



Testimony

Of

Suzanne R. Coffey, P.E.

Chief Executive Officer

Great Lakes Water Authority

March 12, 2024

1 My name is Suzanne Coffey, and I am the Chief Executive Officer of the
2 Great Lakes Water Authority. As GLWA's CEO I was selected through, and
3 supported by, the utility's Board of Directors which consists of 6 members: one
4 each from Wayne, Oakland, and Macomb Counties, two from the City of Detroit,
5 and one selected by the Governor. I am an engineer by training and a public
6 servant by avocation. Although I have over 20 years of experience in the water
7 service sector, this is my first opportunity to testify before a legislative
8 committee, so please bear with me.

9 In this testimony, I will; tell you a little about the Great Lakes Water
10 Authority (or GLWA as we are often called), address affordability and assistance,
11 our infrastructure needs, our requests for your assistance with those needs, and
12 finally, speak to you a little about water quality. I have attached exhibits to my
13 presentation and will be happy to answer your questions and address any other
14 matters of interest to you.

15 The Great Lakes Water Authority is the largest provider of water and sewer
16 treatment services in the State of Michigan and one of the largest water utilities
17 in the United States of America. GLWA was created as a part of the City of
18 Detroit's bankruptcy proceedings and operates the regional assets owned by the
19 City of Detroit through 40-year lease agreements. While the leases provide for
20 their renewal, should they conclude, the leased assets are returned and remain
21 the property of the City of Detroit.

22 Together with our 88 member partners who represent 115 communities,
23 GLWA provides drinking water of unquestionable quality to approximately 39
24 percent of Michigan's population or 3.9 million people. Our service area covers
25 approximately 1,700 square miles and is located within Genesee, Lapeer,
26 Macomb, Monroe, Oakland, St. Clair, Washtenaw, and Wayne Counties. We
27 operate five water treatment facilities, approximately 800 miles of transmission
28 mains, and maintain three freshwater intakes located between Lake Huron and
29 Lake Erie. We are pleased to inform you that the City of Mt. Clemens in Macomb
30 County has decided to join GLWA, and we look for to their participation as a
31 member partner community.

32 Together with our 18 member partners who represent 79 communities,
33 GLWA provides safe and sanitary wastewater collection and disposal services to

1 approximately 28 percent of Michigan's population or 2.8 million people. Our
2 wastewater service area covers approximately 950 square miles. Within that
3 service area GLWA operates 200 miles of trunk sewers and interceptors, including
4 eight combined sewer overflow prevention facilities often called CSOs, and
5 GLWA's Water Resource Recovery Facility, which is understood to be the largest
6 single-site wastewater treatment facility in the United States.

7 As a large utility, GLWA takes seriously its commitment to water quality and
8 supporting our member partner communities' operations. We provide diverse
9 services to those municipalities at no additional charge ranging from water quality
10 testing to an artificial intelligence program that helps support our member
11 partner communities' management of their local water systems, to workforce
12 development training. Speaking of workforce development, I want to again
13 acknowledge the almost 1,000 essential workers employed by GLWA who worked
14 each day during the COVID-19 pandemic ensuring that water kept flowing and the
15 residents of southeast Michigan did not have to worry when they turned on their
16 taps or flushed their toilets. I am also proud to note that GLWA's Chief Operating
17 Officer for Water and Field Services, Ms. Cheryl Porter, is the president-elect of
18 the American Water Works Association and will assume the presidency later this
19 year. She is the first African American and the first woman of color to be elected
20 to serve in that capacity in the American Water Works Association's over 100
21 years history. We are very proud of Cheryl and the entire GLWA team!

22 With that brief introduction to GLWA, I would like to turn to affordability
23 and assistance. Traditionally, for water utilities, affordability has been linked with
24 asset management. The theory being that a utility could balance the need to
25 maximize asset life with the need to replace assets in time to avoid the
26 disruptions caused by main breaks or other asset failure. GLWA has a robust asset
27 management program and currently spends almost \$350 million dollars per year
28 on capital projects. These capital projects are an important component to our
29 regional economy and job creation. (A PowerPoint presentation outlining GLWA's
30 funding priorities is attached as Exhibit 1 to my testimony. When thinking of
31 affordability, it is important to note that for the 8-year period from the July 1,
32 2017, start of GLWA's fiscal year 17-18 through the June 30, 2025, end of the
33 upcoming 24-25 fiscal year, GLWA's annual charge adjustments to its member
34 partner communities have averaged just over two percent for water (2.3%) and

1 just above 1 percent (1.2%) for wastewater. This is well below the Utility Rate
2 Index benchmark, as well as inflation, and the consumer price index during this
3 period.

4 Even with all of GLWA's efforts and the positive results we have seen
5 regarding maintaining long-term affordability, we all recognize that, no matter
6 how affordable, there are customers of our member partner communities who
7 still need assistance. The federal court order that formed GLWA provided for the
8 Water Residential Assistance Program or WRAP as it's called, that is permanently
9 funded on an annual basis at a one-half of one percent (0.5%) of GLWA's
10 revenues. We understand that poverty knows no zip code and this program is
11 available to eligible residents within GLWA's member partner communities.
12 (Material on the WRAP program is attached as exhibit 2 to my testimony.) Under
13 the leadership of our Board of Directors, we have expanded eligibility to our
14 WRAP program to individuals with household incomes less than 200 percent of
15 the federal poverty guidelines and provided for conservation measures that allow
16 residents to replace that leaky toilet or faucet that unnecessarily consumes water
17 and unnecessarily restrict their ability to pay their bills. Most recently, GLWA has
18 modified the WRAP to include an Income Based Plan, aligning assistance with a
19 household's ability to pay and eliminating some of the administrative burden that
20 WRAP enrollment could place on smaller member partner utilities. GLWA believes
21 that these changes will make our WRAP assistance even more effective and help
22 WRAP to continue as a contributing factor toward supporting short-term
23 affordability efforts.

