

G R E A T L A K E S W A T E R A U T H O R I T Y



Y E A R I N R E V I E W

03

Letter from the CEO

One Water: Our System and Operations

- 05 | Measuring Success
- 09 | Financial Sustainability
- 12 | Operational Optimization and Sustainability

One Team: Collaboration with Member Partners, Team Members and Other Stakeholders

- 15 | Member Partner and Stakeholder Collaboration
- 20 | WRAP
- 22 | Commitment to Four Percent Revenue Requirement Promise

One Water One Team

- 24 | Apprenticeship Program
- 26 | Making Big Waves

One Mission: Water of Unquestionable Quality; Effective and Efficient Services

- 29 | Water Quality
- 30 | Monitoring for Emerging Contaminants
- 33 | System Resiliency
- 37 | Innovation
- 38 | Vendor Outreach and Engagement

What’s Next for GLWA

About GLWA

- 42 | Water System
- 44 | Wastewater System
- 46 | Board of Directors
- 47 | Executive Leadership Team
- 48 | Vision/Mission/Values

A steadfast commitment to collaboration and dedication to making connections across our member partners and stakeholders led to another successful year of operations for the Great Lakes Water Authority (GLWA), now in our fourth year.

Since standing up the organization in 2016, GLWA has demonstrated its ability to serve as a connector across the region and amongst our sector and infrastructure partners. As we progress toward our fifth anniversary in 2021, we are focused on moving this “connector philosophy” forward and becoming a *Hub Utility*.

If you Google the term, not many results pop up. However, it is a concept that is generating great interest in the water service sector. When I heard about the concept from the National Association of Clean Water Agencies, I was struck by how it seemed to be taking our collaborative operational approach to the next level.

Utilities get stronger when they are part of a solid network – when they have trusted peers to lean on, ask questions of, and collaborate with. How does that network get established? It certainly helps if a *Hub Utility* dedicates itself, at least in part, to the specific purpose of nurturing that network. I see this role as a natural fit for GLWA. We have, in fact, been performing it since we launched, bringing people together for a common purpose and a regional vision. And, GLWA is one of a few utilities working with the U.S. Environmental Protection Agency to more fully develop the concept.

Our 2019 *Year in Review* tells the story of GLWA’s many accomplishments over the last 12 months through three lenses:

In each section, I am confident you will not only see evidence of our *Hub Utility* approach come to life, but you will also see the hard work and commitment of every GLWA team member, and how we are working together to serve our member partners and region to the best of our ability.

I am so proud of what we have and will continue to achieve! I recently found a quote that I believe perfectly puts into words how I feel about the work we all do together, “Individually, we are one drop. Together, we are an ocean.”

One Water. One Team,



Sue F. McCormick
Chief Executive Officer





One Water

Our System and Operations

MEASURING SUCCESS

*“What’s important gets written.
What gets written gets measured.
What gets measured gets done!”*

— William M. Wolfson,
Chief Administrative and
Compliance Officer, GLWA

GLWA is committed to a culture of innovation and continuous improvement and embraces Effective Utility Management (EUM) and its 10 attributes to ensure effective and sustainable operations.

Since 2017, the Authority has aligned its monthly key performance indicators (KPIs), which are reported to the Board of Directors, with the EUM framework’s 10 attributes. These KPIs touch on all operational areas within GLWA and provide the operational and administrative teams with important insights into progress and challenges toward meeting their goals.

Never one to rest on its laurels, GLWA constantly reviews its KPIs, making adjustments and adding new measures where appropriate. In 2019, two new KPIs were added to the mix. One in the EUM attribute of Financial Viability and the other in the attribute of Enterprise Resiliency.

FINANCIAL VIABILITY

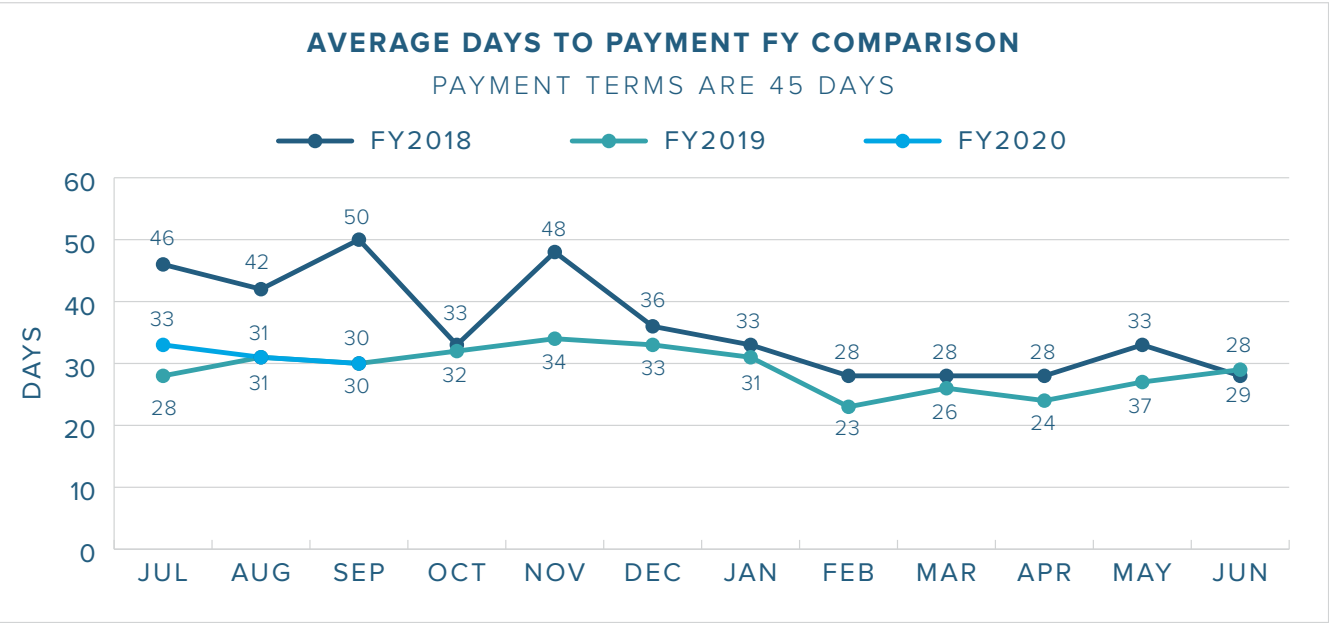
The new financial viability KPI measures the number of days that pass from the date a vendor invoice is received until it is paid. This is important on a number of levels. First, it speaks to the efficiency and effectiveness of internal business processes and cash flow management. Second, and perhaps more important, it is a direct indicator of the Authority’s commitment to its vendor partners. The more efficient GLWA is at paying its vendors, the more opportunity there is to increase the pool of those who want to work with the Authority, thereby increasing competition and potentially driving down costs. The average number of days it took to pay an invoice in 2019 was 29, which is down seven days from the previous year – and well below the standard contract term of 45 days. *Way to go, Team FSA!*

ENTERPRISE RESILIENCY

As everyone is aware, Cyber Security attacks are increasing every day. GLWA’s Chief Information Officer Jeff Small frequently reminds us that the biggest threats to our networks come from the inside, when people unknowingly click on a link in a phishing email, or perhaps insert a flash drive that has been infected with a virus. Since 2017, GLWA has provided monthly online Cyber Security training to help educate the Authority’s team members about these growing risks. A new KPI added in 2019, called Enterprise Resiliency, measures the monthly completion rate for Cyber Security training. GLWA has consistently beat the 85 percent completion goal, achieving a 98 percent completion rate in December 2019! This collective commitment helps ensure the Authority’s systems remain safe and secure.

FINANCIAL VIABILITY – DAYS TO PAY AN INVOICE

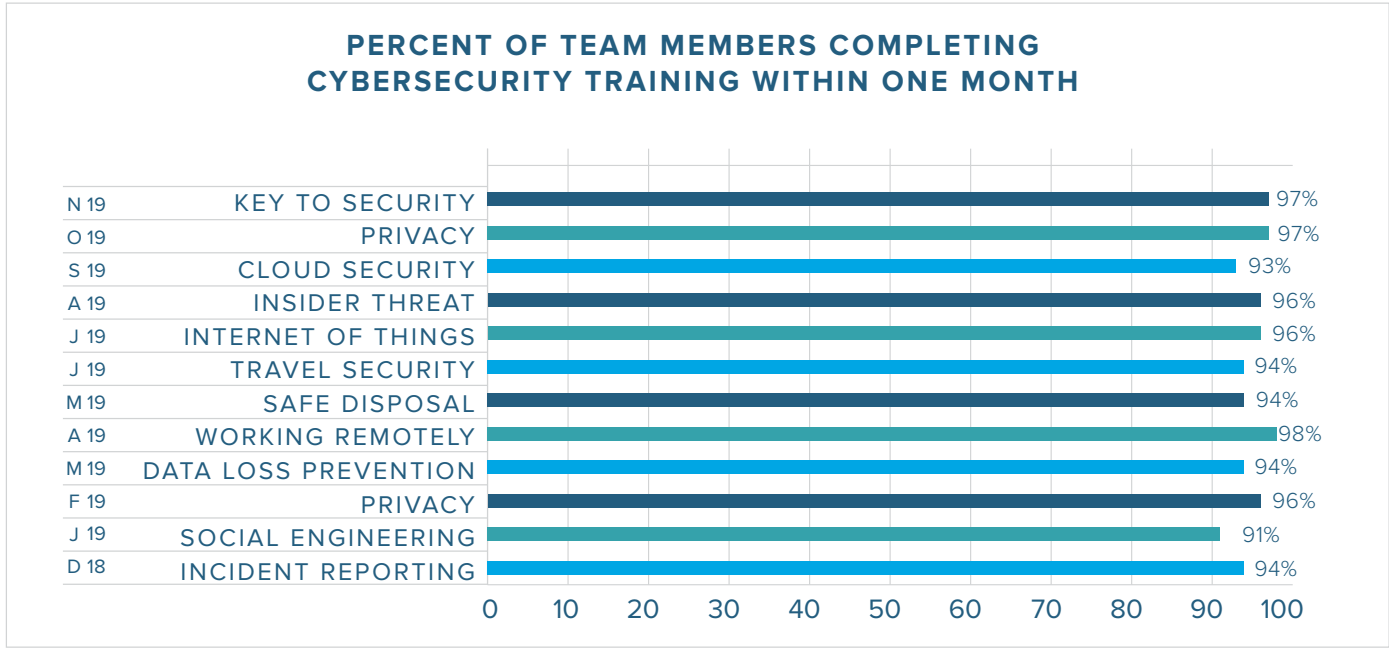
The goal is a 12-month average of < 30 days to support vendor relations and expand the early payment discount program. The number of days is calculated as the days between invoice and payment date.



