



ERIE COUNTY WATER AUTHORITY

INTEROFFICE MEMORANDUM

April 11, 2023

To: Terrence D. McCracken, Secretary to the Authority

From: Russell J. Stoll, Chief Operating Officer *RJS*

Subject: Comprehensive Strategic Plan
Revised April 2023 (Draft)
ECWA Project No. 201900212

Please find attached the Comprehensive Strategic Plan, originally adopted by the Authority's Board on September 19, 2019 and revised in April 2023.

This Strategic Plan of the Erie County Water Authority has been created pursuant to Policy No. 18 – Long-term Strategic Planning as a road map for the significant priorities of the Authority for the next twenty years and beyond. It supports the Mission Statement of the Authority. The plan identifies 7 (seven) long-term Strategic Initiatives and supporting objectives.

The revised Comprehensive Strategic Plan identifies progress or completion of the objectives initially stated and also provides new objectives. Comments from the board will be used to finalize the draft plan for adoption.

RJS:jmf

cc: T.Graffeo
ECWA-854-1901

ERIE COUNTY WATER AUTHORITY COMPREHENSIVE STRATEGIC PLAN

September 2019

Revised May 2023

This Strategic Plan of the Erie County Water Authority has been created pursuant to Policy No. 18 – Long-term Strategic Planning, as a road map for the significant priorities of the Authority for the next twenty years and beyond. It supports the Mission Statement of the Authority which reads:

The mission of the Erie County Water Authority is to provide all of its customers a plentiful supply of safe, high quality and affordable drinking water through a reliable infrastructure.

Four overarching goals articulated by the Board and leadership staff are incorporated throughout the Plan: **Expansion, Redundancy, Automation/Cyber Security, and Investment.**

Each initiative, listed below with equal importance, has specific objectives and measurable actions with implementation dates where applicable. This Plan will be reviewed at a minimum on an annual basis in advance of the start of the budget planning process, and our success in completing the seven strategic initiatives will be measured.

This Strategic Plan is updated and revised. Revisions are shown in **bold** font.

Strategic Initiative 1 – Resiliency of ECWA Infrastructure and Assets

Core Principals: Evaluate and maintain ECWA’s infrastructure to reliably meet the service needs of our present and future customers in a cost-effective manner. Focus on the redundancy and resiliency of key ECWA assets through replacement, expansion, shared resources, and inter-community cooperation. Embrace the principles of environmental, social and economic sustainability and strive to make the best use of our water resources promoting conservation of water, energy, and other natural resources. Maintain a strategic financial model to predict short- and long-term cash flows to facilitate financial planning.

Objectives:

- Complete a biennial comprehensive condition assessment of all key components of the treatment, storage, pumping and transmission systems. **This condition assessment continues on a routine basis.**
- Identify critical projects and prioritize the implementation of capital improvements to efficiently utilize funding and employee resources. Review the project list and prioritization on an annual basis. **This process occurs annually prior to preparing the capital improvement budget.**