24 As we focus on Michigan's needs for assistance for customers with
25 immediate financial needs, I am pleased to advise you that GLWA and its Board of
26 Directors have gone on record expressing support for the affordability legislation
27 that Senator Chang and many others within this legislature and our communities
28 have worked so diligently on.

29 Affordability and assistance matter. And while GLWA is a large utility, we
30 are solely funded by fees from the communities we serve. GLWA recognizes that
31 long-term affordability requires commitment both to local and regional
32 infrastructure. However, in a time of unprecedented infrastructure investment
33 grants across this nation, we cannot simply say to the 40 percent of Michigan's

1 population served by GLWA's regional infrastructure, "You must go it alone." As a
2 state, during a time of historic federal investment, Michigan has allocated just \$5
3 million dollars to regional water infrastructure and \$25 million to regional
4 wastewater infrastructure. We must do more. GLWA, our member partners, and
5 the millions of residents we serve need your help.

6 While your help may come in the form of general assistance within
7 specified guidelines, i.e., to assist the regional wastewater system with flood
8 mitigation projects or the water system with transmission system and water
9 quality improvements, GLWA has also identified specific projects that we would
10 recommend for your consideration.

11
12 Our first request for appropriation assistance is our Freud and Connors
13 Creek Pump Station improvements. These pump stations play critical roles in
14 reducing the likelihood of basement backups on the east side of Detroit, the
15 Grosse Pointe communities, Harper Woods, and St. Clair Shores during major rain
16 events. The proposed work will allow the pumps to engage earlier in a rain event
17 improving the system's ability to process a storm surge. As with the chemicals we
18 buy and the infrastructure we build, inflation has almost doubled the cost of this
19 project. We have actively worked to reduce costs and now anticipate a cost of
20 \$464.1 million associated with the project and are requesting an appropriation to
21 assist with those costs. (I have attached a 1-page summary of the Freud and
22 Connors Creek pump station improvements project appropriation request to my
23 testimony as Exhibit 3.)

24 The second request for appropriation assistance supports GLWA's
25 Oakwood District Intercommunity Relief Sewer modification project. This project
26 will allow GLWA to divert flow from our Northwest Interceptor Sewer to a pump
27 station in the southwest portion of our system called the Oakwood Pump Station
28 and to the Oakwood Retention Treatment Basin during significant rain events. The
29 project benefits Dearborn, Detroit, Melvindale, Allen Park and 12 communities in
30 Wayne County's Rouge Valley Sewage Disposal System. This project will reduce
31 sewer flow levels and flooding risk for the Southfield Freeway and other parts of
32 Dearborn. Equally important, the project provides additional wastewater
33 retention and treatment capabilities if GLWA's WRRF's treatment ability was

1 interrupted or somehow unavailable. Put simply, the project provides additional
2 protection for our Great Lakes, and we are requesting an appropriation to assist
3 with the cost of this project. (I have attached a 1-page summary of the Oakwood
4 District Intercommunity Relief Sewer modification project appropriation request
5 to my testimony as Exhibit 4.)

6 Before leaving the Oakwood District Intercommunity Relief Sewer
7 modification project, I want to point out how inflation has impacted the Oakwood
8 project. Inflation increased the cost of this one project from an initial cost
9 projection of \$53.4 million dollars two years ago to \$83.5 million this year.

10 GLWA's third and final request is for the Fox Creek Enclosure condition
11 assessment project. The Fox Creek Enclosure is infrastructure that supports
12 southeast Macomb County, including St. Clair Shores, northeast Wayne County,
13 including the Grosse Pointes and Harper Woods. Before going further, I should
14 point out that this facility is neither owned nor operated by GLWA. However, its
15 owner has requested that GLWA consider accepting the infrastructure as a part of
16 the regional system. While GLWA is open to that request, the facility must be
17 assessed to determine what cleaning and/or repairs are necessary to optimize the
18 operations of the Enclosure and the costs associated with those actions. GLWA is
19 requesting an appropriation to support the \$25 million dollar estimated cost of
20 this project. (I have attached a 1-page summary of the Fox Creek Enclosure
21 condition assessment project appropriation request to my testimony as Exhibit 8.)

22 Throughout this testimony, I have spoken about affordability. I have
23 mentioned the need to support regional and local infrastructure. I have also
24 mentioned the need to support affordability through short-term customer
25 assistance through programs such as GLWA's Water Residential Assistance
26 Program as well as the water affordability legislative package before you and
27 long-term affordability which can only be accomplished through regular
28 investment in water infrastructure.

29 As I close this testimony, I think it is important that we remember why we
30 do those things: water quality. Water quality is essential to public health. If we do
31 not protect the quality of Michigan's water from the Great Lakes that drive our
32 economy as well as the water we drink from our faucets, any other conversation
33 is lost. At GLWA, we are proud to support our Great Lakes and our residents. We

1 are proud that PFAS registers as a “non-detect” in the source water GLWA uses
2 for its drinking water, that GLWA has significantly reduced phosphorus discharges
3 into the Detroit and Rouge Rivers, that through our regional partnerships we were
4 able to continue the supply of quality water to Flint during the 120-inch main
5 break we experienced two years ago. Mostly importantly, we are proud to say
6 that wherever we travel, individuals familiar with southeast Michigan remark
7 about the great taste of great lakes water.

8 Thank you for allowing me to submit this testimony to the committee today
9 and to outline the regional water system’s infrastructure and affordability needs.

10 I look forward to working collaboratively with you as we address these important
11 issues to protect our Great Lakes and the communities we serve. I join you in
12 recognizing the importance of these efforts, not only for ourselves and our
13 families, but for future generations.

