August 2020

Lake Huron to Lake Erie Real Time Drinking Water Monitoring

SEMCOG | SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS

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Mission

SEMCOG, the Southeast Michigan Council of Governments, is the only organization in Southeast Michigan that brings together all governments to develop regional solutions for both now and in the future. SEMCOG:

- Promotes informed decision making to improve Southeast Michigan and its local governments by providing insightful data analysis and direct assistance to member governments;
- Promotes the efficient use of tax dollars for infrastructure investment and governmental effectiveness;
- Develops regional solutions that go beyond the boundaries of individual local governments; and
- Advocates on behalf of Southeast Michigan in Lansing and Washington.

Lake Huron to Lake Erie Real Time Drinking Water Monitoring

Abstract

This report examines the benefits, challenges, and lessons learned in rebuilding this real-time drinking water monitoring network. The report recommends next steps to refine that program into a sustainable and coordinated system that will increase water treatment plant participation along the corridor; improve the network to ensure consistent monitoring, maintenance, and calibration; enhance communication and public awareness; and protect public health.

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Executive Summary

The region's water resources and quality of life are supported by infrastructure – drinking water, wastewater, stormwater, and transportation. This infrastructure provides drinking water to millions of people, manages wastewater from homes and businesses, treats and conveys stormwater runoff from rainfall, and connects local and regional economies to world-class water recreational activities. Addressing the needs of these infrastructure systems, along with public and private utilities, in a strategic, cost-effective manner will protect public health, the environment, and the region's future economic growth.

Southeast Michigan's water resources provide many benefits to the region, including transportation for movement of freight and people; recreational opportunities; processing in industrial and municipal treatment plant operations; watering operations in rural and urban settings; and recreation for boating, fishing, and hunting – adding $1.7 billion to the state's economy from the Huron to Erie Corridor, and a potable water source for 4.7 million people.

The 80-mile Lake Huron to Lake Erie international corridor is a major global shipping route and its shores include both heavy manufacturing along downriver Detroit, Michigan, and a concentrated network of petrochemical plants just south of Sarnia, Ontario. Accidental spills, emergency diversions (e.g., Fraser sinkhole), and nutrient-triggered algal blooms are a matter of historical record and are expected to continue, even at a reduced rate, into the future. There are 14 U.S. Water Treatment Plants (WTP) along this international corridor that treat water and subsequently distribute clean drinking water through an extensive network that serves a population of more than four million in Southeast Michigan. These WTPs are owned and operated by 12 different local communities and the Great Lakes Water Authority. The primary responsibility of a drinking water service provider is to protect public health.

In order to protect public health, WTPs need to be aware of potential source water risks/threats to the drinking water plants, such as accidental spills and emergency diversions (e.g., Fraser drain collapse and sinkhole) into source water areas combined with nutrient-triggered algal blooms. These risks demonstrate historical occurrences and it is understood that they are impossible to completely eliminate. Despite this, the state and federal drinking water regulatory framework does not include specific requirements for source water monitoring.

The Huron-to-Erie Real-Time Drinking Water Protection Network was created in the mid-2000s to counter those threats. The 14 communities and the Detroit Water and Sewerage Department (DWSD) agreed that in order to protect public health, they each needed to monitor (i.e., see in real-time) the quality of the source water entering the drinking water treatment plants in order to counteract any threats contained in the source water. The system network had many elements, including a variety of monitors, data logging, and website access. Unfortunately, a number of challenges, including the economic recession (dwindling budgets), complicated and high maintenance equipment (costs), and limited staff resources (priorities) effectively reduced network participation and limited its effectiveness.

This report examines the benefits, challenges, and lessons learned in rebuilding this real-time drinking water monitoring network. The report recommends next steps to refine that program into a sustainable and coordinated system that will:

- increase water treatment plant participation to 100 percent along the corridor;
- improve the network to ensure consistent monitoring, maintenance, and calibration;
- enhance communication and public awareness; and

- protect public health.

Southeast Michigan's potable source waters include both surface water and groundwater with most of the region served by water from the Huron to Erie Corridor through the 14 different municipal water treatment plants. The Great Lakes Water Authority (GLWA) is the major water supplier to 127 communities and approximately four million customers. The 80-mile Huron to Erie Corridor has both heavy manufacturing along downriver Detroit, Michigan and a concentrated network of petrochemical plants just south of Sarnia, Ontario.

The region's urban and rural land uses contribute both point source and nonpoint source pollution to its water resources. The risks associated with accidental spills, stormwater runoff, bacterial pathogens, and the presence of algal blooms make it essential to protect these potable source waters from contamination. Discussion began in the middle of the 1990s on the need for water intake monitoring. A collaborative effort of local, county, state, and federal agencies was launched to develop a real-time monitoring network along the waterway, funded through federal, state, and local sources.

A system of real-time drinking water monitors that could test the source water for general water quality parameters, presence of total organic carbon, hydrocarbons, or Volatile Organic Chemicals (VOCs) was established in the 14 water treatment plants (WTPs) along the Huron to Erie Corridor, from the City of Port Huron down to the City of Monroe. Thus, with 14 WTPs armed with real-time monitors throughout the corridor, the notification information collected by one plant's intake during a spill could be invaluable to those treatment plants further downstream. The monitors selected were high quality capable of providing the necessary notification of water quality concerns. However, the original monitors selected were costly to operate and maintain, requiring significant calibration and maintenance. Over time, these liabilities and others reduced the number of participating WTPs to one that could no longer sustain public health protection from spills along the entire waterway.