- Maintain the comprehensive asset inventory database to optimize the maintenance and replacement of assets to maximize their useful life. Complete the next update of the database by the end of 2021. **This database now resides in the CityWorks asset management software deployed in January 2023. Updates to the database will occur on an ongoing basis.**
- Annually review federal and state grant funding opportunities. Improve ECWA’s position for funding through the proactive preparation of accurate, “shovel ready” construction documents to allow ECWA to quickly respond to all grant opportunities. **This effort is continuous on a routine basis.**
- Develop, fund and execute a 20-year Capital Improvement Plan (CIP) and commit to investment to ensure ECWA’s infrastructure will meet the operational demands of present and future customers. Review the CIP annually to coincide with the budget process with major updates completed at least once every five years. Target an annual replacement of 15 miles of new transmission and distribution lines representing approximately 0.75% of our direct service areas, and attain a similar investment in our treatment, pumping and storage facilities. **This 20-year CIP is updated annually and addresses current and future needs and upcoming regulatory requirements. The current 5-year CIP and 20-year CIP do not support the goals outlined in this paragraph. The 0.75% and a similar investment in our treatment and pumping facilities cannot be achieved based upon priorities and available funding. Once the major investments in Sturgeon Point treatment plant and Ball pumping station are complete, the budget will most likely heavily focus on lead service line replacement and transmission main upgrades.**
- Complete a system-wide master plan for meeting our current and projected personnel and operations space needs by the end of 2020. **This master plan is a 30-year look ahead that was completed in 2021. It was used to develop annual budgets for the CIP for 2021 to and including 2023. Integral to the system-wide master is the planning, design and construction of a new operations and business center. Land is purchased for the new facility and a consultant hired to begin planning and design. The first phase of is project is planned to be complete the end of 2025.**
- **Minimize System Losses by Implementing Water Loss Controls.** ECWA will use the water audit method developed jointly by the International Water Association and AWWA. The IWA/AWWA Water Audit Method provides the best management practice tools and guidance water utilities need to efficiently manage their supplies. ECWA has engaged a consultant to develop the audit tool that will be updated on a regular basis by ECWA. The initial audit software tool is projected for completion by July 1, 2023. The results of the initial audit will provide the information so that ECWA can establish attainable goals for water loss and non-revenue water.

Strategic Initiative 2 – Water Quality

Core Principals: Provide high quality drinking water through effective management and operation of our treatment and distribution system. Continue to meet and surpass all water quality standards.

Anticipate and comply with regulatory and environmental changes to ensure ECWA preparedness to continue to provide high quality drinking water.

Objectives:

- Conduct bench and pilot testing of treatment technologies that will result in improved water treatment operations while maintaining the highest water quality. **Lab testing to evaluate methods to reduce lead concentrations in customer drinking water was conducted in spring of 2020 as a part of the corrosion study. A full loop testing program started in January 2023 and will continue for two years.**
- Develop a program to address the new lead and copper rule enacted by EPA. **ECWA has engaged a qualified consultant through a request for qualifications process as the program manager to address the regulatory requirements. Work will include developing detailed steps to address the various elements of the new Lead and Copper Rule. Implementation will include developing an approach for locating lead service lines, evaluate replacement strategies for public side and private side lead services including funding options, developing a publicly accessible data base for customers to determine the material of their water service line. This work began in 2022 and will continue into 2023. Future work will include water quality sampling and analysis, reporting, regulatory coordination, and lead service line replacement oversight which will continue through 2024.**
- Investigate and implement appropriate technologies for future water treatment challenges including emerging contaminants and changing source water quality. **Screening of alternate coagulant products/formations was conducted on a bench-scale at the Van de Water WTP. The next step involves the full-scale side-by-side piloting of the two coagulant products at the Sturgeon Point WTP. Additionally, laboratory testing was successfully conducted with powdered activated carbon (PAC) to evaluate the ability to react to elevated microcystin levels in water drawn from Lake Erie as a result of a harmful algal bloom (HAB) outbreak. The results of the testing have been incorporated into the basis of design for improvements to the PAC systems at Sturgeon and Van de Water.**
- Annually assess the chemical, energy, and process water usage at each treatment plant and make improvements where possible. Ensure optimization of all facets of the operation of the treatment and distribution systems. **Completed a review of multiple treatment processes, identifying efficiency improvements to multiple chemical, energy and water usage processes including coagulation, filtration, chemical and pumping systems. Annual assessment will continue. Meetings were held with National Grid and Fluent Energy to better understand ECWA billing structure and discuss energy consumption at ECWA's treatment plants and pumping stations. This effort will continue so that an achievable approach to optimization is identified.**
- Evaluate and implement distribution system improvements for water quality including water storage tank operation and maintenance, chlorination booster stations, and waterline flushing. Review related Standard Operating Procedures annually. Utilize real-time

monitoring through the SCADA system to effectively manage water age throughout the distribution system to reduce disinfection byproduct formation and enhance water quality. **Reviewed WQ sampling points and modified non-representative locations. Reviewed historical WQ data for storage tanks and evaluated methods to improve chlorine residual/reduce water age and stratification through piping modifications, mixing devices operational strategies. Continuous pressure monitoring equipment is installed at critical locations in the system. Revisions to the Authority's hydraulic model will include a water quality component, with the potential for use with identifying water age, modeling chlorine residual decay, and predicting disinfection byproducts formation.**

Continue to review flushing programs in conjunction with ECWA Line Maintenance. Modify location/frequency of flushing as appropriate to improve WQ. Evaluate and install additional mixing devices. Complete by fall 2023.