- Timely vendor payment supports:
- Positive supplier relations
 - Leveraging early payment discounts
 - Effective cashflow management

Twelve-month average days to payment		
FY 2018	FY 2019	FY 2020 (rolling calendar)
36	29	29

ENTERPRISE RESILIENCY – INFORMATION TECHNOLOGY



- End users are responsible for 80% of cybersecurity breaches
- Well trained users are less likely to take action that could cause a breach

GLWA RECOGNIZED ON THE WORLD STAGE – ONE OF 49 LEADING UTILITIES OF THE WORLD

GLWA was one of five utilities from across the world recently invited to become a part of the Leading Utilities of the World (LUOW) initiative. LUOW is a network of the world's most successful, forward-thinking and innovative water and wastewater utilities.

Created to help drive performance across the service sector, the network provides LUOW utilities a platform to share ideas and challenges and to inspire innovation.

GLWA is one of just 49 utilities from across the globe to have been inaugurated into the initiative since it began in 2017. LUOW's members represent the "gold standard" of utility innovation and performance throughout the developed world's water sector. Membership is by invitation only.

In order to be accepted into the network, GLWA presented its three most outstanding innovation successes to the LUOW Advisory Board at the organization's annual American Water Summit in November 2019.

CEO Sue McCormick's presentation highlighted GLWA's achievements in:

- ◆ Network Operation via public agency collaboration to address service redundancy for the city of Flint and communities in Genesee, Lapeer and St. Clair Counties;
- ◆ Environmental Impact Improvements with the retirement of six incinerators at the Authority's Water Resource Recovery Facility, beneficial reuse of biosolids through a public-private partnership with the Biosolids Dryer Facility, as well as the completion of a Rouge River Outfall project addressing a long-term water quality improvement objective at a fraction of the cost of prior approaches; and
- ◆ Human Resource Development/Stakeholder Engagement efforts with GLWA's apprenticeship programs and One Water Institute supporting internal team members, and member partners' staff development needs.



FINANCIAL SUSTAINABILITY

FISCAL YEAR 2019 – GOALS DEFINED; GOALS ACCOMPLISHED

Fiscal Year 2019 represents GLWA's third full 12-month fiscal year of operations since the Authority's stand-up on January 1, 2016. Having three full years of financial information allows GLWA to demonstrate delivery of the high-level of financial performance that has been pledged to the Authority's member partners, investors and the region at large.

For the year ending June 30, 2019, GLWA has continued to demonstrate its commitment to the goals of reliability and transparency in reporting, as well as continuous improvement in financial operations. This commitment was evident in the results of the Financial and Single Audit for the FY19.

GLWA's financial statements received an unmodified (clean) opinion from Auditor Baker Tilly. In addition, there were no material weaknesses or significant deficiencies found in the Authority's single audit.

Not an Accountant? **WE'VE GOT YOU COVERED!**

Knowing that not everyone can read a balance sheet or understand a Comprehensive Annual Financial Report (CAFR) as easily as GLWA's talented Financial Services Team, the Authority created a series of dollar bill graphics (water system, wastewater system and the combined system) providing an easy-to-read, visual representation of how funds are spent by both percentage of each dollar, as well as cents on the dollar. Financial Services also created a series of one-page summary documents to provide a high-level overview of GLWA's budget and charges.



Charise Collins, Phyllis Walsh, Cindy Cezat, Sondra Hunsinger, Jay Oswalt, Robert Arbaugh, Katrina Ingram, Lisa Mancini, CFO/Treasurer Nicolette Bateson, and Ashlee Gravely. Not included in the photo is FSA team member Guy Belew.

BIENNIAL BUDGET AND FIVE-YEAR FINANCIAL PLAN RECEIVES NATIONAL AWARD

GLWA's Fiscal Year 2020 and Fiscal Year 2021 Budget and Five-Year Financial Plan was recognized by the Government Finance Officers Association with its Distinguished Budget Presentation Award. This award reflects the commitment of GLWA's Board of Directors, Executive Leadership Team and Financial Services Area to meeting the highest principles of transparency and communication in its budgeting document. Congrats to everyone on the Financial Planning and Analysis Team whose efforts were responsible for GLWA receiving this important honor!



“The content on this website makes information readily available to investors, as well as provides links to other pages where key operating and financial information may be found. It is just one more step in our goal of being a financially sustainable utility that is a good steward of the trust placed in us by our investors.”

— Nicolette N. Bateson, CPA
Chief Financial Officer and Treasurer, GLWA

OPERATIONAL OPTIMIZATION AND SUSTAINABILITY

“Pipes know no boundaries. GLWA and its member partner communities collectively have almost 15,000 miles of sewer conveyance pipes, all sending wastewater to the Authority’s Water Resource Recovery Facility. By managing the entire system effectively, we reduce costs for everyone, while protecting the environment.”

– Suzanne R. Coffey,
Chief Planning Officer, GLWA

**PHASE 1**
OPTIMIZE EXISTING
INFRASTRUCTURE

Cost-effective solutions to meet water quality priorities

- Reduce public health risks by maximizing the amount of wastewater flow captured in the collection system, especially during frequent, small storms
- Achieve Michigan Water Quality Standards for recreation and aquatic species protection in dry weather

**PHASE 2**
ADAPT AND EXPAND
FACILITIES

Further investment to extend water quality benefits

- Expand public health protections with added storage, sewer separation, and further maximize wastewater flow to the Water Resource Recovery Facility (WRRF)
- Achieve Michigan Water Quality Standards for recreation and aquatic species protection in wet weather

**PHASE 3**
SUSTAIN SYSTEM
PERFORMANCE

Sustainably meet wet weather regulatory requirements

- Implement emerging technologies and infrastructure maintenance programs to cost effectively meet regulatory requirements
- Invest in new treatment processes and instrumentation to maximize the use of existing facilities with real-time control

A video detailing the WWMP’s five outcomes and featuring a cross-section of member partners, steering team members and GLWA leaders has been created, which targets the whole of southeast Michigan to help tell the story of the WWMP and gain buy-in from elected officials and other stakeholders in the region.

CAPITAL IMPROVEMENT PLAN – COMMITMENT TO CONTINUOUS IMPROVEMENT

GLWA’s Capital Improvement Plan (CIP) supports the continuation of major capital asset investment in programs and projects to enhance and upgrade the Authority’s aging water and wastewater system infrastructure, as well as the overarching Centralized Service infrastructure supporting both systems.

A five-year plan, the CIP is updated annually from a project and financing perspective. Although it is considered a best-in-class document, the CIP Team is always looking for avenues to further evolve the planning document. In 2019, the improvements included:

The addition of an Integrated Master Schedule (IMS). The IMS allows the reader to view the schedule associated with all 119 CIP projects in a four-page Gantt chart, making it easy to compare how one project impacts the next;

The addition of Detroit and County GIS Maps. The maps locate each CIP project on one of two maps (city and county) and bring together project location and details (budget/scope/schedule) via their CIP number designation; and

Coordination between the CIP database and Primavera 6 Scheduling Software. This integration of the database and the software ensures alignment between the CIP and the IMS, and provides additional tools needed to measure CIP progress throughout the year.

2020-2024 CIP BY THE NUMBERS

**122**
Active or Planned
Projects

**\$852M**
Estimated Five-Year
Water Expenditure

**\$734M**
Estimated Five-Year
Wastewater Expenditure





One Team

Collaboration with Member Partners, Team Members and Other Stakeholders

MEMBER PARTNER AND STAKEHOLDER COLLABORATION

Collaboration is the backbone of GLWA's operating philosophy. Engagement through the Authority's One Water Partnership Agreement is the key to its success.

In 2019, this engagement was born out through 101 member outreach meetings, which included regular work groups, Units of Service, Sewer Shares and quarterly One Water Partnership meetings. The Authority also leveraged its resources to provide numerous special workshops and seminars on a cross-section of relevant topics.

One of the most well-attended of these special sessions was the Emergency Preparedness Best Practices Workshop in September.

Hosted by the Water Management Best Practices Work Group, the workshop's purpose was to build a shared understanding of opportunities and best practices related to emergency preparedness. Highlights of the session included:

- ◆ Department of Veterans Affairs Area Emergency Manager Kenneth Bresnan, longtime member of the Water Management Best Practices Work Group, kicked the workshop off by sharing some of his personal experiences with emergency management;
- ◆ GLWA's Critical Infrastructure Manager Walter Davis provided a detailed overview of the key aspects of emergency preparedness and some of the resources available to help be prepared;
- ◆ Planning Services Group Management Professional Madison Merzlyakov shared how to prepare for emergencies in terms of communication strategies, as well as reminded members of the various resources and tools available that have been developed through the Member Outreach program;
- ◆ Susan Knepper, of OHM Advisors, shared the importance of an updated water model; and
- ◆ Representatives from the cities of Livonia, Detroit, Farmington Hills and Macomb County shared their own unique experiences with emergencies in their communities.

Feedback collected after the workshop indicated that 97 percent of attendees "agreed" or "strongly agreed" that the workshop was a valuable use of their time, with participants expressing their appreciation for the networking opportunity, the resources provided and the lessons learned shared by community representatives. Moving forward, the Water Management Best Practices Work Group plans to host at least one similar workshop each year.