This project was undertaken by SEMCOG and its partners at Wayne State University, Urban Waters Program, and Michigan Department of Environment, Great Lakes and Energy (then the Department of Environmental Quality) as a component to updating the *Water Resources Plan for Southeast Michigan*. The purpose was to advance integrated drinking water protection in Southeast Michigan. The project included the purchase, installation, calibration, and maintenance of real-time monitoring equipment in all 14 WTPs along the U.S. side of the Huron to Erie Corridor, as well as development of an online spill modeling scenario tool that can be used by WTP operators in conjunction with the real-time monitoring network during spill emergencies.

In 2017, a grant of $375,000 was secured from the Governor's 21st Century Infrastructure Fund and allocated to SEMCOG through the Office of the Great Lakes to develop a collaborative framework for the purchase, installation, calibration, and maintenance of new monitoring equipment in the 14 municipal WTPs along the Huron to Erie Corridor. Treatment plant locations are shown in Figure 1. The monitoring equipment provided as fast as five-minute data results, offering early detection of contaminants in the source water.

The real-time monitoring network is a primary public health protection program that is part of an expanding integrated system of programs needed to effectively protect the source water, water treatment plant intakes, and public health. Between 2016 and 2017, Michigan Technological Research Institute (MTRI) and the Great Lakes Observing System (GLOS) developed a series of online spill modeling scenarios for Lake St. Clair and the Detroit River using the 3-D hydrodynamic model – Huron to Erie Corridor Waterways Forecasting System. The model generated scenarios based on water currents, wind directions, and origin of spill location that could threaten a particular WTP with a spill plume. These spill monitoring scenarios can be used by WTP operators in spill emergencies to gauge the likelihood of impact and time of impact, to inform next steps – such as intake closure – for public health protection.

Other types of municipal spill protection planning include source water assessments and protection planning, emergency response plans, and sanitary surveys which identify actions to take in case of spills. These other municipal options, plus the significant site protection planning that industrial users must do, will all be required along the St. Clair River to remove the Restrictions on Drinking Water Consumption or Taste and Odor Problems Beneficial Use Impairment as part of delisting the St. Clair River Area of Concern.

SEMCOG led the project with its partners Wayne State University, EGLE, and with a consulting team that included Environmental Consulting & Technology (ECT), Fondriest, and NexSens to guide discussions and decision-making for implementation of the various project components. This includes determining equipment needs, installing the equipment, and offering calibration and maintenance. In addition, the representative communities and GLWA have signed letters of commitment to financially support the ongoing efforts of this network. SEMCOG also hosted several stakeholder meetings, which included fostering partnerships with outside organizations to strengthen the network. An additional partnership was formed with DTE in St. Clair County. Table 1 identifies the communities/organizations involved in this program. The partnership between SEMCOG, MTRI, and GLOS developed a tool that allowed operators to see wind directions and currents that could convey spill plumes in threat to their WTPs.