14 Respectfully submitted,

15 
16

17 Suzanne R. Coffey P.E.

18 Chief Executive Officer

19 Great Lakes Water Authority

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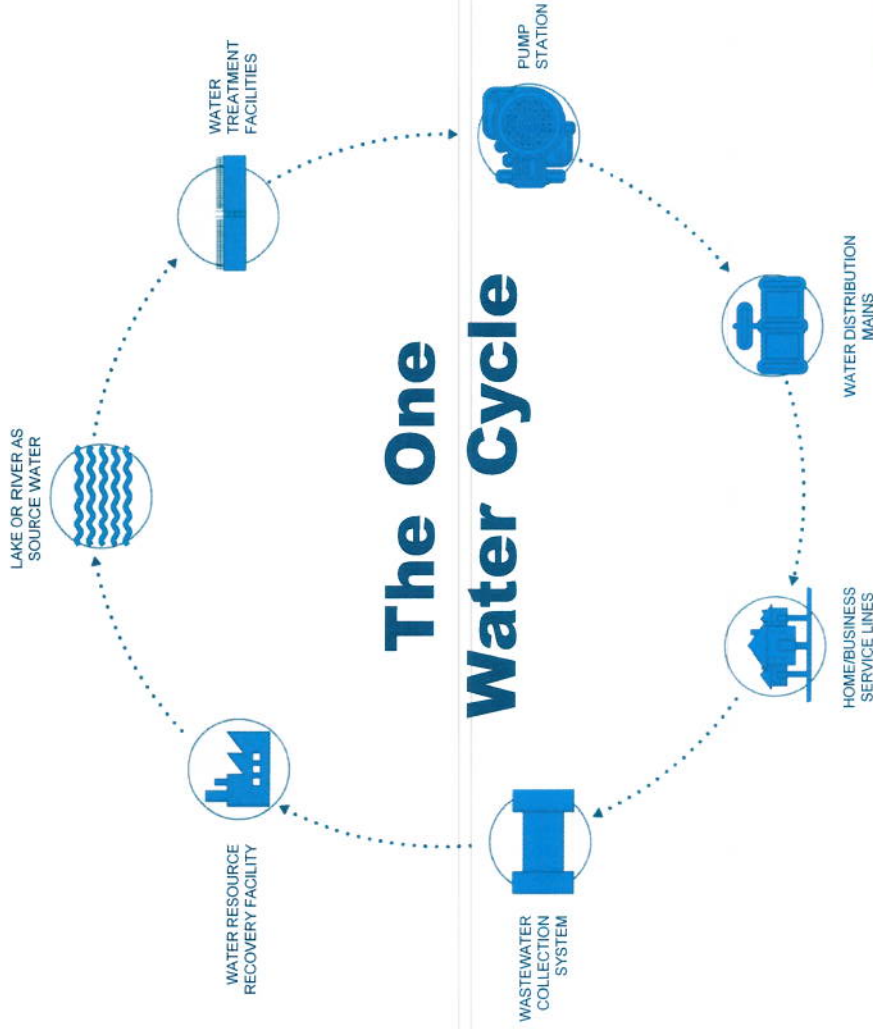
EXHIBIT 1



Great Lakes Water Authority
Funding Priorities
February 27, 2024

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**.



Overall Funding Priorities

#	SYSTEM	Name	Benefit	Total Cost	Funding Request
1	WASTEWATER	Frued & Conners Creek Pump Station Improvements	<ul style="list-style-type: none"> Pump Station Reliability & Resiliency Improve System Hydraulics for Flood Mitigation 	\$464.1M	\$98.9
2	WASTEWATER	Oakwood District Intercommunity Relief Sewer Modification	<ul style="list-style-type: none"> Improve System Hydraulics for Flood Mitigation Optimize Use of Existing Infrastructure 	\$81.4M	\$40M
3	WATER	Total Organic Carbon Enhanced Conventional Water Treatment	<ul style="list-style-type: none"> Water Quality 	\$2.0	\$2.0
4	WATER	24 Mile Road, 36-inch Transmission Main Condition Assessment	<ul style="list-style-type: none"> Resiliency Optimize Use of Existing Infrastructure 	\$4.5M	\$4.5M
5	WASTEWATER	Fox Creek Enclosure Condition Assessment	<ul style="list-style-type: none"> Improve System Hydraulics for Flood Mitigation Optimize Use of Existing Infrastructure 	\$5.0M	\$5.0M

Overall Funding Priorities (Continued)

#	SYSTEM	Name	Benefit	Total Cost	Funding Request
6	WATER	96-Inch Water Transmission Main Relocation and Isolation Valve Installation	<ul style="list-style-type: none"> • Resiliency & Redundancy • Water Quality 	\$237.6M	\$142.4M
7	WATER	Downriver Transmission Main Loop	<ul style="list-style-type: none"> • Resiliency & Redundancy • Improve System Hydraulics • Optimize Use of Existing Infrastructure 	\$69.8M	\$38.7M
8	WASTEWATER	Rehabilitation of 7 Mile Road Sewer System	<ul style="list-style-type: none"> • Improve System Hydraulics for Flood Mitigation • Water Quality Protection • Optimize Use of Existing Infrastructure 	\$31.75M	\$31.75M

Overall Funding Priorities Summary

System	Total Project Cost	GLWA Funding Request
Water Total:	\$313.8M	\$187.6M
Wastewater Total:	\$602.3M	\$156.8M
Overall Total:	\$916.1M	\$344.4M

GLWA's Wastewater System

GLWA **Wastewater System**
Great Lakes Water Authority

WRRF The largest single-site wastewater treatment facility in the U.S.