GLWA MAINTAINS STRONG LEVEL OF MEMBER PARTNER SATISFACTION IN ANNUAL ONE WATER PARTNERSHIP SCORECARD

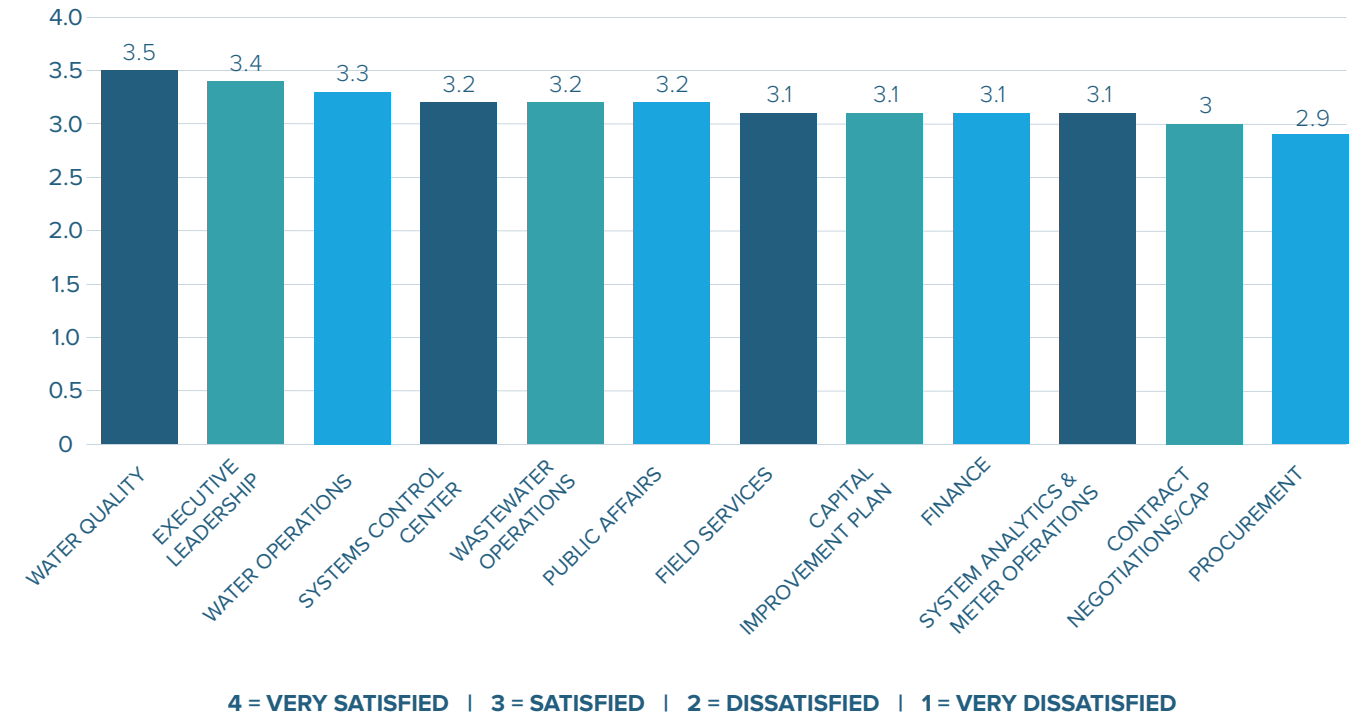
GLWA understands the importance of not only hearing feedback from its member partners, but also using those valuable insights to help evolve and improve its operations. That is why each year the Authority and its third-party member outreach facilitator, Bridgeport Consulting, conduct a One Water Partnership Scorecard survey.

Identifying year-over-year trends in member partners’ experiences working with GLWA is an important element of the scorecard process. The 2019 Scorecard results demonstrate continued positive perceptions of GLWA and its Member Outreach Program, with all question categories receiving a weighted average rating of 3.0 out of a possible 4.0.

The directional comparison from 2018 to 2019 reveals remarkable stability of members’ overall positive perceptions of GLWA. The weighted averages for more than one-third of all factors remained the same as last year. Remaining factors increased or decreased by two-tenths of a point, or less, which remains within the margin of error (± 8 percent).

A new question was introduced in 2019, intended to gauge members’ overall satisfaction with the Authority. It received a weighted average rating of 3.3 out of a possible 4.0, with 93 percent of those who shared an opinion reporting an overall satisfaction with GLWA.

HOW SATISFIED ARE YOU WITH THE FOLLOWING GLWA SERVICE AREAS?



NEW COMMUNICATIONS AND EDUCATION WORK GROUP CREATED

The Public Education, Communications and Water Quality Work Groups came together in 2019 to pilot a new, unified work group. The unification was the result of feedback that similar/complementary topics were being discussed across each of the three work groups. Members identified areas they found value in continuing in the new combined work group, including standardizing communication to create consistency across all member communities, unstructured idea sharing among members and educational materials designed for member partners to share with end users.

A number of new educational resources have already come out of the combined work group, including:

- ◆ A series of three “how to” videos related to Michigan’s new Lead and Copper Rule. The videos explain how to determine what type of service line your home has, as well as how to test your water (with lead and non-lead service lines);
- ◆ A poster/flyer that provides basic educational information on PFAS; and
- ◆ Posters and tip cards teaching people what is appropriate to flush into the wastewater system, called “The Three Ps.”

NEW MEMBER OUTREACH PORTAL

INCREASED FUNCTIONALITY AND MORE USER-FRIENDLY

GLWA's Member Outreach Team launched a new and improved Member Outreach Portal in 2019. This portal serves as the hub of information for members and allows access to all documents associated with the Member Outreach Program, as well as a calendar of events and contact information for members registered on the portal.

The goal of the portal's redesign was increased functionality and a more user-friendly experience. Some of the new features include downloadable calendar of events and display documents associated with the meeting, in addition to easier search functionality for documents, events and members.

NATIONAL RECOGNITION OF MEMBER OUTREACH PROGRAM



Planning Services Management Professional Madison Merzlyakov, CEO Sue McCormick and Chief Planning Officer Suzanne Coffey with the Utility of the Future Today recognition flag

In July, GLWA received Utility of the Future Today recognition for its outstanding partnering and engagement, recognizing what we already know:

GLWA's One Water Partnership and Member Outreach Program are exemplary models for collaboration and joint decision making.

GLWA is one of 118 utilities recognized since the program launched in 2016 by the National Association of Clean Water Agencies (NACWA), the Water Environment Federation (WEF), The Water Research Foundation (WRF) and the WaterReuse Association, with input from the U.S. Environmental Protection Agency (EPA). The Authority is also one of 21 utilities to receive this honor for the second year in a row – and for a new area of performance (previously recognized for its beneficial reuse of biosolids).

ONE WATER INSTITUTE

2019 was the first full year of the One Water Institute (OWI), GLWA's premier regional training program, which was designed to grow the operational and professional skills of GLWA team members, as well as team members from the Authority's member partner communities.



By all accounts, it was a successful year, with 860 internal team members completing 59 courses over 282 sessions. OWI received rave reviews on the new leadership course offerings of "7 Habits of Highly Effective People" and "Crucial Conversations." Team members also received training critical to maintaining a safe work environment from courses such as "Confined Spaces," and a 40-hour course titled, "Hazardous Waste Operations and Emergency Response."

The Authority is pleased that its member partner communities have also taken advantage of OWI course offerings. Member partner participation has been centered around safety classes, including "First Aid/CPR" and "LockOut/TagOut."

To increase accessibility, OWI also rolled out 360 Water, a water and wastewater sector-based online continuing education program. There were 60 GLWA team members that took 54 unique courses. In addition, 26 team members from 15 member partner communities took advantage of 360 Water. Those members' staff completed 51 unique courses with a total of 145 courses being completed. All 360 Water courses are eligible for continuing education credits.

WRAP

GLWA’s WRAP, or Water Residential Assistance Program, continues to support the Authority’s strategic commitment to water affordability through payment assistance and conservation education.

Since its inception in March 2016, 73 percent of GLWA member communities have opted-in to WRAP, a first-of-its-kind program in Michigan and one of few sustainable assistance plans in the country. Over the last three years, nearly 19,000 households across GLWA’s service area have enrolled in WRAP, with Detroit and Flint residents making up approximately 70 percent of all enrollments.

In 2019, GLWA’s Board of Directors approved the transfer of \$1.2 million in additional WRAP funding to the cities of Detroit and Flint. Of the \$1.2 million transferred, \$794,400 was directed to Detroit and \$427,755 to Flint for conservation and direct assistance.

To ensure the program is structured in a way that maximizes assistance to member communities, the Board also authorized the following changes to the program:

- 1**

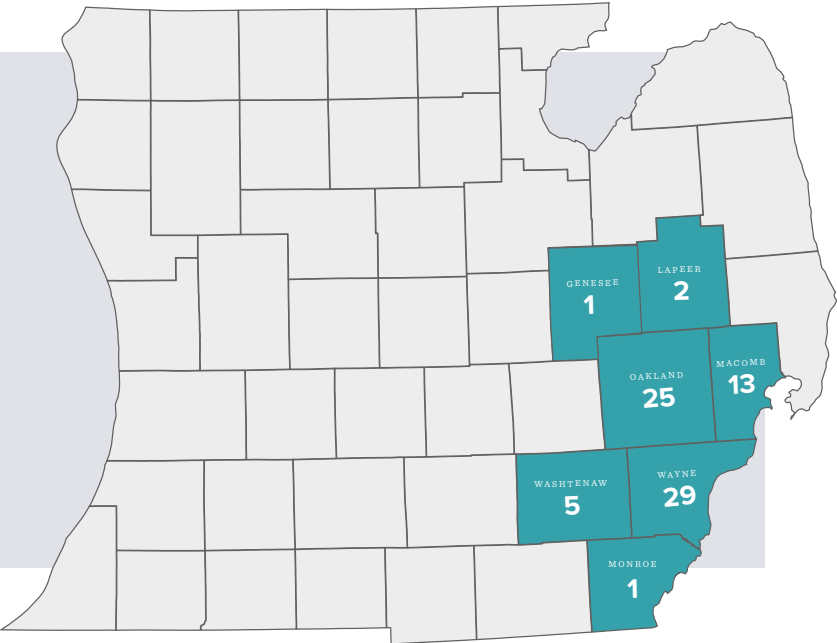
Customers may receive a bill credit of up to \$350 toward any arrearages they might have in the first month of their enrollment, whereas previously, customers had to remain current on their payments for six months;
- 2**

Qualified senior citizens and the disabled who have successfully completed the 24-month program are now eligible to continue receiving WRAP’s \$25 per month bill assistance credit. They must remain current on their bills and reapply each year;
- 3**

Renters are now eligible to receive a Water Smart water-saving materials kit, which includes a cold-water catcher, shower timer, dye tablets to check toilets for leaks, toilet flapper, toilet tank bank, faucet aerators, high-efficiency shower head and Teflon tape to seal pipe threads when installing aerators; and
- 4**

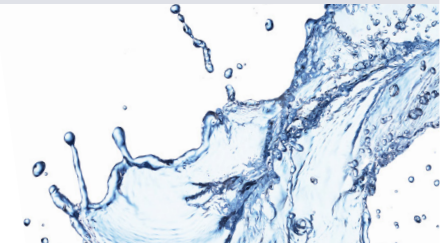
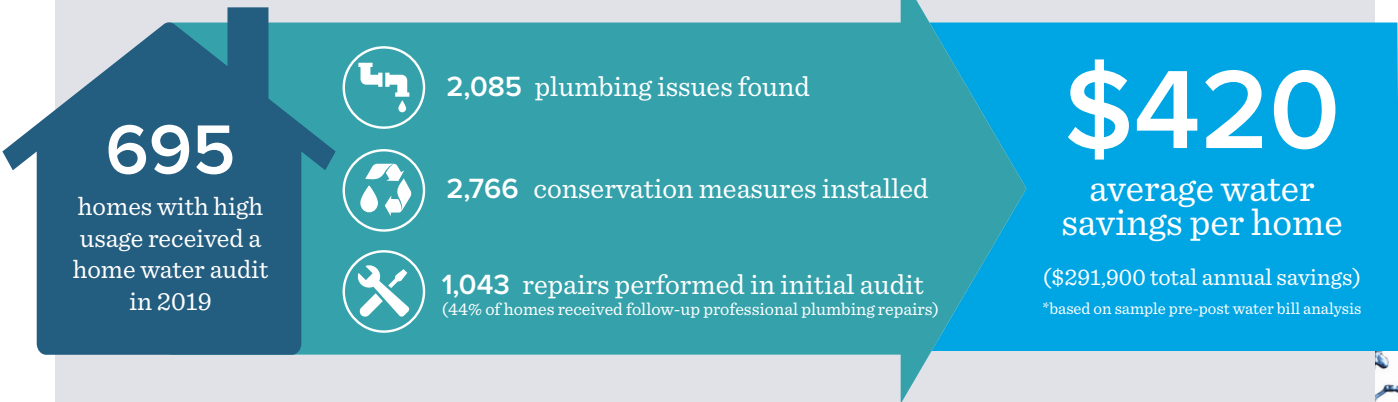
Program administrator Wayne Metropolitan Community Action Agency is now providing non-traditional hours and telephonic appointments to help improve access to services.