Figure 1

Location of Water Treatment Plants in the Huron to Erie Network

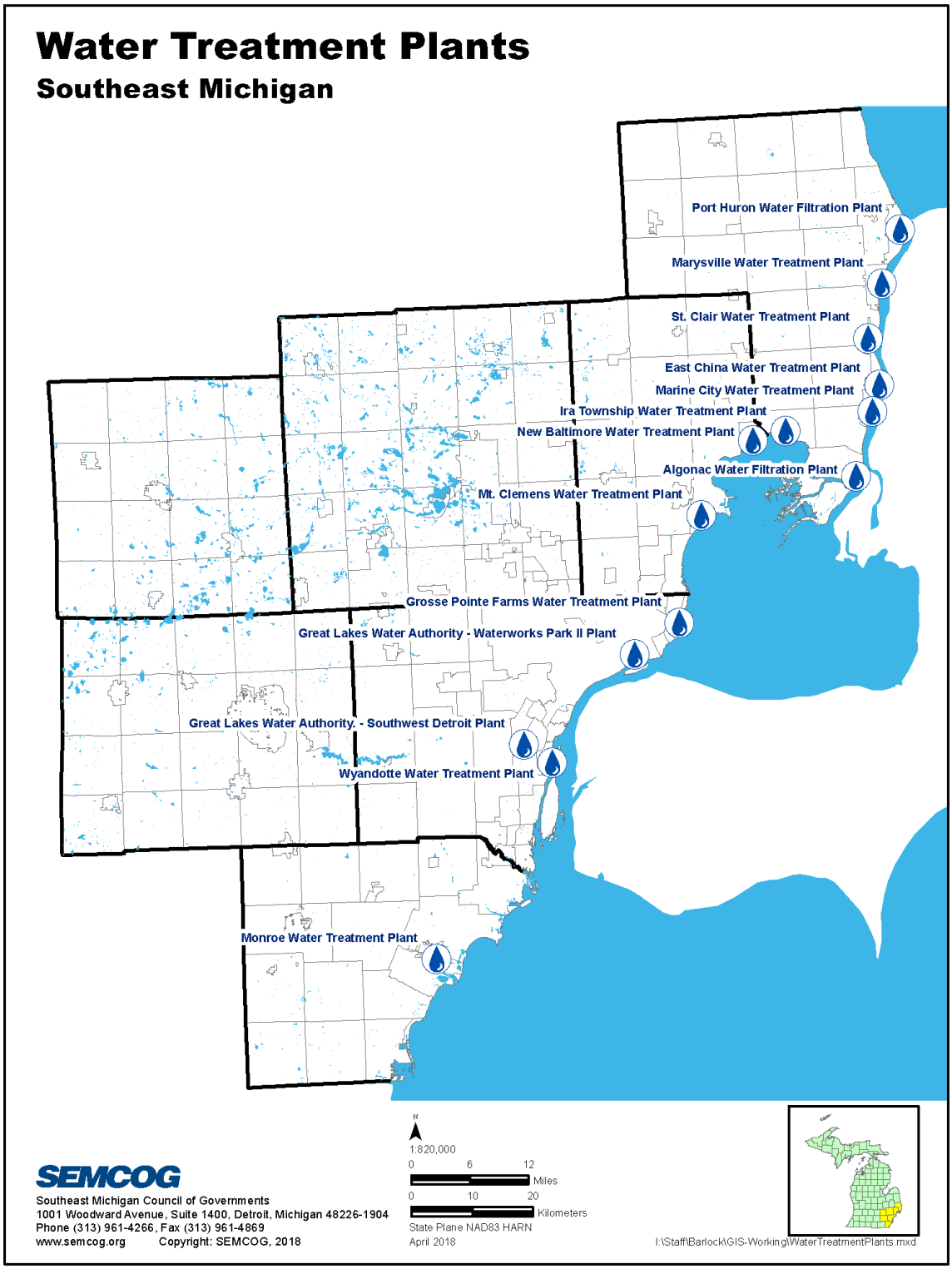


Table 1
Stakeholder Group for Huron to Erie Network

Agencies, Counties, and Water Authorities	Drinking Water Treatment Plants
Environmental Consulting & Technology	City of Port Huron
Fondriest Environmental	City of Marysville
NexSens Technology, Inc.	City of St. Clair
Great Lakes Water Authority	East China Township
Macomb County	City of Marine City
Monroe County	Ira Township
St. Clair County	City of New Baltimore
Michigan Office of Great Lakes	City of Algonac
Michigan Environment, Great Lakes & Energy	City of Mt. Clemens
Wayne State University	City of Grosse Pointe Farms
Michigan Technological University	Great Lakes Water Authority Water Works Park
DTE Energy	Great Lakes Water Authority Southwest Detroit
	City of Wyandotte
	City of Monroe

The efforts of this project align with the following policies from SEMCOG's *Water Resources Plan for Southeast Michigan*:

- Ensure that all have safe drinking water, monitor intakes to detect contaminants, and implement coordinated and timely procedures for notification and emergency response.
- Form collaborative partnerships among local, state, and federal agencies, as well as private businesses to implement cost-effective solutions to protect and restore Southeast Michigan's water resources.

Background

In Southeast Michigan, the valuable Huron-to-Erie water resource corridor is a global shipping route used for many purposes, including transportation, industry, and recreation. This corridor is a source for drinking water to 4.7 million residents in Southeast Michigan. The risks associated with accidental spills, stormwater runoff, and the presence of algal blooms make it essential to protect this source water from contamination. For example, approximately 40 percent of Canada's chemical industry is located in Sarnia, Ontario, which is at the upstream end of the Huron-to-Erie Corridor. In 2014, algal blooms caused the drinking water treatment plant in Toledo, Ohio to shut down. More than 500,000 people were without access to drinking water for two days causing a roughly $65 million impact. Between 1994 and 2004, the National Response Center of the U.S. Coast Guard received 991 reports of spills of contaminants along this corridor. In addition, rainfall events triggered combined sewer overflows and sanitary sewer overflows have been well documented in the corridor. Nine pipelines also cross under both the St. Clair and Detroit Rivers, some used for petroleum-based products.

The fast flow rates of the St. Clair and Detroit Rivers, combined with the wind patterns across Lake St. Clair, severely limit the response time to address spill-related events and increase the risk to community drinking water treatment facilities. Drinking water service providers are responsible for protecting public health by providing clean and safe water. Thus, in the mid-2000s, a collaborative effort of local, county, state and federal agencies was launched to develop a real-time drinking monitoring network along the waterway and funded through federal, state and local sources.

The Huron-to-Erie-Real-Time Drinking Water Protection Network was established with funding through the State of Michigan, U.S. Environmental Protection Agency, and the Department of Homeland Security. The network included the 14 drinking water treatment plans (WTPs) along the United States side of the Huron-to-Erie Corridor from the City of Port Huron to the City of Monroe. Spanning approximately 80 miles, the network included real-time drinking water monitors capable of testing source water for general water quality parameters, presence of total organic carbon, hydrocarbons, or volatile organic compounds (VOCs). The treatment plant locations are shown in Figure 2. The monitoring equipment provided 15-minute data results, offering early detection of contaminants in the source water.

In the event of a confirmed spill along this corridor, WTP operators, county health officials, and state agencies communicated about responses and, when necessary, shut down water intakes along the spill's path. The water quality monitoring data were also available for public users involved in research, spill investigation, river modeling, water treatment, or ambient water quality monitoring. While the initial funding supported purchase of the monitoring equipment, over time the original monitors selected proved costly and challenging for ongoing maintenance and calibration. Staff capacity at the local level was also a challenge to maintain the network.

In preparation for reviving this real-time monitoring program, a review of the initial network operations confirmed many of the historic Huron-to-Erie Corridor monitoring network challenges:

- Some of the monitoring equipment was maintenance intensive and suffered recurring malfunctions, resulting in questionable data and concerns about sensor conditions.
- The 2007-2009 global recession forced communities to prioritize budget items which resulted in cuts to staff training and network equipment maintenance for this program.

- Lack of consistency among plants in maintenance and calibration schedules, paired with aging equipment, created false positives and subsequent erroneous email or text message alerts to WTP operators. This made it difficult for operators to distinguish real events from false alarms.