207 miles of trunk sewers & interceptors

2.8 MILLION PEOPLE SERVED

18 Member Partners across **79** communities

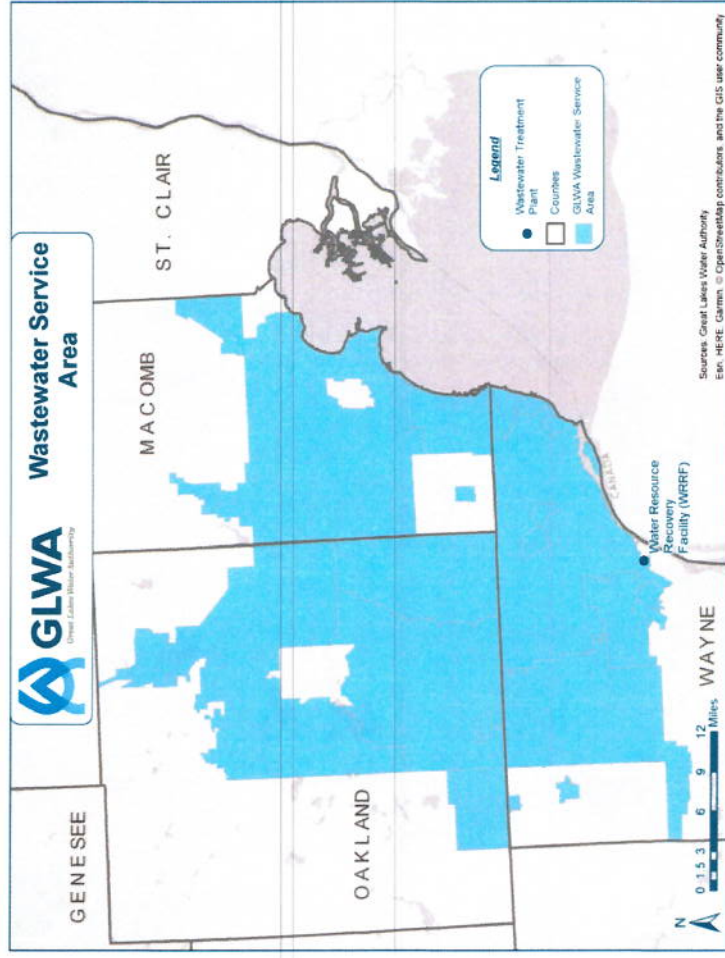
Treatment capacity of **1,700** million gallons per day

9 CSOS

3 Interceptors

9 PUMP STATIONS

953 SQ. MILE service area



Funding Priorities: WASTEWATER

#	Name	Benefit	Total Cost	Funding Request
1	Frued & Conners Creek Pump Station Improvements	<ul style="list-style-type: none"> Pump Station Reliability & Resiliency Improve System Hydraulics for Flood Mitigation 	\$464.1M	\$98.9M

Summary Description:

The primary objective of this project is to study the overall performance of the Conners Creek (CCPS) and Freud (FPS) sewage pumping stations and develop, design, and build an operational strategy to optimize the utilization of interconnected piping and operation between both pumping stations and the Conner Creek Retention and Treatment Basin (RTB).

This project will evaluate alternatives, design and construct a system with a more optimized operational strategy to operate the CCPS pumps simultaneously with the FPS pumps allowing for earlier discharge from the CCPS than is currently designed and operated.

Benefit:

While these stations have been operated as designed, the planned modifications to these facilities including the simultaneousness operation of both pump stations would reduce the upstream impacts witnessed during recent intense rain events. This project would optimize the operational strategy at GLWA's Conners Creek and Freud pump stations to reduce the hydraulic grade line upstream of these stations and therefore will reduce the risk of large scale basement flooding and loss of sanitary sewer service which is an essential requirement for public health. Therefore, increasing resiliency significantly reduces this risk.

Funding Priorities: WASTEWATER

#	Name	Benefit	Cost	Funding Request
2	Oakwood District Intercommunity Relief Sewer Modification	<ul style="list-style-type: none"> Improve System Hydraulics for Flood Mitigation Optimize Use of Existing Infrastructure 	\$81.4M	\$40.0M

Summary Description:

The Oakwood District comprises 1,520 acres in the southwest portion of the City of Detroit and sits adjacent to the Rouge River. Some areas are situated in relatively low-lying, flood prone topographies. The Oakwood Pump Station (PS) and combined sewer overflow (CSO) RTB are currently under-utilized. In the meantime, surcharging in the Northwest Interceptor (NWI) has increased CSOs and reduced wastewater customers' ability to discharge into the NWI. The concept to isolate the downstream portion of the NWI from the Water Resources Recovery Facility and divert flow to the Oakwood PS was evaluated and refined as part of GLWA's 40-year Wastewater Master Plan that was completed in 2020.

Improvements to the Oakwood District Sanitary Sewer System and the implementation of various projects include: 1) Clean & Inspect Trunk Sewers, 2) Analysis and improvement of Oakwood PS/RTB operations, 3) Second influent sewer to Oakwood PS, and 4) NWI Diversion for CSO Control. The work includes basis of design (study) report on alternative solution to proposed Oakwood District Intercommunity Relief Sewer, diversion of storm water flow, and construction of the emerging projects.

Benefit:

Interconnecting the Oakwood RTB and NWI will directly assist GLWA and member partner communities in reducing physical damage by maintaining existing wet weather contract capacities and increasing GLWA's ability to provide adequate CSO treatment during extreme storm events. This project is the preferred alternative wet weather relief sewer modification that will serve to mitigate basement and street flooding in the District and surrounding communities and otherwise provide increased flow transport and treatment for economic, ecologic, and societal benefit of customers in the District.

Funding Priorities: WASTEWATER

#	Name	Benefit	Cost	Funding Request
5	Fox Creek Enclosure Condition Assessment	<ul style="list-style-type: none"> Improve System Hydraulics for Flood Mitigation Optimize Use of Existing Infrastructure 	\$25.0M	\$5.0M

Summary Description:

The Fox Creek Enclosure is a Wayne County Chapter 4 Drain, which sends wastewater flows to GLWA from several of the Grosse Pointes. Based on information and belief, the Enclosure has not been inspected since 2012. In 2022, Wayne County made a presentation to GLWA that included the option of relinquishing the Enclosure to GLWA. GLWA recommended that an updated inspection, condition assessment and optimization be completed before there is further discussion of a potential transfer of the Enclosure. The inspection, assessment and optimization of the Enclosure benefit communities that were significantly impacted by the June/July 2021 Rain Events.

Benefit:

Because the Fox Creek Enclosure has not been inspected in over 10 years, the exact condition is unknown. Understanding and improving the condition of the Enclosure will ensure and improve upon wastewater system hydraulics for several communities that contribute flow to this system. This condition assessment will identify areas that require maintenance and sediment removal, as well as identify areas needed for structural renewal to avoid catastrophic failure. These efforts are the first phase in improving hydraulic capacity and prevent costly, long-term outages.