AS OF DECEMBER 31, 2019,
76 OF 104
ELIGIBLE COMMUNITIES
OPTED-IN TO THE PROGRAM



2019 WATER CONSERVATION IMPACT

WRAP’s water conservation helps the root cause of a high water bill through workshops, home water audits and professional plumbing services.



“The WRAP program has made our lives much more manageable. As a single parent of three children, I appreciate not having to worry that my water will be turned off. The assistance helps me to budget my bills better. I definitely appreciate the WRAP program.”

RESIDENT OF FLINT ENROLLED IN WRAP

“The assistance that my family and I received for our past due and subsequent water bills through the WRAP program was an essential tool helping to pave a pathway to self-sufficiency and empowerment.”

RESIDENT OF DETROIT ENROLLED IN WRAP

“I live on a fixed, limited income, and was recently diagnosed with cancer and had to deal with out-of-pocket medical expenses. Assistance from the WRAP program allowed me to keep my water on and be able to pay for food and other critical bills including my unexpected medical expenses. I hope the program continues as long as it can to help others like me.”

RESIDENT OF MACOMB COUNTY ENROLLED IN WRAP



COMMITMENT TO FOUR PERCENT REVENUE REQUIREMENT PROMISE

In March 2019, the GLWA Board of Directors adopted a budget for Fiscal Year 2020, which began on July 1, 2019. This was the earliest that the Board has approved budget and charges, which assists member partner communities in preparing their annual budgets and rates.

The FY20 budget included an annual increase of 2.1 percent, overachieving on GLWA's commitment of a four percent maximum increase (as agreed upon in the Authority's foundational documents). The budget delivered on several key strategic goals:

Advancing the path toward long-term stability and equity in the services charges model;

Focusing annual operations and maintenance resources into activities that support long-term sustainability; and

Driving asset management-focused strategic investment in the regional system.

An additional measure of GLWA's success is delivering budgetary control in comparison to peer utilities. Since its inception, GLWA charge increases are less than half of that indicated for its peers in a Utility Rate Index published in 2019 by Black & Veatch. Further, GLWA charge increases are closer to inflationary indices than peer utility averages. This is notable for a highly capital and maintenance-intensive enterprise.

FAIR AND EQUITABLE CHARGE SETTING

SEWER SHARES METHODOLOGY REVIEW

GLWA spent a significant amount of time in 2019 working with its member partners on an update to the wastewater cost allocation method known as Sewer Shares. The method requires performing a number of highly-technical analyses that result in a percentage, or "Share," of cost for each member partner. Periodically, inputs to the method are updated; this was the case in 2019. However, instead of just updating the inputs, the Authority took a close look at the method itself. An outside consultant with broad cost-allocation experience was engaged to listen to member partners' ideas and offer suggestions for potential changes.

In both large and small group meetings, many alternative approaches were considered, and an extraordinary amount of detailed data was analyzed. With that very detailed look, the principles of *simplification and stability* emerged as the primary drivers of a future revised Sewer Shares method. As the groups approached convergence on a recommended series of changes, they began to realize future project recommendations were emerging from the Wastewater Master Plan Project, and many of them didn't fit the typical brick and mortar solutions that were the mainstay of previous master plan recommendations.

Given the cost allocation for this new suite of projects is yet to be developed, and in harmony with the Sewer Shares method, GLWA and its member partners made the decision to hold off on a final recommendation for any Sewer Share method changes for Fiscal Year 2020 charges. A single comprehensive recommendation will be made in calendar year 2020. Work on this recommendation is underway and should be completed by mid-2020 to be fully considered for FY22 charges.

ONE WATER ONE TEAM

APPRENTICESHIP PROGRAM CONTINUES TO GROW

GLWA's Apprenticeship Program was created in 2017 with the objective to close a gap in the availability of highly-trained talent to adequately fill skilled trade roles imperative to its operations.

In the two years since its inception, two apprenticeship programs have launched. The inaugural program was designed to hire and train Electrical Instrumentation Control Technicians (EICT-I). The second, launched a year later, is focused on developing Maintenance Technicians.

The first two cohorts, comprised of a total of 20 EICT-I apprentices, will graduate in early 2020, which is a 100 percent completion rate! The four Maintenance Technician apprentices are working hard in the first year of their program, having completed their second rotation assignment with a 75 percent completion rate.



Next up is a five-year apprenticeship to train and hire Electrical Instrumentation Control Technicians-E (electricians). The apprenticeship, which is an educational partnership with the International Brotherhood of Electrical Workers (IBEW), will officially launch in 2020.

“GLWA has committed to launching one new U.S. Department of Labor apprenticeship program per year until the system’s remaining needs are met in order to ensure a trained and sustainable workforce, as well as to balance an aging workforce.”

– Terri Tabor Conerway
Chief Organizational Development Officer, GLWA

GLWA's Apprenticeship Program: An Interesting Anecdote

The number of women who have expressed interest and gone through the qualification process in the first two years of the Apprenticeship Program is approximately 18 percent, which is helping GLWA in its mission to create and support an overall diverse workforce.

MANUFACTURING DAY – RECRUITING YOUNG PEOPLE INTO THE WATER SECTOR

In addition to its commitment to building a robust apprenticeship program, GLWA makes recruitment for future employees a priority. One of the unique ways it has begun planting the seed about careers in the water sector is by participating in Manufacturing Day, which occurs annually on the first Friday of October. On Manufacturing Day, students take tours of various manufacturing and STEM-related businesses and institutions to get new ideas about their futures.

On October 4, 2019, 40 students from Chandler Park Academy in Harper Woods, Michigan, were among those who participated in a tour of GLWA's Water Works Park Water Treatment Facility (WWP). The students heard from chemists, engineers, technicians, and the manager of WWP about the broad cross-section of careers available in the water sector before going on a tour of the water treatment facility, where they were able to see how GLWA team members turn raw/untreated water into drinking water of unquestionable quality.

“I believe it is important for GLWA to be a part of Manufacturing Day because it brings career awareness to our youth. It sheds light on the other career opportunities for students besides what they see in their communities and on TV. Manufacturing Day is a career pipeline for high school students, making them aware of different career paths at GLWA. One of the best things about the day is that students get to hear real life career stories from our team members. Hopefully these stories will inspire some of the students to make GLWA the choice for their career path.”

– Andrae Savage
WWP Plant Manager



ONE WATER ONE TEAM MAKING BIG WAVES

The One Water *One Team* continues to make big waves in the water service sector and their communities. GLWA is proud of its team members!



Michigan Women in Finance Board of Directors

Alicia Haskin, Public Finance
Management Professional –
Intergovernmental Relations



MI-AWWA Operator Meritorious Award

LaShone Bedford, Water Operations
Management Professional



Crain's Detroit Business Notable Women in Law

Laurie Koester, Associate General Counsel,
and CEO Sue McCormick



2019 National Public-Private Partnership Award for Infrastructure Project

GLWA's Biosolids Drying Facility:
Navid Mehran, Philip Kora, Majid Khan,
Sanjay Patel and CEO Sue McCormick



Michigan Public Purchasing Officers Association Board of Directors

Tina Clinkscales, Procurement
Management Professional



MI-AWWA Professional Excellence Award

Christopher Steary, Lake Huron Water
Treatment Plant Manager



Lawyer of Distinction by *Lawyers of Distinction*

Lavonda Jackson, Associate
General Counsel



Certification of Excellence – Investment Policy, Association of Public Treasurers of the U.S. and Canada

GLWA Treasury Team: Katlyn Butzin,
Deirdre Henry, Edward Vanneste



Michigan Government Management Information Sciences Organization (MI-GMIS) IT Professional of the Year

Jeff Small, Chief Information Officer



Crain's Detroit Business Notable Women in Human Resources

Terri Tabor Conerway, Chief
Organizational Development
Officer, and CEO Sue McCormick



HAZMAT Security Specialists Carlos Cuevas and Colton Hayes graduated from the Schoolcraft College Fire Academy



AWWA Board of Directors Director-at-Large

Cheryl Porter, Chief Operating Officer,
Water & Field Services; AWWA Michigan
Section Board of Trustees



President and State Representative, Michigan Government Finance Officers Association

Kim Garland, Manager, FSA Reporting
& Compliance



Co-Chair of MI CLEAR Steering Committee

Majid Khan, Director of
Wastewater & CSO Operations



Every Chief and Director-level team member has spoken at a regional or national water or wastewater service sector conference.

One Mission

Water of Unquestionable
Quality; Effective and
Efficient Services

WATER QUALITY

A top priority for GLWA is the protection of public health through the delivery of water of unquestionable quality. Through its team of certified chemists, engineers, operators and other team members, the Authority is committed to supporting healthy communities by not only meeting, but surpassing, current state and federal safe drinking water regulations

WATER WORKS PARK WATER WINS 2019 DIRECTORS AWARD FOR WATER TREATMENT FACILITY PERFORMANCE

Water Works Park (WWP) has received the “2019 Directors Award for Water Treatment” from the Partnership for Safe Water (PSW), a program developed by the EPA, American Water Works Association (AWWA), and associated partner organizations to guide water systems toward improving water quality by optimizing system operations.