Over time, these liabilities and others reduced the number of participating WTPs in the monitoring network. In 2017 as part of the update of the *Water Resources Plan for Southeast Michigan*, SEMCOG secured a grant of $375,000 from the Governor's 21st Century Infrastructure Fund. Through the Office of the Great Lakes, the funds were allocated to re-establish this collaborative monitoring network and to purchase and install new monitoring equipment. The overall project goal was to secure participation in the monitoring network and long-term operational support from all the drinking water treatment facilities' operators and governing agencies. Establishing a sustainable calibration and maintenance framework was also a major priority.

Partners to the 2017 re-establishment of this real-time monitoring program include the local communities who operate the drinking water treatment facilities, the Great Lakes Water Authority (GLWA), county health departments, the State of Michigan, and Wayne State University.

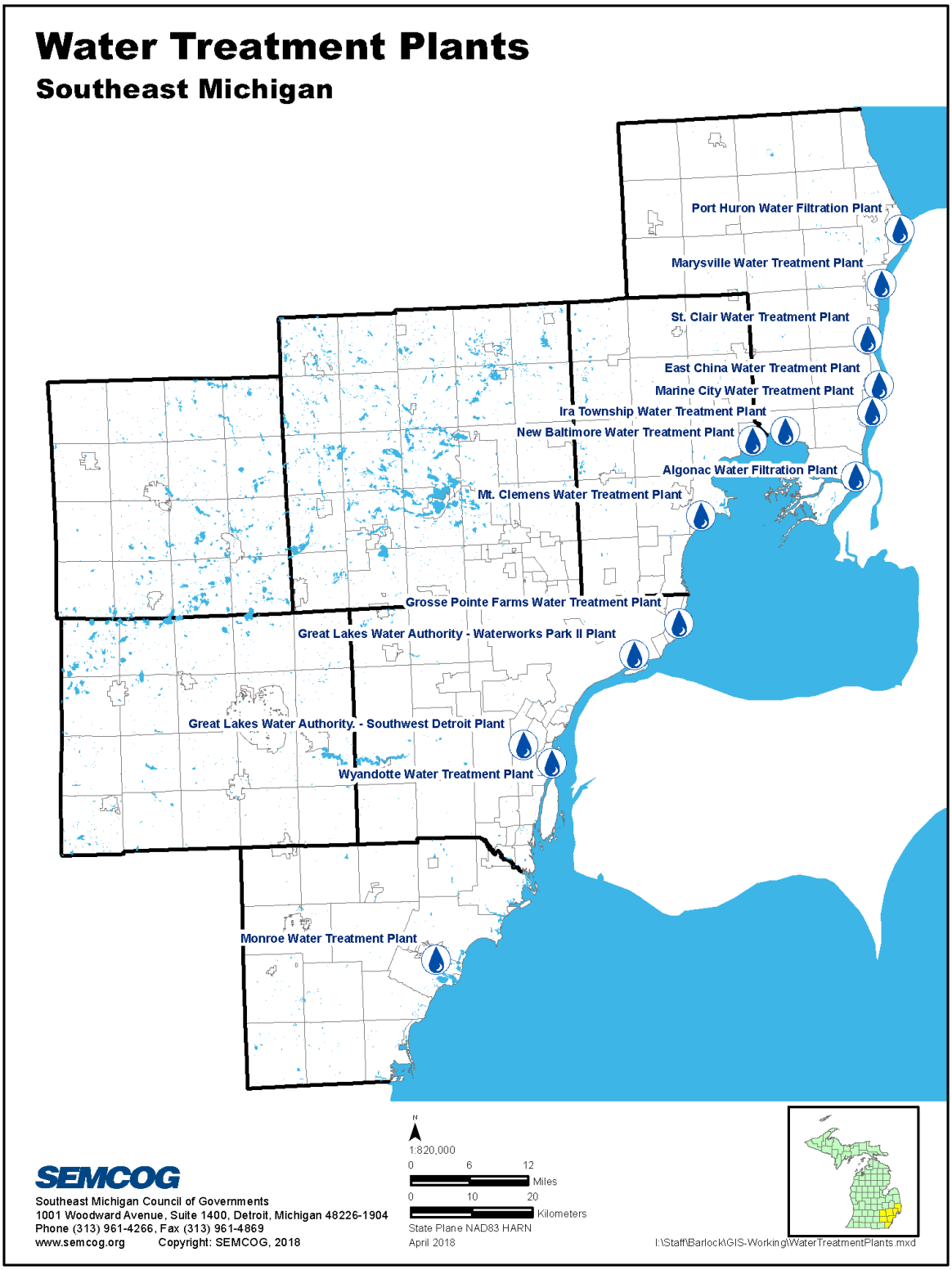
Specific activities implemented to achieve re-establishment of the Huron-to-Erie Corridor Drinking Water Monitoring Network included:

- **Determine updated partnerships and a collaboration framework**. Once the primary stakeholders and partners were identified, this group met regularly to identify equipment needs, address past challenges, and formulate a general agreement for long-term sustainable equipment operation.
- **Purchase and install monitoring equipment**. The stakeholder group worked collaboratively to identify monitoring equipment needs, develop specifications for equipment purchase and contractor installation, and ensure proper and timely installation across the network.
- **Establish the data monitoring network and integration components**. As the equipment was installed, the contractors worked regularly to connect the system to the online network and coordinated with Fondriest and NexSens to address data connection and monitoring issues.

This report summarizes these activities, includes updates to the program and network through 2020 and recommends next steps for the partnership.