Funding Priorities: WASTEWATER

#	Name	Benefit	Cost	Funding Request
8	Rehabilitation of 7 Mile Road Sewer System	<ul style="list-style-type: none"> Improve System Hydraulics for Flood Mitigation Water Quality Protection Optimize Use of Existing Infrastructure 	\$31.75M	\$31.75M

Summary Description:

The Great Lakes Water Authority (GLWA) wastewater conveyance system consists of over 180 miles of large diameter collector and interceptor sewers which convey wastewater flows from member communities outside of Detroit to the Water Resource Recovery Facility located in southwest Detroit. GLWA has identified portions of the 7 Mile Sewer, the East 7 Mile Relief Sewer, and the West 7 Mile Relief Sewer that are in need of repair and rehabilitation to extend the service life of these sewers by 25 to 30 years. The scope of the project is to repair and rehabilitate approximately 25,000 feet of the 7 Mile Sewer, approximately 15,000 feet of the East 7 Mile Relief Sewer, and approximately 6,000 feet of the West 7 Mile Relief Sewer, all located within the City of Detroit. Sewer repairs are proposed to consist of the following: debris/sludge removal, manhole frame and cover replacement, spot repairs consisting of deep concrete repair, open joint repair, epoxy crack repair, tuckpointing, deteriorated brick repair, chemical grouting of leaks, removal of mineral deposits and roots, and rough tap repairs, and structural repairs within Segment 3 of the 7 Mile Sewer.

Benefit:

This project is a priority for the community due to the advanced age of the sewer system and the degradation observed during the design of the project. The goals are to extend the service life of the sewer system by 25-30 years, prevent negative hydraulic impacts (e.g. basement flooding), and protect the surrounding roadway, environment, utilities, homes, businesses, and other infrastructure from damage that could occur if the sewer system fails.

GLWA's Water System

GLWA
Great Lakes Water Authority

Water System

3.9 MILLION
PEOPLE SERVED

5 Treatment Plants

88 Member Partners
across **115** communities

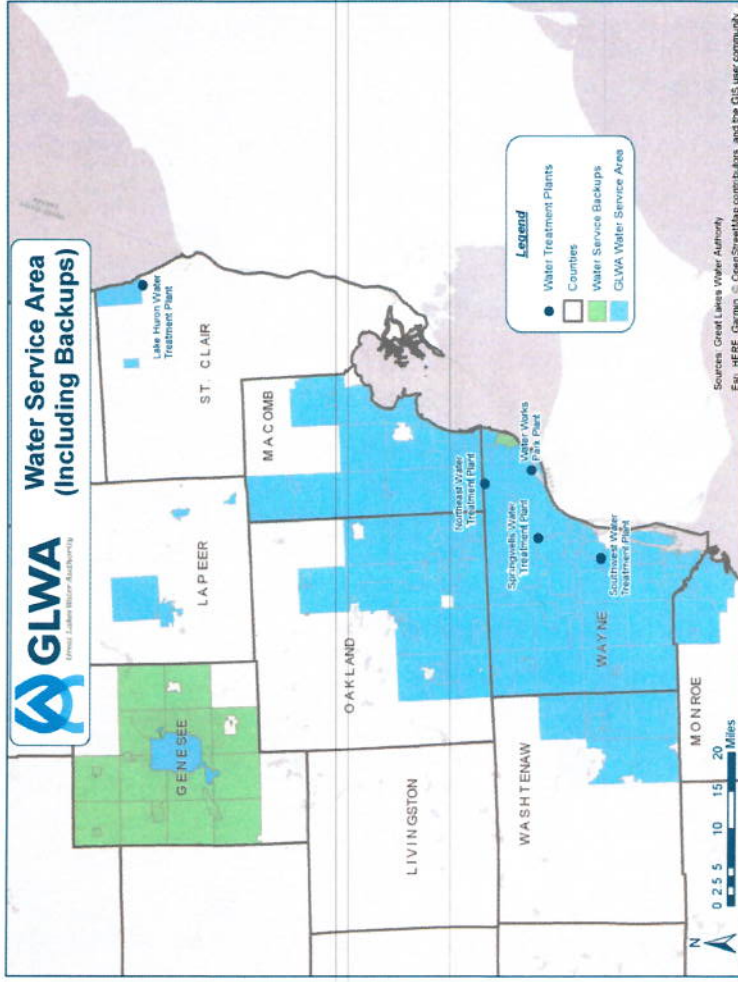
3 Water Intakes

797 miles of
transmission main

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

19 BOOSTER
PUMP STATIONS

4,674 SQ. MILE
service area



Funding Priorities: WATER

#	Name	Benefit	Cost	Funding Request
3	Total Organic Carbon Enhanced Conventional Water Treatment	<ul style="list-style-type: none"> Water Quality Protection 	\$2.0M	\$2.0M

Summary Description:

Natural organic matter, NOM, is introduced in water sources through interactions between the hydrologic cycle, biosphere, and geosphere. Total organic carbon, TOC, has been widely used to quantify and evaluate the total amount of NOM and particulate carbon in environmental water. TOC is not directly associated with causing dangers to human health, but its determination and control is important because TOC is a known precursor to disinfection byproducts (DBPs). Based on the recent increases in organic matter within the source water, water quality and regulatory concerns exist and must be evaluated to determine the best treatment techniques to ensure water of unquestionable quality. The proposed research will investigate the effects of enhanced conventional water treatment at GLWA Water Works Park Water Treatment Plant for improving organic matter removal in finished water and distribution waters at different climate seasons. The aim of this proposed work is to characterize seasonal effects on the natural organic matter present in the source water, optimize treatment processes for enhanced removal of organic carbon at different seasons and water quality, and examine the impact of selected treatment procedures and techniques on the water quality in the distribution network and building plumbing.