WWP Plant Manager Andrae Savage and Water and Field Services Manager Balvinder Sehgal accept the PSW award.

GLWA was one of six select groups in the nation honored in this category for its long-term commitment to innovation, outstanding performance achieved and environment and public-health protection. The PSW awards program recognizes utilities who demonstrate an outstanding commitment to delivering superior-quality drinking water to customers, directly aligning with the Authority’s commitment to providing water of unquestionable quality.

“We are honored to have another GLWA facility recognized by the Partnership for Safe Water. We continuously aim to surpass water quality standards and serve our communities with excellence. The 2019 Directors Award for Water Treatment is evidence of our mission to utilize best practices in the treatment of drinking water, while promoting healthy communities and economic growth.”

— Cheryl Porter,
Chief Operating Officer, Water & Field Services, GLWA

WWP, the newest water treatment plant in the regional system, received this honor for successfully maintaining the program’s high standards of performance. It has the ability to produce up to 240 million gallons of water of unquestionable quality per day. GLWA’s innovative technologies have made the facility capable of both expanding and downsizing based on future water usage demand.

In 2016, three GLWA facilities – Lake Huron, Northeast and Southwest – received this important designation from PSW. The Authority was honored to receive such high recognition and remains committed to leading the way in water and wastewater services.

MONITORING FOR EMERGING CONTAMINANTS

PFAS – WATER SYSTEM

GLWA understands the importance of monitoring for emerging contaminants, including Per- and Polyfluoroalkyl Substances, also known as PFAS. Testing for PFAS since 2009 (including in its 2019 round of drinking water system screenings), GLWA is pleased to assure the public that these chemicals were not detected in its drinking water. This means PFAS levels were below that which is measurable under the EPA's standard analytical methodology for the detection of the compounds.

In a time of continued public concern, GLWA can confidently assure its members partners, as well as the entire region, that its water remains of unquestionable quality.

MICHIGAN'S LEAD AND COPPER RULE

The state of Michigan enacting changes to its Lead and Copper Rule (LCR) in June 2018 allowed GLWA to leverage its knowledge and resources to assist its member partners in understanding the changes and how they impact the regional system, as well as individual communities. For example, in October, GLWA hosted a public Lead and Copper Community Forum to advise on communications related to lead in drinking water.

Communities in Michigan began conducting their first rounds of testing in 2018 by using a new sampling protocol adopted in the revised LCR. The new sampling protocol added an additional sample that represents water that has remained static in lead service lines to homes for a minimum of six hours. For a number of local systems, the results have seen higher lead and copper numbers than in prior sampling protocols.

PFAS – WASTEWATER SYSTEM

GLWA is a leading utility in the state of Michigan, as well as the United States, in monitoring for PFAS in the waste stream. As a part of its Industrial Pretreatment Program (IPP) responsibilities, the Authority has taken a proactive approach to working with its point source industrial dischargers to remove PFAS in advance of it entering the wastewater system.

In conjunction with this proactive approach, the Authority recently updated its IPP rules, which were developed in coordination with a stakeholder group that included representatives from local municipalities, the environmental sector, Chambers of Commerce and commercial industry.

It is important to note that the water quality has not degraded – the recent results are due to the revised testing protocol. GLWA continues to have water of unquestionable quality and as the provider of water treatment in southeast Michigan, it remains committed to surpassing and overachieving all regulatory standards. Further, the Authority tests its water multiple times each day, significantly exceeding state and federal testing requirements.

GLWA PROACTIVELY BEGINS NEW CORROSION CONTROL OPTIMIZATION STUDY

The Authority remains committed to surpassing and overachieving all regulatory standards in order to ensure public health and safety and deliver the highest quality water.

GLWA's current corrosion control treatment was determined by a 1994 corrosion control study and has been extremely effective at reducing lead concentrations in the system. Subsequent operating parameters were also established by the Michigan Department of Environmental Quality (now called the Michigan Department of Environment, Great Lakes and Energy) to which GLWA adheres. The Authority is in the process of voluntarily completing an updated Corrosion Control Optimization Study to ensure that its corrosion control treatment is optimized for the regional system. This study is a proactive measure to guarantee that GLWA is prepared for changes in federal and state regulations concerning lead and copper. GLWA has partnered with corrosion control study experts at Arcadis to execute this study successfully.

The study will involve the use of a special testing rig called a pipe loop to help choose which corrosion control treatment works best for the regional water system. Pipe loop rigs are a way to test out different corrosion control treatments without affecting the water that goes to consumers. Pipes containing lead and copper are placed in these rigs and are hooked up to flowing water. This allows GLWA to test different chemical treatments and collect data to see how effective the different treatments are at reducing lead and copper in the water flowing through the pipe loops. The extensive study is expected to take four years to complete.



GLWA SURPASSES STATE GOAL OF REDUCING PHOSPHORUS LEVELS BY 40 PERCENT BY 2025

GLWA has reached a milestone achievement: surpassing federal and state regulators' goal of reaching a 40 percent reduction in phosphorus levels by 2025, six years ahead of its deadline.

The Authority has not only met the federal and state requirements, it has been able to reduce its phosphorus levels by approximately 60 percent in treated and discharged waters from its Water Resource Recovery Facility. It is the first treatment facility along the tributary to Lake Erie to achieve this milestone.

“As with many of our optimization initiatives, we strive to provide the highest quality treatment through careful management of our treatment processes and implementation of innovative solutions. The reduction in phosphorus that we have been able to achieve in recent years is a testament to the dedication and commitment of GLWA team members that operate our Water Resource Recovery Facility.”

– Navid Mehram
Chief Operating Officer, Wastewater Operating Services, GLWA

As part of its dedication to creating a cleaner community, GLWA also partnered with the Michigan Cleaner Lake Erie through Action and Research (MI CLEAR) in response to the ongoing algal blooms in Lake Erie. The partners are working together to examine multiple factors of algal formation in order to develop a holistic solution.

Presently, high phosphorus levels in Lake Erie are the leading cause for continued meetings among Governors in the Great Lakes region, as well as Ontario's Premier. In order to halt harmful algae blooms, GLWA has been a prime participant in reducing phosphorus run-off.

“With our regulatory phosphorus reduction goals met, we are focusing on understanding and mitigating nutrient contribution to the Western Lake Erie basin through targeted research. This is all part of GLWA's commitment to sustainable and environmentally conscious operations,” said Mehram.

The Authority is also participating in the Detroit River Watershed Project, which involves quantifying phosphorus loadings entering the watershed that are impacting algae growth. Partnering researchers will determine how the amounts of phosphorus in the St. Clair River, Lake St. Clair and the Detroit River – all part of the Detroit River Watershed – contribute to Lake Erie.

SYSTEM RESILIENCY**NEW ROUGE RIVER OUTFALL DISINFECTION FACILITY ENSURES ALL DISCHARGES FROM WRRF INTO ROUGE RIVER ARE TREATED AND DISINFECTED**

The sustainability of the regional system is one of GLWA's top priorities. The use of best practices and innovative technologies is central to the Authority's ability to ensure that regional system functions are at an optimal level now, and in the future.

In March, GLWA successfully launched its Rouge River Outfall Disinfection Facility (RRO). The new RRO ensures every drop of water discharged into the Rouge River from the Water Resource Recovery Facility (WRRF) is entirely screened, treated and disinfected – improving water quality in the river and helping to protect public health.

The operation of this new facility addresses what had been GLWA's single largest annual point of discharge of treated, but non-disinfected wet weather flows – ensuring disinfection of treated water and killing present bacteria before they are discharged into the river. Prior to the new RRO's operation, between 4,000 and 15,000 million gallons of treated water had been discharged into the Rouge River without disinfection annually.

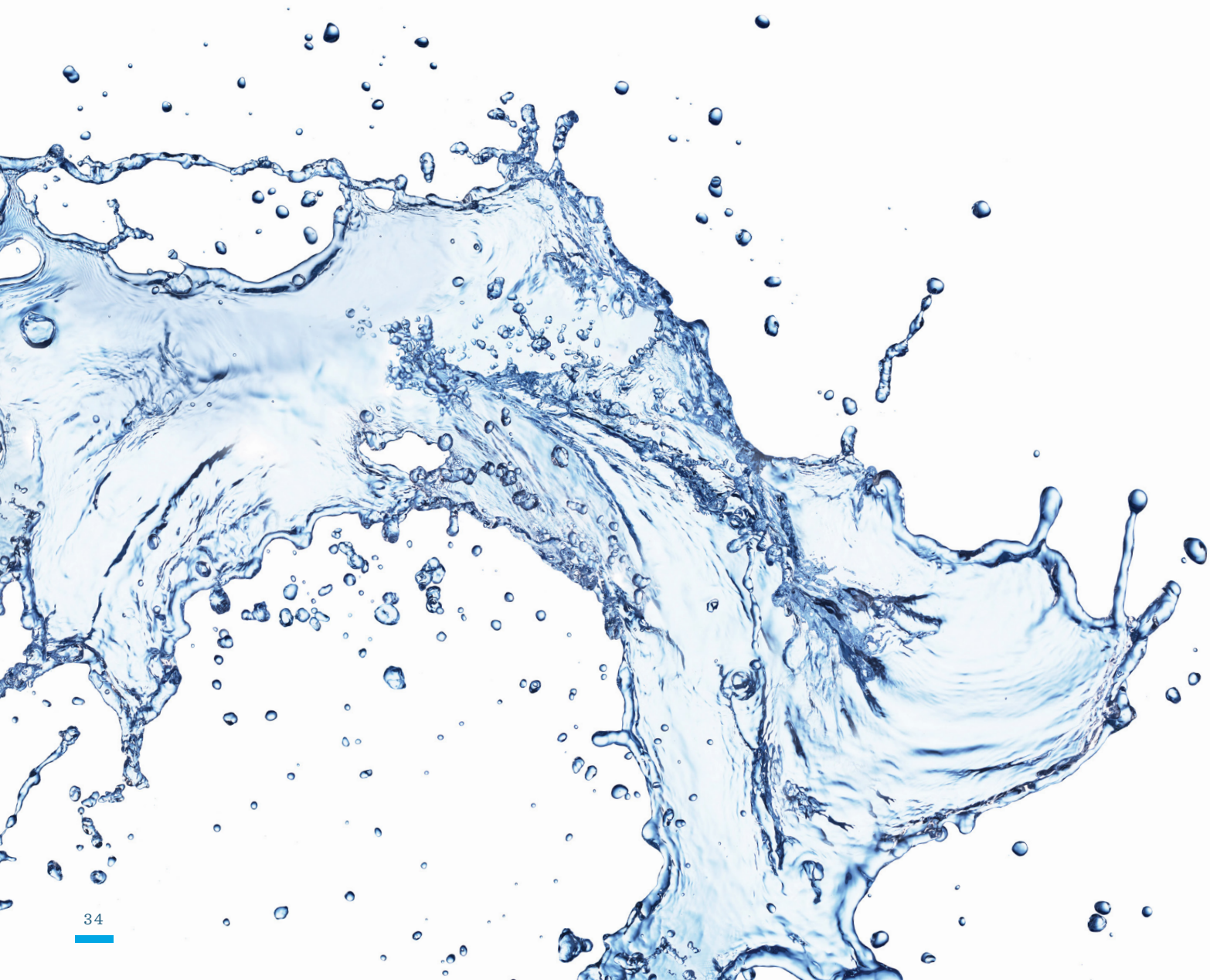
The RRO was originally scoped at approximately \$300 million in Fiscal Year 2010. This project is an achievement that means GLWA found an effective, environmentally-friendly solution, one that uses existing infrastructure and saves GLWA and its member partners more than \$250 million in potential costs.