Figure 2

Water Treatment Plants in the Huron to Erie Drinking Water Monitoring Program



Partnerships and Collaboration

The Huron-to-Erie Corridor Real-Time Drinking Water Monitoring Network has been in existence since the mid-2000s, developed through an informal partnership with grant funding to purchase and install drinking water monitoring equipment. Lessons learned from that initial grant project demonstrated that a long-term, sustainable source of funding, combined with support from governing agencies, is important to ensure participation continues into the future – thereby strengthening public health protections of the region's drinking water systems.

The resurgence of this program began with inviting each of the water treatment plant operators and other key stakeholders together to discuss the available funding, expected scope of work, and challenges to overcome from the past network system. This partnership is the cornerstone of the Huron-to-Erie Corridor Drinking Water Monitoring Network. Stakeholder meetings were convened in early 2018, with the group meeting regularly throughout project duration. This unique team of cross-jurisdictional agencies includes SEMCOG, local community representatives and drinking water treatment operators, a regional water authority, county health departments, environmental consultants, the State of Michigan, Wayne State University, and other interested stakeholders. This team was further strengthened through a new partnership with DTE Energy described below. Table 2 highlights members of this partnership:

Table 2
Stakeholder Group for the Huron to Erie Network

Agencies, Counties, and Water Authorities	Drinking Water Treatment Plants
Environmental Consulting & Technology	City of Port Huron
Fondriest Environmental	City of Marysville
NexSens Technology, Inc.	City of St. Clair
Great Lakes Water Authority	East China Township
Macomb County	City of Marine City
Monroe County	Ira Township
St. Clair County	City of New Baltimore
Michigan Office of Great Lakes	City of Algonac
Michigan Environment, Great Lakes & Energy	City of Mt. Clemens
Wayne State University	City of Grosse Pointe Farms
Michigan Technological University	Great Lakes Water Authority Water Works Park
DTE Energy	Great Lakes Water Authority Southwest Detroit
	City of Wyandotte
	City of Monroe

General roles and responsibilities of the project partners follow. This partnership met frequently throughout the grant program to make decisions about re-establishment of the monitoring network.

Southeast Michigan Council of Governments

SEMCOG managed the grant activities, secured project consultants, facilitated partnership meetings, and developed an overall framework for long-term project sustainability. SEMCOG continues to facilitate regular meetings with this group on a quarterly basis.

Drinking Water Treatment Plants and County Health Departments

Representatives from each of the WTPs and county health departments worked cooperatively to identify monitoring equipment needs based on the typical source water quality parameters at their respective locations along the corridor. Additionally, each WTP and governing body committed to long-term project sustainability through a signed letter of commitment with funding to support regular calibration and maintenance using an agreed upon contractor.

Environmental Consulting & Technology (ECT)

ECT coordinated with Fondriest Environmental and NexSens Technology to determine available monitoring equipment appropriate for the project. ECT also procured and installed all of the monitoring equipment at the 14 water treatment plants. As part of the contracts signed by the WTPs, ECT performs the maintenance calibration for 12 of the 14 WTPs. ECT also assists in interpreting results and troubleshooting ongoing issues.

Fondriest Environmental & NexSens Techonology

Fondriest Environmental supplied the YSI Sondes and sensors, as well as NexSens equipment – including the data loggers. All troubleshooting support for the data logger and website sharing the data results is done through Fondriest.

State of Michigan

The Office of Great Lakes provided staff support and the grant funding to re-establish the monitoring network and support the partnership framework. Staff from the district EGLE offices also provided support and review of monitoring parameters.

Wayne State University Healthy Urban Waters

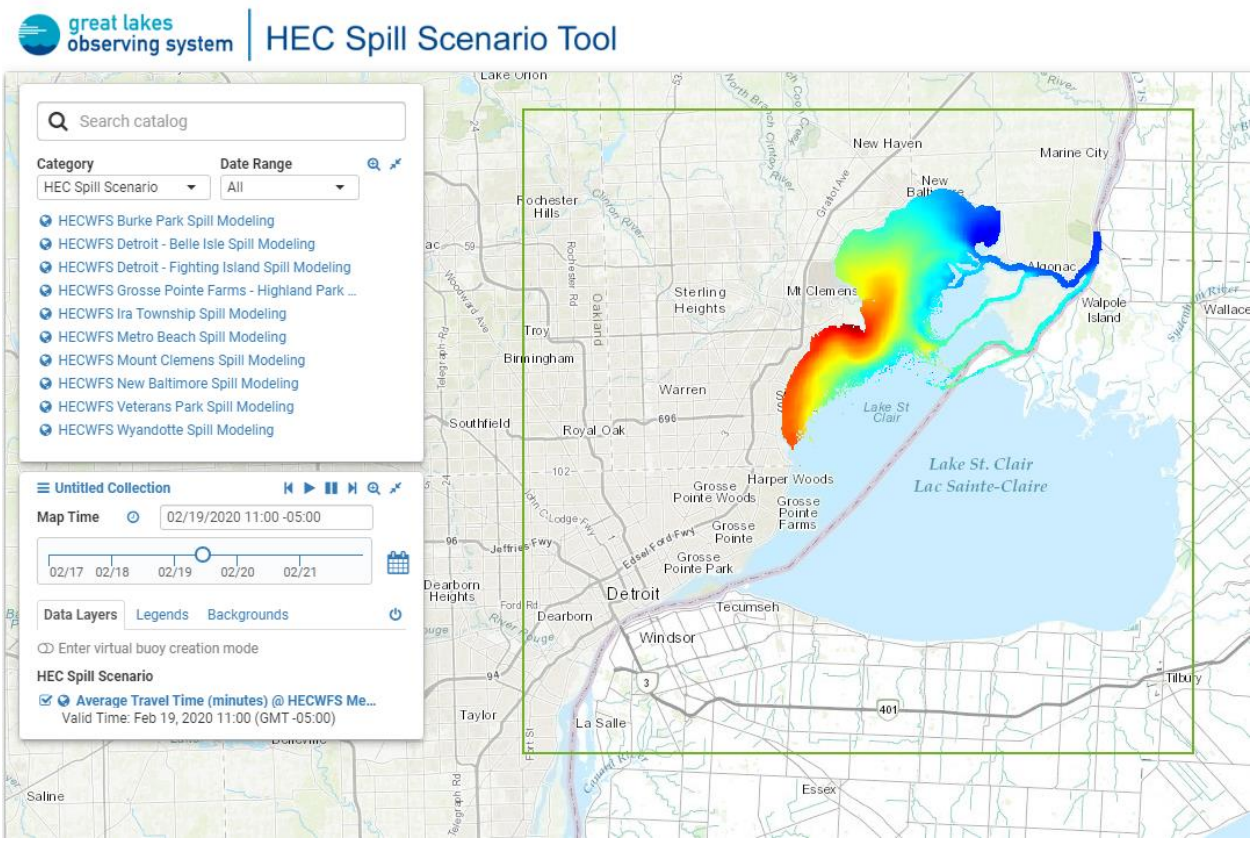
Wayne State University continues collection of the real-time monitoring data that is used for research purposes, and publishes the data to a public-facing website: http://waterdatadetroit.azurewebsites.net/. The data is available for public users involved in research, spill investigation, river modeling, water treatment, or ambient water quality monitoring. Historic data from the previous monitoring effort can be found at https://wq7.org/index.html.