- Provide educational materials through our website on our water quality and how ECWA is preparing for potential water quality challenges such as harmful algal blooms. **Prepared and posted a harmful Algal Bloom and Cyanotoxin Readiness Summary. Currently preparing summary and educational materials outlining Lead and Copper Rule Revisions requirements for ECWA. Materials will include description of revised rule and to identify lead service lines, associated WQ sampling need for lead water service line replacement and publicly accessible service line inventory. This phase is targeted for completion fall 2023.**
- Ensure all water quality reporting deadlines are continuously met with multiple, redundant laboratory services, utilizing both in-house and outside contract services. **ECWA has increased its in-house capability of performing multiple water quality testing procedures including purchasing analytical equipment, preparation of laboratory space and securing additional laboratory staff. Redundant laboratory services are used for critical water quality testing/reporting when required. This objective has been achieved.**

Strategic Initiative 3 – Expand ECWA's Regional Presence

Core Principals: Plan collaboratively to timely provide infrastructure to meet the needs of the Western New York Community. Expand ECWA's service area through cooperative projects that lead to either consolidation of local water systems within Erie County or the creation of new bulk water sale customers.

Objectives:

- Coordinate with representatives of potential bulk water customers, including Genesee County, the Village of Alden, and the City of North Tonawanda to determine their water supply needs, whether on a daily or emergency supply basis. Analyze our treatment and distribution systems and identify required capital improvements and associated financial responsibility. **A permanent connection has been completed with the Village of Alden**

for use in emergency and/or high demand conditions. As of December 2022, Genesee County is not pursuing any additional water for the western portion of the county. They will continue to use their current supply at Pembroke and will reach out to ECWA if demand changes. Newstead tank improvements are designed, and installation planned for 2024 to support Genesee County needs. These improvements are being made to support the current demand in the vicinity of the tank. This is an ongoing objective that will continue as opportunities are identified that fit with this strategic initiative.

- Identify opportunities where consolidation/conversion of bulk and/or lease managed system to direct serve is feasible for the municipality and the Authority. **The Town of Lancaster has requested a review of their infrastructure improvement requirements prior to consideration for ECWA consolidation. The town is currently addressing improvement needs. These improvements by the Town of Lancaster may take 10 years to complete.**
- Actively engage regional water utilities and collaborate where appropriate on common water treatment and supply water issues. Identify opportunities for shared resources including interconnection of distribution systems as emergency source of supply. Host/attend quarterly meetings with representatives of the adjoining City of Buffalo and Town of Tonawanda water systems. **An agreement is being prepared to complete a feasibility study for hydraulic capacity for supplying water to ECWA on an as needed or emergency basis. Financing for the study was committed by ECWA in March 2023. Feasibility study is anticipated to be completed in spring 2024.**
- Communicate with regional utilities and proactively identify and coordinate waterline betterment opportunities on regional highways or infrastructure projects in the areas in which we provide direct water service. **ECWA continues to work with Erie County Highway Department and NYS Department of Transportation to coordinate water main improvements prior to construction of roadway improvements thus reducing traffic impacts and overall cost of improvements by working cooperatively during the construction program. Several projects have been accomplished in this manner since 2019. Continue to discuss with Town of Cheektowaga regarding betterment opportunities in 2023.**

Strategic Initiative 4 – Promote Technology

Core Principals: Maximize ECWA’s information technology infrastructure assets to assure reliability. Seek innovative opportunities in the overall production of water and service to our customers. Maintain a utility that is equipped and trained in the use of appropriate and advanced technology to enhance service, efficiency and effectiveness.