The disinfection agent used in the RRO is sodium hypochlorite (commonly known as bleach). However, before the discharge is released into the river, any residual of the sodium hypochlorite will be removed by a dose of sodium bisulfite, which is non-harmful to the environment.

WASTEWATER SYSTEM DASHBOARDS FOR MEMBER PARTNERS PROVIDES FOR REAL-TIME COORDINATION TO OPTIMIZE SYSTEM OPERATIONS DURING AND AFTER RAIN

As part of GLWA's Wastewater Master Plan's Regional Operating Plan (ROP), the Authority has begun deploying web-based dashboards that allow its wastewater member partners to see levels in the sewers downstream of their connections and at the Water Resource Recovery Facility. This allows operators to look at the system regionally and make prudent operational decisions where they have flexibility. For example, when a member partner has a combined sewer overflow basin that is full, they can look downstream and see if the sewers have available capacity for them to de-water without any detrimental impact, such as increased overflows in the regional system. This example is the first and most obvious step toward optimization.

The vision of the ROP is that during rain events, operators can call each other to discuss potential operational changes and have eyes on each other's systems. This will encourage real-time troubleshooting and optimization of GLWA and member partners' wastewater conveyance systems.



STRATEGIC ASSET MANAGEMENT PLAN

GLWA will be a leader in infrastructure management by making decisions informed by risk, regional needs and lifecycle considerations.

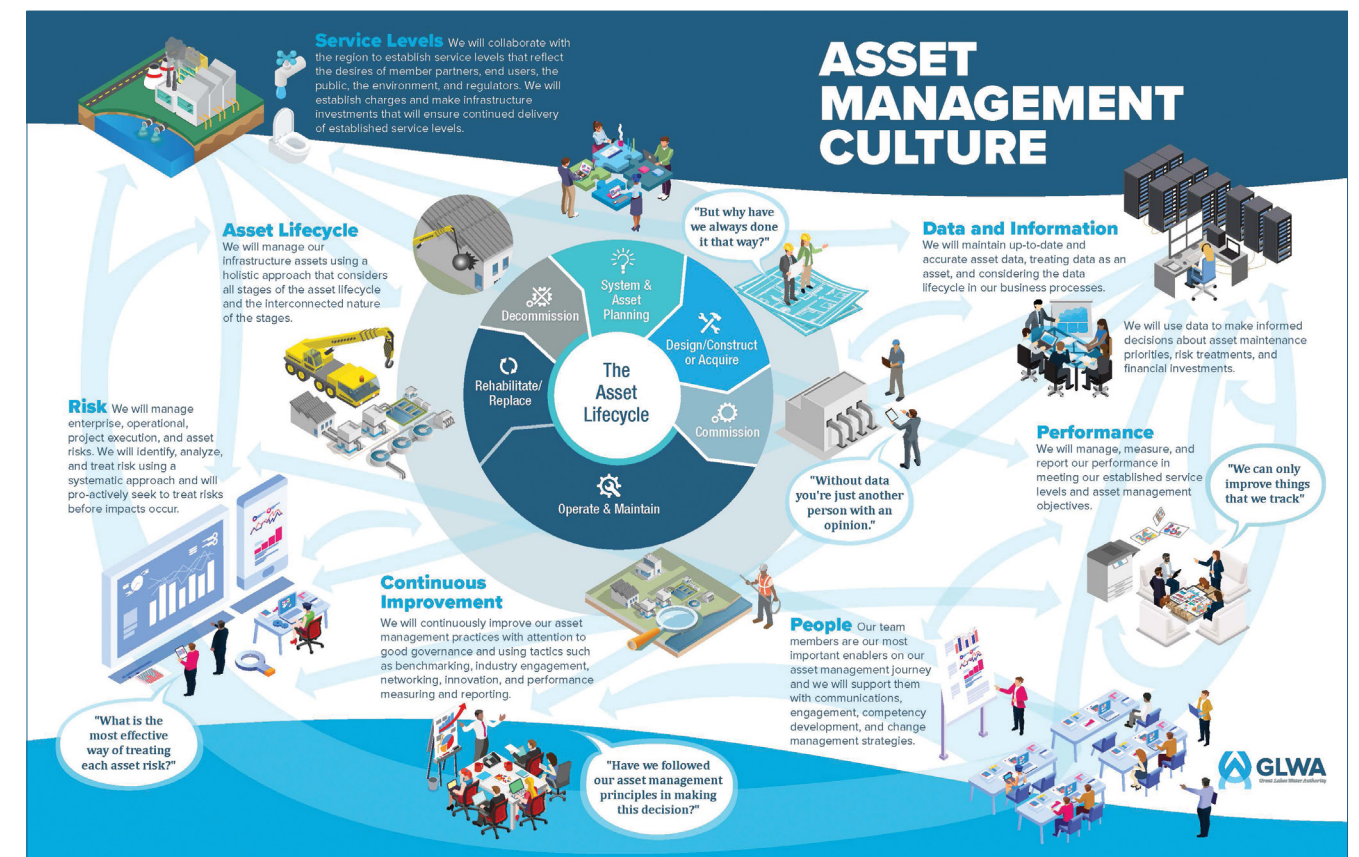
GLWA'S ASSET MANAGEMENT VISION

At GLWA, assets exist for one reason: to allow the organization to achieve its core purpose of providing water and wastewater services to southeast Michigan. As an infrastructure-intensive organization, the Authority has substantial investments in physical assets, some of which were placed in the ground more than 100 years ago. Therefore, GLWA must make smart decisions to determine the right time and the best approach to manage aging assets to maintain and sustain reliable service. GLWA must also realize the maximum value from its portfolio through the lifecycle of the assets.

In 2019, GLWA launched its Strategic Asset Management Plan (SAMP), which describes the drivers for asset management and links organizational context with the Authority's asset management strategy and objectives.

A key feature of the SAMP was the development of an Asset Management Policy, which provides the framework and principles by which GLWA will ensure sound stewardship of its assets to deliver established service levels in the most effective and efficient manner, while maintaining compliance with regulations.

Key to the success of GLWA's asset management vision moving forward will be the adoption of an asset management culture.





Panelists came from as far away as New Zealand and the United Kingdom, as well as Arizona, Minneapolis and Washington, D.C.

INTERNATIONAL ASSET MANAGEMENT LEADERS VISIT GLWA FOR BLUE RIBBON PANEL

Understanding that GLWA is at the beginning of its asset management journey, the Authority's goal is to learn from those utilities who have been leading practitioners in the discipline. In May, GLWA's Asset Management Group hosted a Blue Ribbon Panel of experts from different organizations across the United States and around the world to share their best, sustainable practices and insightful lessons learned on their asset management journey.

INNOVATION

GLWA ADDS DIRECTOR OF ENERGY, RESEARCH & INNOVATION

This year GLWA expanded its team and innovation efforts with the addition of John Norton, Ph.D., P.E., LEED AP, as the Director of Energy, Research and Innovation – a unique role for the service sector combining research and energy management.

With more than 25 years of experience, John's professional and academic expertise helps GLWA explore issues and opportunities facing the water service sector and identify energy efficiencies across its operations.

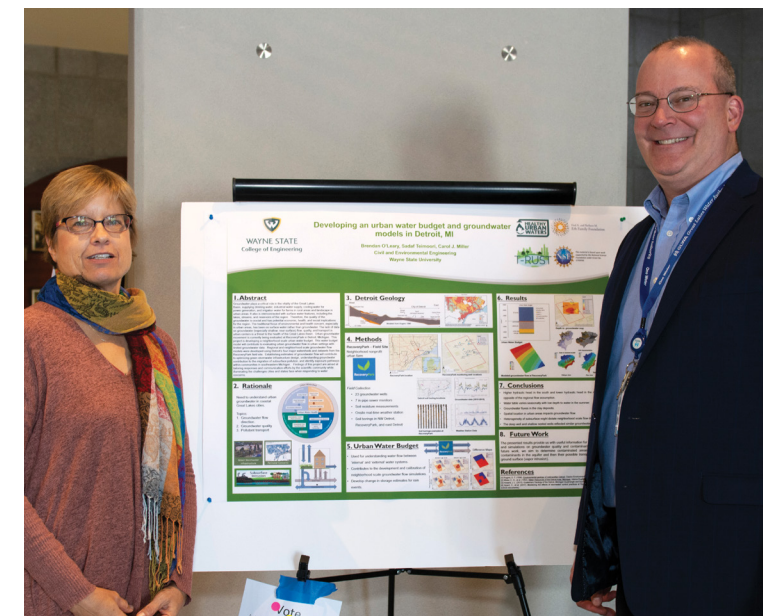
John helps evaluate optimizing operations by working with team members, member partners and external groups, including research and academic partners like the Water Research Foundation, Wayne State University, University of Michigan and Michigan State University.

INNOVATION AND ENERGY EFFICIENCY PROJECTS

The Energy, Research and Innovation team is undergoing a comprehensive effort to 1) meter and measure energy use at all major facilities, and 2) validate energy billing versus GLWA's energy usage. Smart meters have been installed at most of the Authority's wastewater facilities and approximately half of the potable water facilities. The smart meter data is used to investigate power quality issues and to develop understanding of how the Authority can operate its facilities most efficiently. These efforts allow GLWA to refine its cost-savings assessment and overall energy reduction efforts.