Michigan Technological University and NOAA Great Lakes Observing System

Between 2009 and 2017, NOAA and MTU developed a series of spill monitoring scenarios for the St. Clair River, Lake St. Clair, and the Detroit River using the 3-D hydrodynamic model Huron to Erie Corridor Waterways Forecasting System. The model generated scenarios based on water currents, wind directions, and origin of spill location that could threaten a particular WTP with a spill plume. These spill monitoring scenarios can be used by WTP operators in spill emergencies to estimate the likelihood of affecting water treatment plant intakes

The water treatment plant operators, as well as health department officials, are able to use this tool to predict intake closure times, as well as beach closure times. Figure 3 shows a screenshot of the tool.

Figure 3
Screenshot of the HEC Spill Scenario Tool



DTE Energy

A unique public-private partnership was formed as part of the monitoring network. DTE Energy and the DTE Belle River Power Plant supported installation of drinking water monitoring equipment at the Belle River facility. This facility is located just upstream of the East China Township drinking water treatment plant. By installing the monitoring equipment at DTE, East China has a longer time to respond to potential spills or other contaminants in the source water that may impact the drinking water intake.

Other Partnerships

Additionally, SEMCOG hosted larger stakeholder meetings to get input from other interested groups involved with related drinking water monitoring activities. For example, the Binational Public Advisory Council (BPAC) invited SEMCOG to present on this project to their stakeholders, and may use the monitoring results in their council efforts. Additionally, the Michigan PFAS Action Response Team (MPART) presented an overview of their PFAS response efforts.

The final project stakeholder meeting in December 2018 took place after all drinking water monitoring equipment was installed at each of the facilities. Outstanding technical support to address issues related to communication and connectivity continued through 2019. The installations were complete with a few outstanding technical issues related to connectivity.

As part of ensuring long-term project sustainability, each water supplier committed to an annual contribution to the program to ensure regular calibration and maintenance by a single contractor or the facility's own staff. Additionally, each partner committed to meeting on a quarterly basis to review data results and discuss future challenges to address. The value of participating in this program and the monitoring network was recognized by all the partners.

Drinking Water Monitoring Equipment: Purchase & Installation

The resurgence of this program began with inviting each of the water treatment plant operators together to discuss available funding, expected scope of work, and challenges to overcome from the past network system. New monitoring equipment was a priority in lieu of refurbishing existing monitoring equipment given the age of the previous equipment, availability of new technology, monitoring probes and communication options, and to ensure consistent and reliable monitoring data.

Working with Environmental Consulting & Technology and Fondriest Environmental, the group identified the equipment needs for each WTP in addition to possible future equipment purchase alternatives. Some of the fluorometers at the current locations were planned for refurbishment rather than replacement. The group also evaluated an integrated platform for viewing the monitoring data within the existing data portal system coordinated with Fondriest and Wayne State University. Finally, each WTP community/agency committed to providing funding for long-term equipment maintenance and calibration. This was supported through a group rate by Environmental Consulting & Technology, for regular maintenance and calibration.

SEMCOG worked with the group to finalize the monitoring equipment purchase and installation budgets and develop the associated contractor procurement packet. In late summer 2018, a contractor was selected for the project. Every plant received a YSI EXO-2 Sonde, which has the capacity for six multi-parameter probes. The probes can be varied slightly by community. For example, Monroe is more likely to deal with algal bloom issues, so they requested a Blue Green Algae probe to better monitor for that contaminant. All communities received conductivity and temperature, pH, dissolved oxygen, and turbidity. The sonde is shown in Figure 4.

Figure 4

Meghan Price, of ECT, holding the YSI EXO2 Sonde before installation at the Monroe Water Treatment Plant

In addition to the Sonde, each community also received the coordinating equipment that allows the Sonde to relay information to the WQ Data Live website, where the operators view the results. This includes a cable, data logger, mounting kit, and power adapter. Some communities received a new flow cell to house the Sonde, and some communities needed a USB adapter to allow for internet connectivity. Additionally, all communities received the WQ Data Live annual subscription.

