴ <http://sfgov.org/projectpull/>
- ⁷⁵ <http://www.ycdjobs.org/>
- ⁷⁶ <https://www.ignitededucation.org/about/>
- ⁷⁷ <https://www.ignitededucation.org/>
- ⁷⁸ Water intake
- ⁷⁹ Discharge
- ⁸⁰ <https://www.glwater.org/>
- ⁸¹ <https://www.focushope.edu>
- ⁸² <https://www.michiganworks.org/>
- ⁸³ <https://www.uschamberfoundation.org/talent-pipeline-management>