Other innovation, research and energy initiatives include:

- ◆ The comprehensive assessment of GLWA's water distribution system pumping volumes and costs to benchmark an optimal pumping scheme to help determine the feasibility of real-time pump system optimization;
- ◆ Upgrading GLWA's facilities with high-performance LED lights to provide improved workspace lighting with reduced energy consumption; and
- ◆ Optimizing the use of GLWA's existing Pilot Plant using the unique facilities to establish and grow collaborative opportunities with academic partners.



Wayne State University Professor Carol Miller and John Norton at the Authority's Symposium on Innovation and Water Quality.

VENDOR OUTREACH AND ENGAGEMENT

GLWA CONTINUES TO LEARN FROM ITS VENDOR COMMUNITY

Expanding the base of the vendor community is a top priority for GLWA. To assist in this effort, the Authority hosted its fourth annual Vendor Outreach event: Doing Business with GLWA, in May 2019. Focused on building relationships between GLWA and its growing vendor community, the event was attended by 240 individuals representing 193 companies across a diverse range of consultants, suppliers, and contractors. This is a 15 percent increase in the number of companies represented over the previous year.



Sonya Collins, GLWA Interim Director of Procurement, talks with a vendor at the 2019 outreach event.

This year's theme had a strong focus on increasing networking and engaging in discussions with the GLWA team, which was a direct result of feedback from the 2018 event.

The day began with a networking breakfast, followed by a general session covering a variety of topics suggested by previous attendees including approaches to responding to solicitations, an introduction to GLWA's new Capital Program Delivery Initiative and its procurement opportunities, as well as an update on the Authority's Small Business Initiative. There were also interactive breakout sessions featuring expert panels on construction, consulting, IT and other commodities. Additionally, a new Resource and Networking Room was added to give vendors the opportunity to talk one-on-one with GLWA experts.

“GLWA’s Vendor Outreach event is very informative, and I appreciate the fact that they are trying to be inclusive. The Authority is really interested in engaging businesses both large and small, and finding ways for companies to work together from a collaborative perspective. I feel like they are giving everyone an opportunity to engage.”

— Wendy Lewis
President and CEO, Superior Innovative Solutions

SMALL BUSINESS INITIATIVE GAINING MOMENTUM

Launched in April 2018, the Small Business Initiative (SBI) was created to better engage small, minority-owned, and/or women-owned businesses with GLWA's procurement. The program gained great momentum in 2019.

The Vendor Outreach team attended Meet the Buyer events, including those hosted by the Schoolcraft, Macomb, and Flint/Genesee County Procurement Technical Assistance Centers (PTAC). Other vendor recruiting included meeting with individual associations such as the Michigan Minority Contractors' Association and the Detroit Chapter of the National Association of Black Women in Construction. Finally, GLWA team members held a half-day training workshop at the Schoolcraft PTAC on how to do business with GLWA, and presentations were made at MDOT's Bonding & Education Program.

GLWA's January 2019 SBI Advisory Meeting hosted nearly 100 participants, the largest attendance of the Advisory meetings as of that date. The Authority tried something different for small businesses during the August SBI Advisory Meeting – six GLWA prime vendors presented “Learn How to Sub-Contract with GLWA Vendors.” This was so successful that it is being made a regular feature of future SBI Advisory meetings.



GLWA Owners Representative Ian Thompson presents at an SBI Advisory meeting.

WHAT'S NEXT FOR GLWA

“Great things in business are never done by one person; they are done by a team of people.”

– Steve Jobs

2019 was an amazing year for GLWA. While much was accomplished, the Authority is looking squarely to the future and what can be achieved on behalf of member partners and the region. GLWA and its Board of Directors, being chaired in 2020 by Abe Munfakh, are committed to:

- ◆ Serving as a connector across the region and amongst sector and infrastructure partners through a commitment to becoming a *Hub Utility*;
- ◆ Moving to implementation of the Wastewater Master Plan findings/recommendations by executing the lowest cost, highest benefit water quality improvements identified;
- ◆ Continuing efforts to manage equity and volatility in charges for the next year and beyond; continuing to improve affordability efforts in the region by enhancing the WRAP program;
- ◆ Continuing to ensure that member partners' voices are heard in the discussion of issues critical to the water and wastewater sectors through GLWA's leadership in regional, state, and national organizations and associations;
- ◆ Building operational capacity through the continued development of apprenticeships and other structured training and development programs;
- ◆ Ensuring drinking water quality through a five-year, voluntary and proactive corrosion control study to guarantee that GLWA is prepared for changes in federal and state regulations concerning lead and copper; and
- ◆ Providing GLWA member partners with their annual water and wastewater charges in a timely, transparent manner in the collaborative spirit of the One Water Partnership Agreement and the Member Partner Scorecard.

WATER SYSTEM

5 
Treatment Plants


3.8 MILLION
PEOPLE SERVED

 **816** miles of
transmission main 

 **3** Water
Intakes 

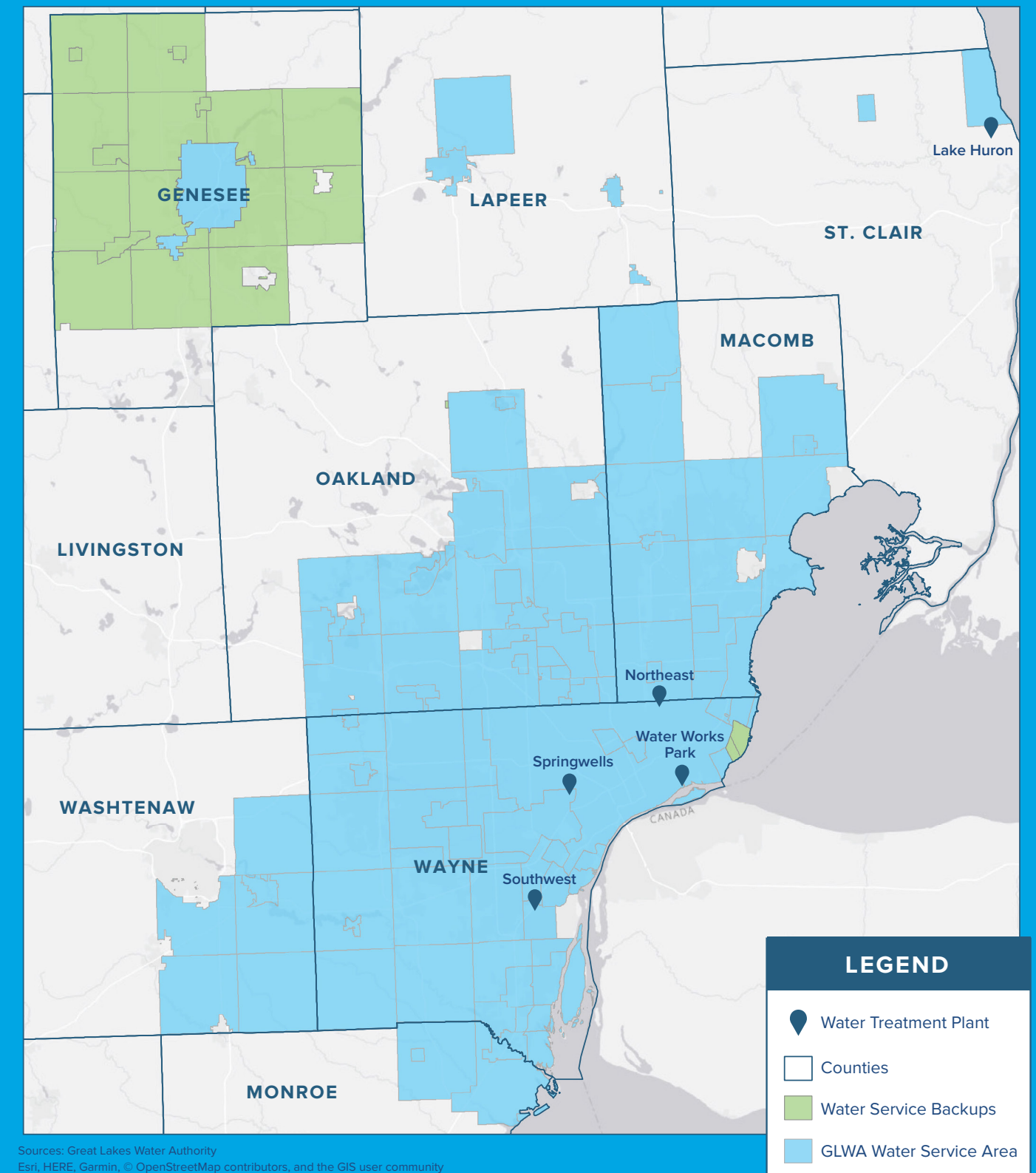
 **88** Member Partners
across **112** communities

 Treatment capacity of **1,720**
million gallons per day 

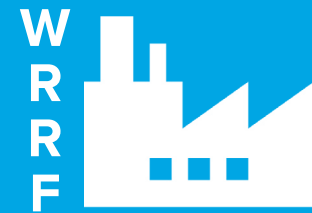
19 BOOSTER
PUMP STATIONS 

 **1,698 SQ. MILE**
service area

GLWA WATER SERVICE AREA (INCLUDING BACKUPS)