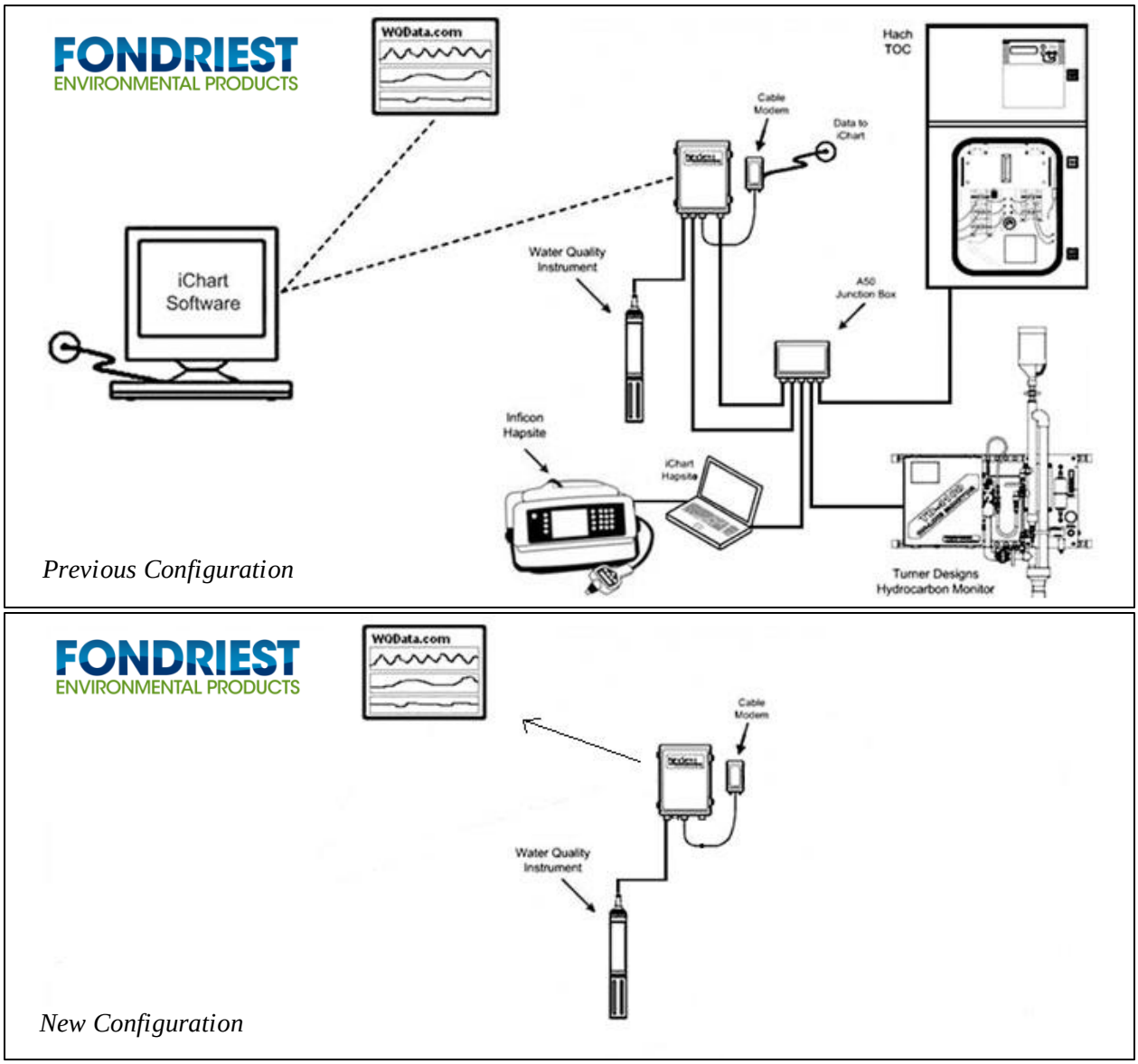
The consulting team, ECT, installed the aforementioned equipment at each treatment plant and intake during the late summer and fall months of 2018. For most WTPs, the existing equipment was modified to include a flow cell for the multi-parameter sonde and a data logger.

Water Quality Data Monitoring and Integration

The past monitoring network allowed for 15-minute real-time access to data. The operators accessed a separate website where the data was stored. That 15-minute delay in data access was too long for some of the facility operations. Some treatment plants have shorter intake pipes leading to shorter reaction times in the event a contaminant enters the intake. Shortening the delay in data access was critical to this project to support public health protections. Contaminants entering any water treatment plant could lead to a facility shut down and cleaning causing increased costs on long-term drinking water operations. An important achievement of this project was to ensure that the operators have ample time to react appropriately in the event contaminants are detected in the source water.

A major upgrade that supported this outcome was simplifying the connectivity from monitoring equipment to the WQ Data Live website. Figure 5 shows the previous configuration of equipment and software and the new relationship between the two.

Figure 5
New software and equipment updates. Courtesy Paul Nieberding, Fondriest



The previous configuration (top of Figure 5) shows all the equipment used to detect various contaminants and how that data was sent to the operators. There were up to four different types of equipment at each plant that connected with a junction box and transferred data to a data logger, which was then sent to a central computer operated by NexSens. From that computer, the data was shared at the WQData.com website, where the other WTPs could view the data. As mentioned previously, the amount of equipment to manage and maintain was too much and part of the reason the network disassembled in the past. To re-establish this network, the operators decided on only a single piece of equipment – the multi-parameter data sonde – that, with upgraded technology, connects directly to the data logger. That data logger now sends the results to the website directly via either a wireless internet or cellular service connection. It's clear in Figure 4 that today's equipment setup is easier to maintain and manage.