Objectives:

- Continue with the modernization of ECWA’s Supervisory Control and Data Acquisition (SCADA) system. Provide an optimized, consistent platform system-wide across the

treatment and distribution systems by the end of 2021. **The distribution system SCADA is 95% automated and increased automation continues to be implemented. The water treatment plant (WTP) SCADA is also connected to the distribution system SCADA that involves high service pump stations. Continued SCADA integration between the WTPs and Distribution system will continue with the integration reaching 98 % by 2025.**

- **Install a real-time monitoring system consisting of pressure, flow, and water quality information stations at key locations in the distribution system by the end of 2022. Utilize the information from each station to enhance daily operations and proactively identify any developing critical situations within the distribution system. The initial phase of this objective is complete, meeting the date of end of 2022. ECWA will review and evaluate the operational data collected during the initial phase and integrate this information into the Hydraulic model (see objective below). ECWA will use 2023 and 2024 to review, evaluate and analyze this data to then begin a second deployment of real-time monitoring system including pressure, flow and water quality information stations. This deployment is projected to begin in latter 2024 and extend into 2025.**
- **Build and maintain a secure, redundant and modern IT system to ward against possible cyber security attacks. Enhanced protections including back-ups and logging are being finalized in 2023 to ensure the Authority has the ability to detect and recover from cyber security incidents or disasters. Next generation Anti-Virus and other related security measures have been implemented as well to protect users and assets.**

Onboard highly technical personnel providing robust, adaptive strategies in the always evolving cybersecurity environment.

- **Further develop our water quality and hydraulic models of the treatment plants and distribution system. Integrate each model with the appropriate features of our SCADA, asset management, and work order software platforms. ECWA and their consultant have developed and completed a new 1:1 (GIS:Model) hydraulic model using WaterGEMS. The hydraulic model has been calibrated to within industry standards for hydraulic analysis utilizing the past 4 years of metered water, SCADA, and numerous flow tests. The fully calibrated model with the ability to run extended period simulations has a target delivery date of April 2023. The refined calibration will require water quality testing and analysis, field testing pump curves, and systemwide water samples. This work will be completed by the end of 2023.**

Complete an IT Master Plan including the implementation of an Enterprise Resource Planning (ERP) system to replace legacy systems and integrate the multiple software process needs of the Authority by 2024. A consultant has previously prepared a draft IT Master Plan. ECWA to review the recommendations of the Plan and consider modifications as necessary. Develop a schedule to implement specific recommendations of the Plan to meet the 2024 deadline. For the overall alignment with the strategic plan, IT is engaged in the following:

An in-place upgrade of the existing ERP System (including HR, Customer

Service, Purchasing, A/P, Asset Management, etc.). The upgrade will immediately make the systems more accessible by providing browser-based access, a more modern web-based user interface, and an overall improved user experience that will drive increased efficiency. This will be an on-going project, but is funded for 2023 and expected to begin in Q3 2023 with the first phase to be completed by the end of the calendar year.

Modernization of process and use of paper/documents is underway via the implementation of an Enterprise Document Management Systems as well as the implementation of a print management solution to help track and reduce paper usage. This will be complete by Q3 2023.

Cybersecurity processes will continue to progress as IT work with external agencies to ensure that our network adapts to evolving threats. Incident Response and Disaster recovery plans will be tested and updated semi-annual and new security audit processes are being implemented.

Strategic Initiative 5 – Enhance Customer Service

Core Principals: Provide exceptional service to our customers and community partners by being understanding, supportive and responsive to our user’s needs and priorities. Promote customer confidence in ECWA through financial responsibility, professional character and ethical behavior. Engage our customers to understand their expectations to further build and maintain their trust. Educate and increase public awareness of the innovative technologies ECWA applies each day.