Benefit:

This proposed work will examine the application of enhanced coagulation for TOC removal and treatment techniques and processes that can be implemented to adjust to the seasonal effect on organic matter levels in raw water. Currently at the WWPTP, chlorine dose is increased post treatment when ozonation process is not in use. This study will also provide guidelines and recommendations that can be implemented in other drinking water treatment utilities. In addition, this study will also examine the impact of treatment changes and processes on the distribution system networks and building plumbing in terms of chemical and biological stability.

Funding Priorities: WATER

#	Name	Benefit	Cost	Funding Request
4	24 Mile Road, 36-inch Transmission Main Condition Assessment & Renewal	<ul style="list-style-type: none"> • Resiliency • Optimize Use of Existing Infrastructure 	\$4.5M	\$4.5M

Summary Description:

The 36-inch diameter transmission main is a GLWA pipeline that runs from the Rochester Booster Pump Station in Shelby Township along 24 Mile Road to Gratiot Avenue in Macomb Township, then extends north and east providing service to 10 member partners within Macomb County. The pipeline is constructed of prestressed concrete cylinder pipe. The portion of this pipeline from the Rochester Booster Pump Station to Fairchild Road was installed in the early 1970's and has experienced 12 breaks and leaks on the pipeline since 1995. The pipeline experienced two breaks this past summer resulting in a boil water advisory and other member partner impacts. A condition assessment and strategic pipeline renewals is planned for 11.5 miles of the pipeline. This project will provide condition data to allow GLWA to develop a renewal program to address individual distressed pipe segments of the overall pipeline.

Benefit:

Because this pipeline services many member partners and has a history of pipeline failures, it is rated one of the top 10 pipelines in GLWA's Transmission System Integrity Program (TSIP) risk model developed in 2018. That evaluation identified this segment as having a high consequence and likelihood of failure. Performing a condition assessment will allow GLWA to plan for needed pipeline renewals to significantly reduce the consequence and likelihood of failure. Performing a condition assessment on this pipeline allows GLWA to develop renewal plans to improve resiliency and optimize the life of this critical pipeline. Based on industry standard distress rates, it appears that condition assessment and associated individual pipeline renewals is significantly more cost effective than a complete replacement of this pipeline that is estimated at approximately \$130 million.

Funding Priorities: WATER

#	Name	Benefit	Cost	Funding Request
6	96-Inch Water Transmission Main Relocation and Isolation Valve Installation	<ul style="list-style-type: none"> • Resiliency & Redundancy • Water Quality Protection 	\$237.6M	\$142.4M

Summary Description:

This project includes the relocation of 2.5 miles of 96-inch transmission main currently located in an EPA regulated landfill site. In addition, because this transmission main only has one isolation valve along its 34-mile reach, additional isolation valves will be constructed to be able to isolate segments of the main between Imlay Pump Station and North Service Center (NSC) Pump Station for maintenance and renewal while maintaining customer expected level of service. Another section of parallel main will be constructed along the 96-inch main between NSC and Almont Township's master meter to facilitate continuation of service during construction, as well as to provide a long-term solution to provide a redundant water supply to those member partners served from the 96-inch main north of Romeo.

Benefit:

This project is critical to improve water supply levels of service by providing improved isolation capabilities and additional redundancy to the Lake Huron WTP supply in areas along the transmission main, while protecting the water supply from potential contamination at the former G&H Industrial Landfill site by relocating the transmission main outside of the influence of the existing superfund landfill.

Funding Priorities: WATER

#	Name	Benefit	Cost	Funding Request
7	Downriver Transmission Main Loop	<ul style="list-style-type: none"> • Resiliency & Redundancy • Improve System Hydraulics • Optimize Use of Existing Infrastructure 	\$69.8M	\$38.7M

Summary Description:

The scope of work generally includes the installation of approximately 4 miles of 16-inch transmission main and 5 miles of 24-inch transmission main paralleling the existing Allen Road/Dixie Highway transmission main and 4 miles of 30-inch transmission main along Inkster road between Wick and Pennsylvania road. This will provide redundancy to the Downriver communities of Brownstown, Riverview, Woodhaven, Trenton, Flat Rock, Gibraltar, Rockwood, South Rockwood, Berlin Township, and Grosse Isle. The project's scope will also include the demolition of the Electric Avenue Booster Pumping Station reservoirs, as well as replacement of the city of Trenton's billing meters.

The 2015 Water Master Plan Update included a recommendation to evaluate options along this branch of the system to increase redundancy. A hydraulic analysis was performed that evaluated alternatives and this approach was determined to be the best alternative.

Benefit:

The Downriver Transmission Main that currently serves Brownstown, Riverview, Woodhaven, Trenton, Flat Rock, Gibraltar, Rockwood, South Rockwood, Berlin Township, and Grosse Isle is a single feed transmission system. If a disruption to service were to occur on this transmission main, many of the users in this area would experience a complete loss of pressure and flow. This project would provide a transmission main loop to the Downriver system to provide redundancy on this branch of the system.

EXHIBIT 2

NEED ASSISTANCE WITH YOUR WATER BILL?

WRAP CAN HELP!

The Water Residential Assistance Program provides funding to eligible, low-income households. Funding is provided by the Great Lakes Water Authority and is administered in partnership with local community action agencies.

WRAP can help reduce your water bill and pay past due balances!

WRAP Eligibility:

- Reside within an eligible GLWA Member Community (see reverse side for list)
- Responsible for paying your water bill
- At or below 200% of the federal poverty level
- Own or rent your home

200% Federal Poverty Chart

Number of Household Members	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Income Limit (\$)	30,120	40,880	51,640	62,400	73,160	83,920	94,680	105,440	110,820	116,200	121,580	126,960	132,340	137,720

Visit glwater.org/assistance to learn more!