Cutting out some of this equipment, in addition to improved technology, has increased the rate at which the operators can see the real-time results. Previously, there was a 15-minute delay. Now, the data is received every two minutes. This offers a faster response time to react to contaminants, if needed.

Once the equipment was installed and calibrated, some of the WTPs did experience some difficulty with the equipment. There were some unexplained drops in data, issues with cellular and wireless internet service, and problems with the data logger resetting. However, ECT, Fondriest, and NexSens worked to get all issues addressed in a timely fashion. As the project moves forward into maintenance mode, we are shifting gears to focus on the sustainability of the system.

One major goal in re-establishing this real-time monitoring network is keeping the network running. The challenges and lessons learned from the previous effort have helped determine what is needed to improve the longevity this time. The letters of commitment and simplification of equipment helped to re-establish the network. Moving forward, the group is focused on setting appropriate alerts when the system detects anything out of the ordinary. In addition to alerts from inside the network, an improved spill notification system for the corridor overall is needed.

Recommendations and Next Steps

With the monitoring network up and running, the following are recommended next steps for the stakeholder group.

- WTP operators will work with ECT to determine appropriate levels for their respective plants in order to set alarms. The alarm notification system allows the operators to be notified via text or email when the sonde records a reading for a parameter that is outside the bounds of what is normally accepted. The operators have background knowledge and familiarity with the parameters, and will select their own alarm notification limits.
- In addition to internal alarm notification efforts, it is recommended that the stakeholder group continue to meet regularly in order to discuss spill notification in the corridor. Both the Coast Guard and EGLE have notification systems, but a standardized system would benefit all parties, and ultimately, the residents of the region. The current system is often delayed, and the WTP operators find out about spills from the local news or from spikes in their monitoring systems. If a standardized notification system were in place, it may prevent reactionary efforts to spills.
- As mentioned previously, this information was presented to the BPAC. Continued communication with that group will ensure coordination across the corridor in both the United States and Canada. In addition to the BPAC, there will be outreach efforts to WTP operators and stakeholders in Canada directly in order to share information on real-time monitoring. If the network could be expanded to include Canadian intake monitoring, it would only strengthen the system. As the stakeholder group continues outreach to various partners, other advisory committees or stakeholder groups may be included.
- As Michigan continues to investigate the PFAS contamination in the state, continued efforts to protect the drinking water will take place. Continued cooperation with the EGLE PFAS Action Team, MPART, will allow the monitoring network stakeholders to stay well-informed of the PFAS rules and actions.
- The Great Lakes Water Authority is facilitating a group of interested parties in a discussion on continued and additional monitoring in the corridor. GLWA, SEMCOG, and Wayne State, as well as regulatory agencies and consulting firms are working together to determine the needs in the corridor and next steps in enhancing the monitoring network.
- SEMCOG will work closely with the stakeholder group to pursue additional funding for this program. Additional funding would allow for longer-term maintenance and operation of the network. Funding could also allow for additional monitoring equipment for new monitoring locations. As the network continues to develop, Wayne State is an ongoing partner in sharing the data results publicly. Additional funding would also allow for that effort to continue.

Appendix A

Example Letter of Commitment

Kathleen Lomako
Executive Director
Southeast Michigan Council of Governments
1001 Woodward Suite 1400
Detroit, MI 48226

RE: Letter of Commitment: Huron to Erie Corridor Drinking Water Monitoring Program

Dear Ms. Lomako:

The purpose of this letter is to confirm the Community's participation in the Huron to Erie Corridor Drinking Water Monitoring Network. This network includes a partnership of the fourteen (14) drinking water treatment plants along this corridor, SEMCOG, the State of Michigan, Counties and Wayne State University working collaboratively to protect public health and ensure coordination regarding regional drinking water challenges.

As a participating member of this network, we recognize that the 2018 Governor's Infrastructure Fund of $375,000 is supporting purchase of new intake monitoring equipment for the drinking water treatment plants along the Huron to Erie Corridor. Additionally, the funds are also securing real-time monitoring capabilities.

The Community is receiving a new multi-probe parameter sonde. Additionally, the first year service for the online database management system, WQDatalive, is provided at an approximate cost of $1,000.

In response to this opportunity, the Community agrees to the following activities in order to support long-term sustainability of the drinking water intake monitoring program:

1. The Community will own the respective equipment and keep it in working order for a minimum of five (5) years.
2. The Community will participate in quarterly meetings, at a minimum, of this monitoring network partnership to review successes, challenges and future opportunities.
3. The Community will ensure regular maintenance and calibration are completed for the above referenced equipment through the following:
    - The Community will contract with a local firm as part of a group rate to perform routine maintenance for the sonde and flourometer (if applicable). This annual cost is estimated at approximately $4,000 for each drinking water treatment plant and includes the following:

      Annual service of WQData live after the first year, replacement of pH/ORP sensors (life span just over 1 year), replacement bulbs for fluorometer (1 year life span) (if applicable), 2 plant visits for calibration, and 2 calibrations that will be centrally located (during stakeholder meetings), tracking of equipment readings online to watch for erroneous readings/equipment

issues (1 hour per week total). This does NOT include equipment troubleshooting, which could be a separate task set up in the contract phase.

Finally, we look forward to this opportunity and strengthening this partnership into the future. If you have any questions regarding our participation, please contact water treatment plant operator.

Sincerely,

Name

Title

SEMCOG Officers 2020-2021

Donald Hubler
Chairperson
Trustee,
Macomb Intermediate
School District

Brenda Jones
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President,
Detroit City Council

Chris Barnett
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Kathleen Lomako
Executive Director