Objectives:

- Complete the transition to 100% radio read meters by 2026. **Continuing to evaluate the transition to newer technology of customer meters. There has been an ongoing initiative to transition all meters to radio read (Ecoder) meters. The Engineering Department is in the process of developing a water loss analysis by consulting engineers and we are optimistic that there will be some conclusion as to the best meter technology available. The study should be completed by July 2023.**
- Investigate the use of Automatic Meter Reading (AMR) and software technology to identify individual locations of non-typical water use to aid in the overall reduction of non-revenue water by 2026. **Continue to review the use of AMR and continue to evaluate other means i.e. Advanced Metering Infrastructure (AMI) and refer to the consultant’s analysis of this technology. The development of the audit software tool will be utilized in this area to assist in determining areas of concentration based on the model that is developed. Investigation and discussions have also been held to address the future of metering technology. Once the model has been developed, all goals relative to metering software and water loss will be re-evaluated.**
- Establish customer service standards for response times. **In late 2019, early 2020 the entire ECWA phone system was replaced. The new system provides a variety of daily reporting and monitoring tools that provide up to the minute analysis of hold times,**

call duration, abandoned calls and offers the caller a series of automated options before being placed in the queue.

- Expand Customer Service hours to better accommodate our customers by 2022. **This initiative has been extended until the construction of the new facility is complete. Greater efficiency will be gained by having the call center located at the main facility in a location that will allow for more flexible scheduling of call center representatives.**
- Enhance website access to allow for online application processing and service requests by 2022. **This objective will continue to be assessed in conjunction with the IT.**

Strategic Initiative 6 – Employee Focus

Core Principals: Provide a work environment where employees are valued, empowered and informed. Recruit, develop, and retain a highly skilled and knowledgeable workforce and provide them with the resources to meet customer and ECWA needs and expectations. Mentor and encourage employees and reinforce succession planning through training, education, and promotion opportunities.

Objectives:

- Annually assess staffing requirements to anticipate and address retirements, promotions, and departures. Provide a staffing level consistent with the needs of the implementation of the Capital Improvement Plan. **This effort continues as staffing requirements address retirements, promotions and departures.**
- Develop and implement a succession plan for all critical positions across the organization. Project potential future critical vacancies with an emphasis on key positions. Employ an operational and institutional knowledge transfer strategy.
- Complete the update of Lock Out/Tag Out procedures for all ECWA facilities by 2020. **Lock Out/Tag Out procedures have been advancing significantly across ECWA facilities. The majority of all facilities are updated with a projected completion of end of 2024.**
- Reinforce our continued commitment to safety training and awareness for all employees. **ECWA is deploying Hands Only CPR and AED training across the entire organization with a completion projected for June 2023. Additional mandated state training for workplace violence and sexual harassment will be completed by the end of 2023. Cyber Security training program is currently be developed and will be completed by Q3 2023. Job site training will be continued on a regular basis for both current employees as well as new employees. Continue to explore new and innovative safety and training plans for our employees, ensuring we are providing the safest work environment for ECWA employees.**

Strategic Initiative 7 – Emergency Preparedness

Core Principals: Verify the Authority's preparedness to meet the needs of our customers in the event of a local or regional emergency event.

Objectives:

- Conduct regular testing of all backup power and communication systems. Implement annually by 2020. **This program is implemented, and improvements are continuously sought to improve SCADA communications and operations.**
- Continue coordination with local emergency responders and participate in regional emergency response exercises biennially. **Communication and coordination with local and regional emergency responders has been and will continue to be conducted as a part of ECWA's Emergency Response Plan (ERP). Training has been identified and is a requirement for support of the ERP. Completion of that training is planned for May 2023.**
- Maintain and constantly re-examine our vulnerability assessments and emergency response plans. **ECWA has completed the USEPA required Risk and Resiliency (R&R) Assessment in 2021, a requirement of the American Water Infrastructure Act. An update to the assessment was conducted in 2023.**
- Develop a plan and practice measures needed to operate key components of the water treatment and distribution systems in the event of the loss of automated monitoring and control capabilities. **ECWA has successfully completed planned short term interruptions to automated control systems. These measures will be practiced on a biannual basis.**
- Review cyber security awareness and plan for operation in the event of corruption/attack of our key IT systems. **ECWA has relationships with multiple security agencies. ECWA has performed several cyber infrastructure and security audits to identify areas requiring upgrades and improvements. These upgrades and improvements are made this objective continues on an on-going basis as technology changes.**