WRAP Eligible Communities

Allen Park	Ferndale	Madison Heights	Southfield Township
Almont	Flat Rock	Mayfield Township	Southfield, City of
Ash Township	Flint	Melvindale	Southgate
Auburn Hills	Fraser	New Haven	St. Clair Shores
Augusta Township	Garden City	Northville Township	Sterling Heights
Belleville	Gibraltar	Northville, City of	Sumpter Township
Berkley	Grosse Ile Township	Novi	Superior Township
Berlin Township	Grosse Pointe	Oak Park	Sylvan Lake
Beverly Hills	Grosse Pointe Farms	Orchard Lake	Taylor
Bingham Farms	Grosse Pointe Park	Orion Township	Trenton
Birmingham	Grosse Pointe Shores	Pittsfield Township	Troy
Bloomfield Hills	Grosse Pointe Woods	Pleasant Ridge	Utica
Bloomfield Township	Hamtramck	Plymouth Township	Van Buren Township
Brownstown Township	Harper Woods	Plymouth, City of	Walled Lake
Bruce Township	Harrison Township	Pontiac	Warren
Burchville Township	Hazel Park	Redford Township	Washington Township
Canton Township	Huntington Woods	River Rouge	Waterford Township
Center Line	Huron Charter Township	Riverside	Wayne, City of
Chesterfield Township	Inlay City	Rochester	West Bloomfield Township
Clawson	Inkster	Rochester Hills	Westland
Clinton Township	Keego Harbor	Rockwood	Weston
Commerce Township	Lake Orion	Romco	Woodhaven
Dearborn	Lapeer	Romulus	Ypsilanti Township
Dearborn Heights	Lathrup Village	Roseville	Ypsilanti, City of
Eastpointe	Lenox Township	Royal Oak Township	
Ecorse	Lincoln Park	Royal Oak, City of	
Farmington	Livonia	Shelby Township	
Farmington Hills	Macomb Township	South Rockwood	

City of Detroit Residents may be eligible for the DWSD Lifeline Plan.
 Call **313-386-9727** or visit www.WayneMetro.org/DWSDLifeline



Water Residential Assistance Program

Take control of your water and sewer bill with WRAP!

WHAT IS WRAP?

The Water Residential Assistance Program (WRAP) provides income-based water and sewer bill credits, payment of past due balances and minor plumbing repairs!

Eligible, low-income households can have their homes checked for leaks, learn how to reduce their bill, and have non-functioning plumbing repaired or replaced.

Examples of minor plumbing repairs include:

- Repair or replacement of toilets, faucets, sinks, showers or bathtubs
- Installation of low flow fixtures
- Replacement of lead fixtures
- Other minor repairs in the kitchen, bathroom, and utility room

HOW DO I ENROLL?

Contact your local WRAP Service Delivery Partner today!

See reverse side for ways to connect or visit www.glwater.org/assistance to learn more!

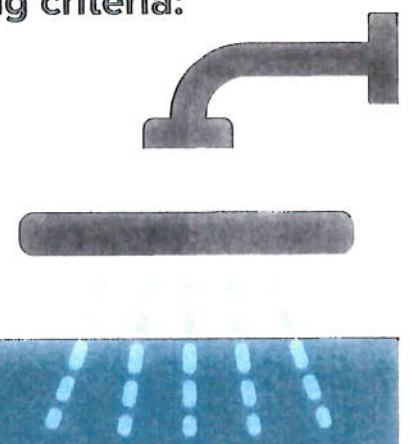
Learn more at glwater.org/assistance



WHO IS ELIGIBLE?

Households are eligible for WRAP if they meet the following criteria:

- Reside within the GLWA service area
- Demonstrate household income at or below 200 percent of the federal poverty level
- Establish they are responsible for the water or sewer bill
- Reside in the home they own or rent



Served by Macomb Community Action:

- Lapeer County
- Macomb County
- St. Clair County

Call (586) 469-6464



Served by United Way for Southeastern Michigan:

- Oakland County

Call (248) 983-5656



Served by Wayne Metropolitan Community Action Agency:

- Monroe County
- Washtenaw County
- Wayne County
- City of Flint

Call (313) 386-9727

Flint residents call (810) 510-9727



Learn more at glwater.org/assistance





Water Residential Assistance Program

New WRAP Income Based Plan

- **Goal:** After Income Based Plan credits are applied, a resident's budget for water and sewer bill is limited to three percent of their household's income
- **Each Household is Unique:** The amount of the credit is based upon each household's water and sewer bill and income
- **Past Due Bill Assistance:** Household will receive past due bill or back payment assistance up to \$1,200 in year one and year two, if needed
- **Reduce the Bill:** Minor plumbing repairs and home water usage audit to help lower the bill and create a healthy home - a key factor for many households
- **Proactive Assistance:** Enroll if you meet the income level criteria - no need to wait for a shut-off notice or a past due bill
- **Assistance Period:** No limit if senior citizen or permanently disabled; all others are eligible for up to two years
- **Case Management Focus:** Service delivery partners are ready to assist and provide guidance on other programs - whether a household has short term or longer term needs

Here's an example: A household that has an annual income of \$10,000 and an average annual bill amount of \$1,000, is now eligible for \$700 annually in bill credits. This means their annual cost is now \$300 rather than \$1,000 because of the three percent goal (household cost is now 3% of \$10,000, or \$300).

Previously, the household would have received \$25 in monthly bill credits no matter how high the bill or \$300 per year in assistance rather than \$700 per year in assistance.

EXHIBIT 3



FREUD & CONNERS CREEK PUMP STATION IMPROVEMENTS

The Freud & Connors Creek Project provides a significant opportunity to improve the operation of the regional sewer system and support flood mitigation.

BACKGROUND:

- Detroit's Jefferson-Chalmers community is a large residential community located on the Detroit River adjacent to the Grosse Pointes.
- As the Detroit River level has risen in recent years much of the housing in this community is located below the water level, increasing the likelihood of flooding in rain events exceeding system design events.
- The risk of flooding is compounded because much of the soil in this area is clay-based which does not easily absorb rainfall.
- The Freud and Connors Creek pump stations serve Jefferson-Chalmers, the Grosse Pointes, and southern Macomb Counties during rain events.
- This project will improve the ability of these facilities to operate effectively and efficiently during wet weather reducing the risk of flooding for the Grosse Pointes, Southern Macomb County, and Detroit by optimizing the ability of the regional system to accept flow and to transport flow through the Detroit River Interceptor sewer to GLWA's Water Resource Recovery Facility (WRRF) for treatment.
- As part of this project, GLWA has purchased land adjacent to the Connors Creek pump station in order to replace that station when it reaches the end of its useful life and has ordered vertical turbine pumps for that facility.
- The vertical turbine pumps will allow the Connors Creek pump station to begin operating earlier in rain events more quickly removing storm flow from the regional sewer system.