WASTEWATER SYSTEM



The **largest** single-site
wastewater treatment
facility in the United States



2.8 MILLION
PEOPLE SERVED



195 miles of trunk
sewers & interceptors



3
Interceptors



19 Member Partners
across **79** communities



Treatment capacity of **1,700**
million gallons per day



9 PUMP
STATIONS

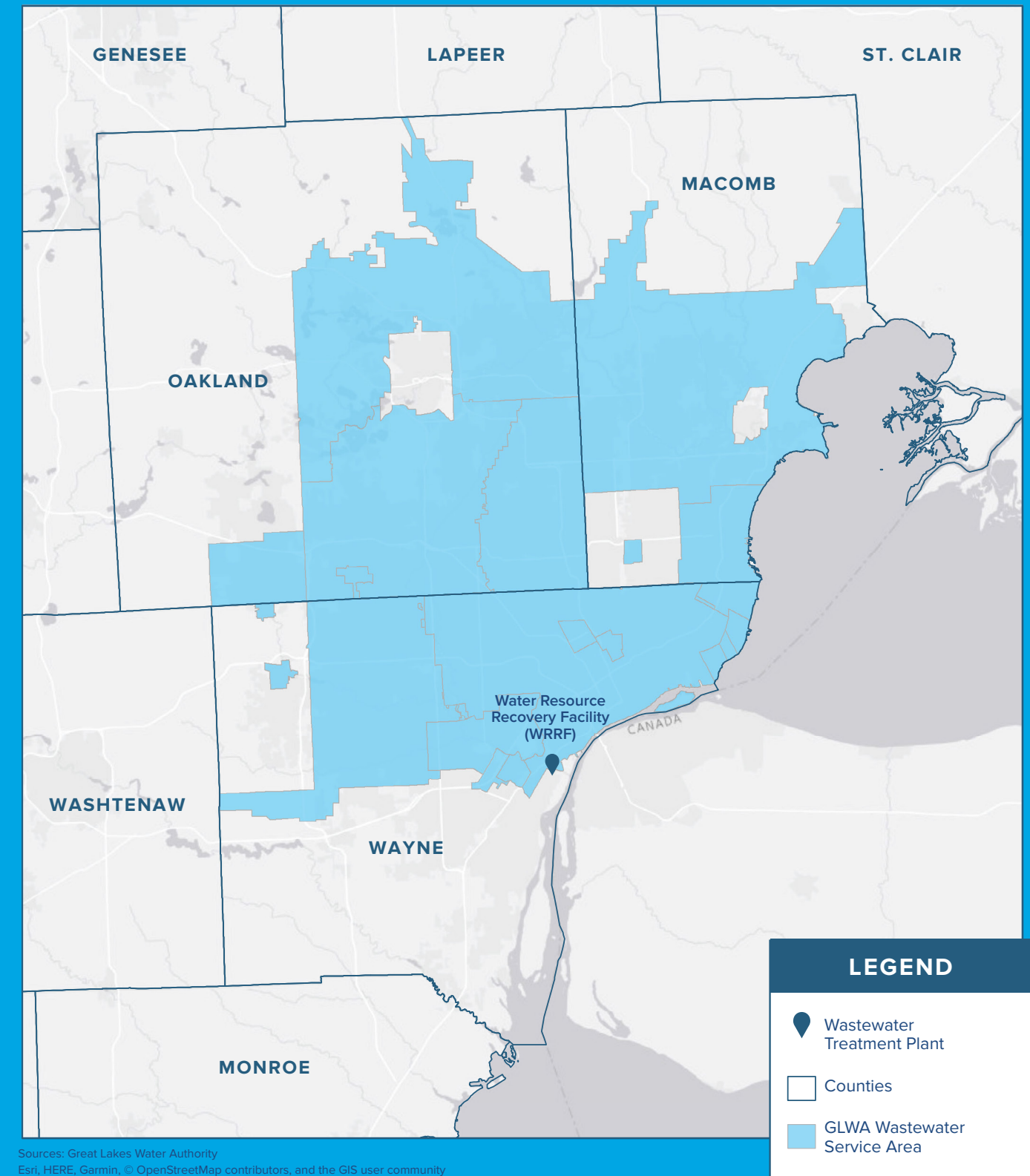


944 SQ. MILE
service area

8
CSOs



GLWA WASTEWATER SERVICE AREA



Sources: Great Lakes Water Authority
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

BOARD OF DIRECTORS 2019



Freman Hendrix, Jaye Quadrozzi, Gary Brown, Abe Munfakh, P.E., Beverly Walker-Griffa, Ph.D., Brian Baker

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GLWA Board Chairman;
GLWA Board Representative for Macomb County

ABE MUNFAKH, P.E.*

GLWA Board Vice Chairman;
GLWA Board Representative for Wayne County

GARY A. BROWN

GLWA Board Representative for
city of Detroit

BEVERLY WALKER-GRIFFEA, PH.D.

GLWA Board Representative for
the state of Michigan

FREMAN HENDRIX

GLWA Board Representative
for the city of Detroit

JAYE QUADROZZI

GLWA Board Representative for
Oakland County

*Abe Munfakh was elected by the Board to serve as chairman for 2020

EXECUTIVE LEADERSHIP TEAM



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Chief Executive Officer



WILLIAM M. WOLFSON
Chief Administrative and
Compliance Officer



NICOLETTE N. BATESON, CPA
Chief Financial Officer and
Treasurer



CHERYL PORTER
Chief Operating Officer,
Water & Field Services



DAVID MEHRAM
Chief Operating Officer,
Wastewater Operating
Services



TERRI TABOR CONERWAY
Chief Organizational
Development Officer



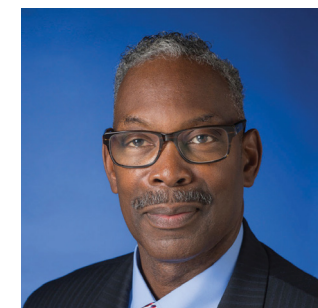
SUZANNE R. COFFEY
Chief Planning Officer



MICHELLE A. ZDRODOWSKI
Chief Public Affairs Officer



JEFFREY E. SMALL
Chief Information Officer



W. BARNETT JONES
Chief Security and
Integrity Officer



RANDAL M. BROWN
General Counsel

OUR VISION

Through regional collaboration, GLWA strives to be the provider of choice dedicated to efficiently delivering the nation’s best water and wastewater services in partnership with our member partners.

OUR MISSION

To exceed our member partners’ expectations by utilizing best practices in the treatment and transmission of water and wastewater, while promoting healthy communities and economic growth.

OUR VALUES

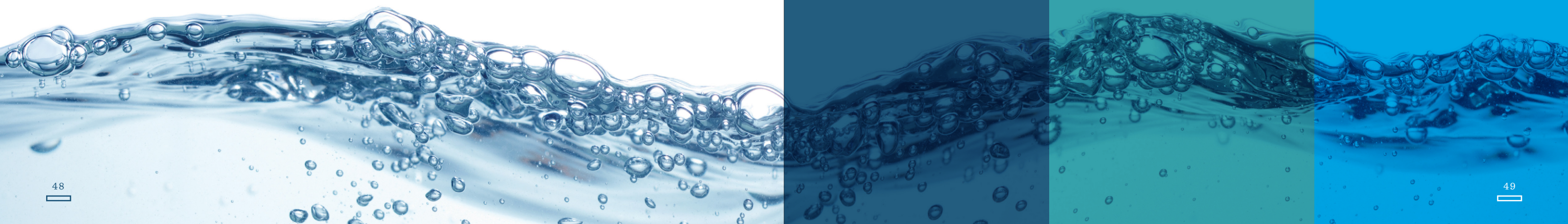
- Approachable
- Reliable
- Trustworthy
- Smart
- Efficient
- Focused
- Determined



ONE
WATER

ONE
TEAM

ONE
MISSION





SPRINGWELLS



LAKE HURON



WATER WORKS PARK



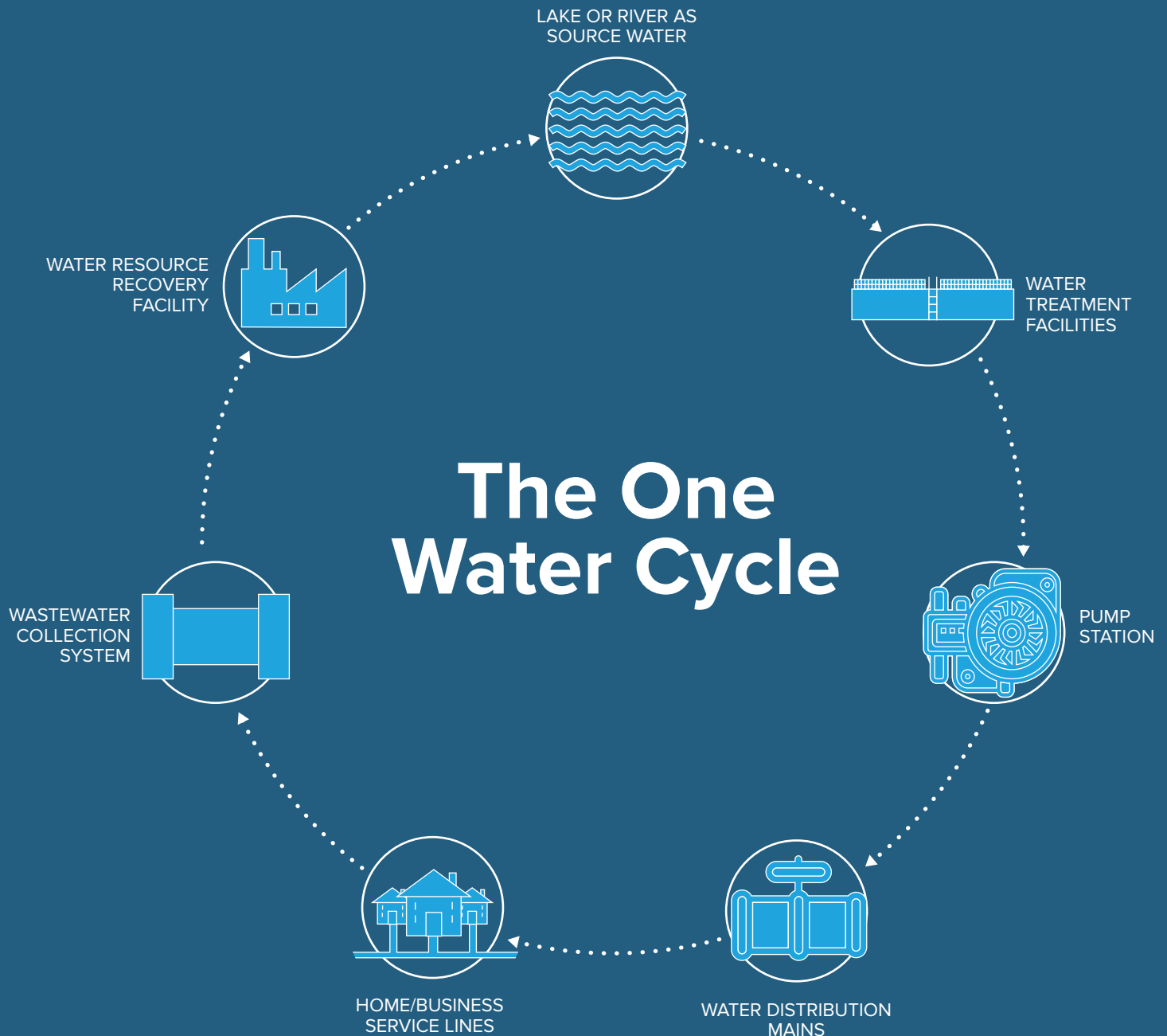
WATER RESOURCE RECOVERY FACILITY



SOUTHWEST



NORTHEAST



GLWA is all about **One Water**...the movement of water from the environment, to our member partners, and back to the environment. We ensure our member partner communities get the highest quality water using treatment standards that are stricter than state or federal regulatory requirements. Once the water has been used, we run it through our treatment process again before returning it to the environment – often times cleaner than when we received it. Working hand-in-hand with our member partners, GLWA provides water of unquestionable quality and efficient and effective wastewater services.

Together, we are **One Water**.