BENEFITS:

- **Resiliency:** Optimizes the ability of the regional sewer system to handle storm flow in during wet weather events.
- **Resiliency:** Reduces the possibility of system surcharges in wet weather events.
- **Flood Mitigation:** Provides additional ability for the regional sewer system to accept local flow during wet weather events lowering the risk of back-ups and flooding.
- **Flood Mitigation/ Resiliency:** Change in design will allow regional pumps to begin operating sooner with less water in the regional system during rain events.

THE CHALLENGE: : GLWA has seen an increase in significant rain events during recent years. This has had significant impact on communities located in southern Macomb County, eastern Wayne County and Detroit, this project optimizes the operation of equipment in older facilities such as the Connors Creek pump station and improves the regional sewer systems ability to handle regional and local storm flow. Inflation and supply chain disruption have had a significant impact increasing the cost of this project

THE ASK: A \$81.1million state appropriation toward this \$558.5 million regional project.



EXHIBIT 4



OAKWOOD DISTRICT INTERCOMMUNITY RELIEF SEWER MODIFICATION PROJECT

The Oakwood Project provides a significant opportunity to improve the operation of the regional sewer system, protect water quality, and support flood mitigation.

BACKGROUND:

- The Oakwood sewer district comprises 1,520 acres of land adjacent to the Rouge River.
- The sewer district includes the Oakwood Pump Station (PS) and combined sewer overflow (CSO) prevention facility and Retention & Treatment Basin (RTB).
- These facilities are designed to handle combined sewer system overflows in significant rain events but are currently under-utilized.
- The Northwest Interceptor sewer (NWI) brings wastewater from Wayne and Oakland County communities to GLWA's Water Resources Recovery Facility (WRRF) for treatment.
- The growth in the communities using the NWI sewer has increased the amount of wastewater it receives.
- This increases the risk of untreated combined sewer system overflows and limits the ability for wastewater to enter into the system in significant rain events.
- This project will allow GLWA to isolate portions of the NWI sewer from the Water Resources Recovery Facility (WRRF) and divert flow to the Oakwood Pump Station.

BENEFITS:

- **Resiliency:** Maximizes the NWI sewer's capacity to receive wastewater flow from Wayne and Oakland County communities in significant rain events. Reduces likelihood of sewer flooding events.
- **Water Quality/Resiliency:** Provides additional wastewater retention and treatment capabilities if WRRF treatment ability was interrupted or unavailable
- **Resiliency:** Provides additional capacity in the NWI to support possible future local sewer separation or storm water projects.
- **Flood Mitigation:** Provides additional capacity for City of Dearborn wastewater flow during significant storm events which reduces the likelihood of sewer flooding events.
- **Flood Mitigation:** Reduces risk of Southfield Freeway (M-39) flooding during significant storm events. These benefits will be especially impactful in the area of the freeway adjacent to Dearborn's Fairlane Town Center development. (Between Michigan Avenue and Ford Road)

THE CHALLENGE: Inflation has increased the costs for this project by almost \$30 million in the past 12 months. These increased costs challenge GLWA's ability to maintain its affordability commitments on rate increases. As a result, GLWA has been forced to defer critical system improvement projects such as this and instead prioritize projects necessary to simply maintain current system operations.

THE ASK: A \$45 million state appropriation toward this \$83.5 million regional project. This appropriation will allow the Oakwood Project to continue to proceed in a timely matter.



EXHIBIT 5



FOX CREEK ENCLOSURE CONDITION ASSESSMENT

The Fox Creek Enclosure is a structure owned by Wayne County located within the regional sewer system. While it has not been inspected in some time, it is believed that the inspection, cleaning, and performance of any necessary repairs may provide an opportunity to optimize the regional sewer system's resiliency, especially in rain events.

BACKGROUND:

- The Fox Creek Enclosure (FCE) is located within a Wayne County Chapter 4 drain district and was constructed over 100 years ago.
- The terms of the statute under which the FCE was constructed, require maintenance and any necessary repairs be accomplished through a special assessment on properties located within the drainage district. These properties are primarily residential.
- The FCE is adjacent to portions of the regional sewer system leased by GLWA, as well as Macomb Sanitary District, Grosse Pointes' and Detroit's local systems.
- Wayne County is interested in transferring the FCE to GLWA. However, inspection of the FCE would be necessary before such a transfer could be completed.
- If the FCE was transferred to GLWA, future operations and maintenance costs would be more easily handled through member partner communities' annual regional sewer charges rather than special assessments to individual properties.
- It is believed that the FCE was last inspected in 2012. Based upon a very rough estimate, inspection, cleaning, and optimization of the FCE could have an associated cost of at least \$25 million.
- Optimization of the FCE could help manage and reduce sewer flow levels within the regional and local systems and could lessen the risk of basement back-ups and street flooding in severe rainfall events.

BENEFITS:

- **Resiliency:** Optimizing the FCE will support the ability of the regional and local sewer systems to handle storm flow during wet weather events.
- **Flood Mitigation:** Optimizing the FCE should provide additional ability for the regional sewer system to accept local flow during wet weather events, lowering the risk of basement back-ups and street flooding.

THE CHALLENGE: The FCE is owned by Wayne County. Wayne County has asked GLWA to consider accepting a transfer of the asset as a part of the regional sewer system. A transfer may promote optimized operations of the regional sewer system, but an inspection is necessary before that transfer could be completed. This project will allow an inspection and assessment to take place a necessary first step in optimizing the FCE.

THE ASK: A \$5 million state appropriation toward this estimated \$25 million project.

